

# Introducing a new class of LEI for renewables

Final position on requirements to obtain the  
new class

August 2023

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# 1 Summary

From 5 April 2024, licensed electrical inspectors (**LEIs**) who inspect and certify electricity generation systems or battery systems will be required to hold a new specialised class (**RE class**) on their licence. From this date, LEIs will no longer be able to inspect and certify these systems under the general class (**G class**).

The introduction of the RE class is intended to ensure that LEIs who inspect and certify renewable electricity systems have the appropriate knowledge, skills and experience to ensure safe outcomes. This is important as Victoria transitions to greater reliance on renewable generation, storage and use and new safety risks may arise with new and evolving renewable technologies.

LEIs who want to hold the RE class (including a restricted RE class for non-renewable electricity generators) will need to apply to Energy Safe Victoria and must meet the requirements outlined below. LEIs must hold the G class to be eligible to obtain the RE class. The G class ensures LEIs have a good base understanding of testing methods and safety in a broad range of electrical installations, while the requirements below aim to ensure understanding and competence specifically for electricity generation systems and battery systems.

These requirements have been informed by feedback from stakeholders received via a survey of LEIs in late 2022 and public consultation in June/July 2023.

## Requirements to obtain the RE class

We will review the performance history of each LEI who applies to obtain the RE class to determine whether there are any performance concerns under the G class. Subject to an LEI having no performance concerns under the G class, we may issue the RE class if:

- the LEI satisfactorily completes a theoretical examination showing they have a detailed understanding of testing methods and safety in electricity generation systems and battery systems, or
- for LEIs who hold the G class as at 5 April 2024, we are satisfied that the LEI has a detailed understanding of testing methods and safety in electricity generation systems and battery systems based on information available, such as:
  - for LEIs who participate in the Victorian Government’s solar programs, we may use data from Solar Victoria’s audit program, or
  - for LEIs who do not participate in the Victorian Government’s solar programs, we may take into account an LEI’s standing or other relevant experience (e.g. LEI auditors).

The pathway for LEIs who currently hold the G class is an acknowledgement that LEIs can currently inspect and certify electricity generation systems and battery systems under that class. However, our primary concern is to ensure an LEI only obtains the RE class where there is objective evidence of their understanding and competence for those systems to ensure safety. We will only issue the RE class to an LEI without requiring them to complete a theoretical examination where we are satisfied that safety will be ensured.

## Requirements to obtain a restricted RE class for non-renewable electricity generators only

LEIs who inspect and certify electricity generating sets driven internal combustion engines as defined in the Australian Standard AS/NZS 3010 but not other electricity generation systems or battery

systems covered by the RE class will be able to apply for a restricted RE class. We may issue the restricted RE class if:

- the LEI satisfactorily completes a theoretical examination showing they have a detailed understanding of testing methods and safety in non-renewable generators as defined in AS/NZS 3010, or
- for LEIs who hold the G class as at 5 April 2024, we are satisfied that the LEI has been routinely inspecting non-renewable electricity generators as defined in AS/NZS 3010 and there are no performance concerns.

The option of a restricted RE class is an acknowledgement that the intent of the RE class was to capture renewable electricity systems rather than non-renewable electricity generators. The pathway for LEIs who currently hold the G class is an acknowledgment that they have been assessed as being competent to inspect and certify non-renewable generators under that class. However, going forward, the G class assessments will not cover non-renewable electricity generators and so we will need additional assessments for new LEIs.

## Monitoring performance

We intend to monitor the performance of LEIs who hold the RE class. We will review data from Solar Victoria's audit program and conduct our own targeted audits of renewable electricity systems inspected and certified by RE class holders with the aim of identifying any performance concerns that warrant action.

We will also use mandatory continuing professional development (**CPD**) for licence renewals to ensure LEIs maintain and develop their skills over time to ensure safety as renewable technologies evolve.

## Next steps

We will provide further communications to LEIs on how to apply for the RE class before the end of 2023.

We anticipate commencing the assessment of applications from current LEIs in early 2024 to allow sufficient time for theoretical assessments to be completed if necessary.

We will also establish and communicate the CPD requirements for the RE class, which will apply to licence renewals from 2026.

# 2 Background

Victoria is experiencing a significant uptake of renewable electricity systems, such as solar photovoltaic (PV) systems and battery systems. In fact, Victoria's renewable electricity generation is expected to increase from 25 per cent in 2020 to 56 per cent by 2030. It is critical that appropriate mechanisms are in place to continue to ensure safety as Victoria transitions to renewable generation, storage and use.

## Legislative framework to ensure safety

One of the safety mechanisms contained in the *Electricity Safety Act 1998 (Vic)* (**Act**) is a requirement for all prescribed electrical installation work to be inspected and certified by an LEI before it is energised or before it is first used after the work is carried out. Prescribed electrical installation work is more complex and/or higher risk such as work involving consumers' mains and main earthing systems, generation systems and battery systems. Inspection by an LEI is intended to provide additional assurance that the electrical work done by the electrician is compliant and safe before the electricity supply is switched on.

The *Electricity Safety (Registration and Licensing) Regulations 2020 (Vic)* (**Regulations**) set out the different classes of electrical inspection work that LEIs can hold on their licence, as outlined in table 2, with relevant definitions outlined in table 3. The classes represent the level of complexity and/or risk associated with the prescribed electrical installations they cover.

**Table 2: Classes of electrical inspection work**

Class	Scope of class
V class	High voltage electrical installations.
G class	Low voltage electrical installations, except for: <ul style="list-style-type: none"> <li>those covered by the H, M or (from 5 April 2024) the RE class, and</li> <li>electric fences intended primarily for the control or containment of animals.</li> </ul>
H class	Electrical installations located in hazardous areas and electrical equipment associated with the protection of the hazardous area.
M class	Electrical installations located in patient areas.
RE class	<ul style="list-style-type: none"> <li>electricity generation systems (excluding stand-alone power systems with a power rating that is less than 500 voltamperes), or</li> <li>battery systems.</li> </ul>

**Table 3: Definitions relevant to classes of electrical inspection work**

Term	Definition
High voltage	A voltage exceeding low voltage.
Low voltage	A voltage exceeding extra low voltage (50 volts alternating current or 120 volts ripple-free direct current) but not exceeding: <ul style="list-style-type: none"> <li>1000 volts alternating current, or</li> <li>1500 volts direct current.</li> </ul>

<b>Electricity generation systems</b>	An a.c. electricity generation system or a d.c. electricity generation system.
<b>a.c. electricity generation system</b>	An electricity generation system (other than a battery storage energy system) that has a nominal operating voltage exceeding 50 volts alternating current.
<b>d.c. electricity generation system</b>	An electricity generation system (other than a battery storage energy system) that has: <ul style="list-style-type: none"> <li>• a nominal operating voltage or open circuit voltage exceeding 50 volts direct current, and</li> <li>• an individual or combined rated generation capacity equal to or greater than 240 watts.</li> </ul>
<b>Battery system</b>	A battery or battery energy storage system that has: <ul style="list-style-type: none"> <li>• a nominal operating voltage exceeding 12 volts direct current, and</li> <li>• an individual or combined rated storage capacity equal to or greater than one kWh.</li> </ul>
<b>Battery energy storage system</b>	Has the same meaning as “battery energy storage system BESS” has in AS/NZS 5139.

Energy Safe is responsible for granting licences. The Regulations provide that we may issue a licence to a person if they have:

- demonstrated to our satisfaction that they have the qualifications, experience, competence and proficiency
- satisfactorily completed any course of instruction that we require
- satisfactorily completed any practical or theory examinations that we require.

With respect to the required qualifications, proficiency and experience for the RE class the Regulations specify that an LEI must have:

- the qualifications, proficiency and experience for the person to be issued a licence to carry out G class electrical inspection work
- a detailed understanding of safety in electricity generation systems and battery systems
- a detailed understanding of the testing methods for electricity generation systems and battery systems
- knowledge of the requirements of the Regulations relating to electricity generation systems and battery systems.

If we are satisfied that a person has only demonstrated qualifications, experience, competence and proficiency in some areas, the Regulations provide that we may impose conditions on a licence specifying the type of installations that the person can inspect.

The Regulations also allow us to specify CPD requirements for renewal of a licence. The CPD requirements for any one class must not exceed:

- 8 hours of skills maintenance activities
- 8 hours of skills development activities.

## Safety concerns leading to the introduction of the RE class

The Regulations were amended in 2022 to introduce the RE class following a Regulatory Impact Statement (RIS) process led by the Department of Environment, Land, Water and Planning

(DELWP).<sup>1</sup> The changes mean that, from 5 April 2024, LEIs who inspect and certify electricity generation systems or battery systems will be required to hold the RE class on their licence.

Audits and reviews, such as our [Review of the Electrical Inspection Regime](#), identified that some LEIs with the G class are failing to identify unsafe and non-compliant renewable electricity systems. The reviews raised concerns that the broad remit of the G class meant renewable electricity systems were not being inspected by LEIs with sufficient proficiency in these systems to reduce the risk of unsafe installations being certified and energised.

Through the RIS process, DELWP consulted on options to introduce the RE class and sought feedback on a number of matters including:

- the introduction of the RE class
- the scope of the RE class
- whether the G class should be a pre-requisite for the RE class
- whether other changes were necessary to assist in the oversight and compliance regime for the RE class.

DELWP and the Minister for Energy and Resources subsequently decided to introduce the RE class. The submissions and DELWP's statement of reasons are available on the [Engage Victoria](#) website.

## Consultation to inform requirements to obtain the RE class

Energy Safe is responsible for implementing the RE class, which includes determining the assessment requirements for an LEI to obtain the RE class and the CPD requirements for licence renewals.

We undertook a short survey of LEIs in late 2022 (**2022 survey**) to obtain initial feedback on matters relating to the requirements to obtain the RE class. We received a total of 43 responses – 38 from individual LEIs and 5 from LEI industry representatives. A summary of responses to the 2022 survey is included in section 3 of this paper. A more detailed summary was provided in our consultation paper (discussed below).

We published a consultation paper in June 2023 (**2023 consultation paper**) and asked for feedback on our proposed requirements to obtain the RE class, which was informed by feedback to the 2022 survey. We received a total of 12 submissions from industry bodies, LEI auditors and individual LEIs and electricians. A summary of responses to the 2023 consultation paper is included in section 3 of this paper.

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<sup>1</sup> DELWP become known as the Department of Energy, Environment and Climate Action (DEECA) on 1 January 2023.

# 3 Issues

There are five key issues relating to the requirements to obtain the RE class:

- Whether the G class should be a pre-requisite to obtain the RE class.
- Whether sub-classes should apply to the RE class.
- What the requirements to obtain the RE class should be.
- Whether there should be different requirements for current LEIs.
- Whether there should be the option of a restricted RE class for non-renewable electricity generators and what the requirements to obtain a restricted RE class should be.

We outline our position on each of these issues below together with a summary of the feedback from stakeholders that have informed our views.

## Issue 1: G class as a pre-requisite to obtain the RE class

The Regulations require LEIs who hold the RE class to, amongst other things, have the qualifications, proficiency and experience to be issued the G class. The Regulations do not, however, explicitly require an LEI to hold the G class to obtain the RE class.

### Response to the 2022 survey

We did not ask a question relating to this issue in the 2022 survey as DELWP consulted on this issue as part of the RIS process. There was general agreement as part of that consultation that the G class should be a pre-requisite to obtain the RE class.

### Preliminary position

Our preliminary position was that LEIs should be required to hold the G class to be eligible to obtain the RE class (or a restricted RE class).

### Submissions to the 2023 consultation paper

Submissions that addressed this issue supported our preliminary position.

Specific comments made in submissions as follows:

Industry bodies and LEI auditors	LEIs and Electricians
Fully support the prerequisite of a G class inspector's licence for all new and existing LEIs applying for the additional class of RE licence. It has been established that the integration of specialist electrical areas necessitates familiarity with general requirements.	

### Final position

Noting general support through submissions, we confirm our preliminary position that LEIs will be required to hold the G class to be eligible to obtain the RE class (or a restricted RE class).

Making the G class a pre-requisite ensures that all LEIs who seek to obtain the RE class have a good base understanding of testing methods and safety in a broad range of electrical installations. We can then focus the requirements to obtain the RE class on testing an LEI's understanding and competence specifically for renewable electricity systems.

## Issue 2: Sub-classes for the RE class

Renewable electricity systems covered by the RE class are many and varied, and include:

- solar PV systems
- wind generation systems
- hydro generation systems
- battery systems.

Solar PV systems and battery systems are already relatively common in small-scale residential and commercial settings, which typically involve generation/storage capacity of up to and including 30 kW. However, we are also seeing an increase in the installation of larger-scale systems exceeding 30 kW and wind and hydro generation systems. New risks are also likely to emerge as renewable technologies continue to evolve over time.

The RIS issued by DELWP noted that it may be impractical to require applicants to demonstrate competency and experience in all types and sizes of renewable electricity systems. The RIS suggested that sub-classes could potentially apply to the RE class. For example, the RE class could be further broken down by generation/storage capacity or system type. If there were sub-classes, an LEI could apply for one or multiple sub-classes. An LEI would only have to demonstrate that they have the appropriate knowledge, skills and experience for each of the sub-classes that they sought to hold.

### Response to the 2022 survey

We asked whether sub-classes should apply for the RE class such that an LEI should be able to apply to inspect and certify only certain categories of renewable electricity systems (e.g. < 30kW systems only or solar PV systems only).

Most survey respondents did not support having sub-classes. A prominent theme in the feedback was that LEIs should be trained and assessed to the highest possible standard that allows them to inspect various system types and capacities. Additionally, that mandatory CPD could be used to improve knowledge of new and emerging renewable technologies and risks. There were also concerns raised about there already not being enough LEIs to inspect some types of systems and that this issue would be exacerbated if sub-classes applied.

### Preliminary position

Our preliminary position was to not have sub-classes for the RE class at this time (except in relation to non-renewable generators discussed at issue 5). We were of the view that a better outcome would be to focus on ensuring that LEIs have the knowledge, skills and experience that enables them to inspect and certify a broad range of renewable electricity systems and ensure safe outcomes.

### Submissions to the 2023 consultation paper

Submissions that addressed this issue largely supported our preliminary position, although an individual submitted that sub-classes should apply.

Specific comments made in submissions as follows:

Industry bodies and LEI auditors	LEIs/Electricians
Do not support further sub-classing of RE systems at this time. LEIs are required to demonstrate their understanding of RE systems and therefore know what to test for in their ongoing safe operation, regardless of the nuance some systems have. In circumstances with new or irregular RE systems, LEIs study and consult on a particular system when	Subclasses can provide further clarity with respect to size and types of installations that could be inspected, however, it can also place greater complexity and bureaucracy with respect to the management of these subclasses which could become cost and resource prohibitive if made further complex by current or future issues.

Industry bodies and LEI auditors	LEIs/Electricians
required to understand any nuance and then assess accordingly.	
There has been an acute shortage of LEIs in Victoria for at least 5 years. Sub-classing would cause a further dearth of competent inspectors in sectors of the RE industry.	Licence classes should apply as follows: <ul style="list-style-type: none"> <li>• G - basic license to inspect installations with no generation system of any type.</li> <li>• RES - small scale solar installations total capacity up to 30kw with no other generation sources or battery.</li> <li>• REB - battery systems with a total capacity up to 30kw.</li> <li>• REL - large solar and/or battery systems with a total capacity greater than 30kw.</li> <li>• REG - low voltage fuel powered generation systems of any capacity.</li> <li>• High voltage generators to be under H class.</li> <li>• REA - endorsement that covers all RE classes. RES, REB, REL, REG.</li> </ul>

## Final position

Noting limited support in submissions for sub-classes, we confirm our preliminary position that sub-classes will not apply for the RE class at this time (except in relation to non-renewable electricity generators discussed at issue 5).

We accept there are differences between various types and sizes of renewable electricity systems and that LEIs will need to understand a broad range of systems if there are no sub-classes. However, we also note that renewable technologies will continue to evolve over time and LEIs will need to be able to adapt and evolve too. A point in time assessment cannot possibly test for all future possibilities.

We are therefore of the view that the better outcome is to focus on ensuring that LEIs who obtain the RE class have the knowledge, skills and experience that enables them to inspect and certify a broad range of renewable electricity systems. This will provide the foundations to ensure safe outcomes now and into the future. Through mandatory CPD for licence renewals we will ensure LEIs maintain and develop their skills overtime to ensure safety as renewable technologies evolve. We also expect LEIs to proactively seek out their own education and training where they identify a gap in their knowledge and skills.

We note this approach also simplifies the pathway for an LEI to obtain the RE class and minimises complexity for industry participants who need to engage an LEI. We are mindful of concerns raised in submissions about shortages of LEIs. There are currently 285 LEIs listed on our public register, with around half of those active in the renewable electricity space. We believe this approach will drive safe outcomes while ensuring the LEI cohort can continue to support Victoria's transition to renewable generation, storage and use.

We intend to ensure our compliance programs and systems enable us to capture data to effectively monitor and evaluate the performance of LEIs who hold the RE class over time. We can revisit this issue later or consider other action where we identify emerging issues or performance concerns.

## Issue 3: Requirements to obtain the RE class

The Regulations provide that we may issue a licence to a person if we are satisfied that they have:

- the appropriate qualifications, experience, competence and proficiency
- satisfactorily completed any course of instruction that we require

- satisfactorily completed any practical or theory examinations that we require.

## Response to the 2022 survey

We asked whether LEIs who wish to hold the RE class should be assessed using theoretical examinations, practical examinations a combination of both or some other method.

Respondents to our survey provided mixed views on the assessment requirements. While the majority supported the use of both theoretical and practical assessments, others suggested that no additional assessments were necessary and that an LEI's historical performance under the G class would be the best indicator of their likely performance going forward. Those who supported having assessments highlighted the importance of an LEI being able to demonstrate a thorough understanding of the requirements for inspection and testing as well as being able to demonstrate the application of that knowledge. Some responses suggested that, rather than assessments, CPD could be used to address any knowledge gaps or that there should be mandatory training to obtain the RE class.

## Preliminary position

Our preliminary position was that we would review an LEI's performance under the G class and use theoretical assessments to test an LEI's understanding of the core concepts, principles and standards relating to renewable electricity systems. This would include any specific testing requirements for these systems as required by the applicable standards.

## Submissions to the 2023 consultation paper

There remain mixed views on the assessment requirements, with some concerned that theoretical assessments do not go far enough while others are concerned about setting the bar too high resulting in further shortages of LEIs to meet demands.

Specific comments made in submissions as follows:

Industry bodies and LEI auditors	LEIs/Electricians
<p>For new LEIs, recommend the following requirements:</p> <ul style="list-style-type: none"> <li>• Additional Training: Completion of training and/or accreditation in solar, wind, battery, and other renewable generators (proof required).</li> <li>• Mentoring: Completion of mentoring from an approved and experienced RE inspector, with outcome results.</li> </ul>	<p>We commend the proposed assessment requirements for obtaining the RE class, which include a thorough review of LEIs performance history and comprehensive written (theoretical) examinations. We firmly believe that these assessments are critical to ensure that all LEIs possess the necessary expertise and knowledge specific to renewable electricity systems.</p>

Industry bodies and LEI auditors	LEIs/Electricians
<p>There are a large number of Clean Energy Council accredited installers who have recently or are currently in process of obtaining their inspector's licence. This is important to the industry with shortages of competent LEIs often being a barrier to timely energisation of electricity generation systems. Obviously the G class remains critical in ensuring all inspectors have a good base understanding of testing methods and safety in a broad range of electrical installations, however the CEC accreditation process already includes formally recognised, relevant assessments that should be considered acceptable means of determining competency – without mandating the applicant complete an additional theoretical examination.</p>	<p>Initial license requirements for RES:</p> <ul style="list-style-type: none"> <li>• Satisfactory completion of Solar Victoria's LEI Solar Course or holding CEC accreditation and</li> <li>• at least 500 small scale solar inspections and</li> <li>• an audit defect rating of less than 5% (ESV and Solar Vic combined).</li> </ul> <p>Initial license requirements for REB:</p> <ul style="list-style-type: none"> <li>• Qualify for a RES licence and</li> <li>• at least 30 solar battery inspections.</li> </ul> <p>Initial license requirements for REL:</p> <ul style="list-style-type: none"> <li>• Qualify for a RES licence and a REB and</li> <li>• completed at least 10 large scale solar inspections.</li> </ul>
<p>Many licensed inspectors are involved as either nominated committee members or working groups associated with the development of applicable Standards. Despite not necessarily being as active in prescribed inspections of this nature, their position on a Standard Committee or working group requires the member to have a detailed knowledge of these Standards. Restricting these members of industry would limit their ability to contribute being subject matter experts as they are currently recognised.</p>	<p>Initial license requirements for REG:</p> <ul style="list-style-type: none"> <li>• Have previously held a G class license before they were granted to all inspectors or</li> <li>• completed at least 10 fuel powered generation systems inspections or</li> <li>• proven track record installing fuel powered generators.</li> </ul> <p>Initial license requirements for REA:</p> <ul style="list-style-type: none"> <li>• To hold all other RE license classes.</li> </ul> <p>After the initial phase inspectors should complete formal training to obtain RE classes and mentoring by qualified inspectors.</p> <p>Experienced, qualified solar/battery/generator installers who pass their basic inspectors course should be granted appropriate RE classes.</p>
<p>Raising the bar too high to obtain the RE classification could result in existing G-class LEIs, particularly in the regions, choosing not to upskill ultimately leading to a further shortage of LEIs in the sector, a situation Victoria cannot afford during the transition.</p> <p>We have received reports of rushed electrical inspections and some LEIs performing inspections of solar systems without accessing the roof, creating a safety issue when systems have not been fully inspected for compliance. We have also received reports that the issue is worsened by the backlog of installations waiting to be inspected causing LEIs to feel they need to rush or cut corners on inspections to catch up. This creates a safety issue for the LEI themselves by not having tested and assessed a job properly but also through not properly assessing a site before accessing a switch room, for example, or not setting up fall restraint systems before accessing a roof. Increased numbers of competent LEIs will reduce the real or perceived impulse to rush, which will improve safety.</p>	

## Final position

Our primary concern is ensuring that any LEI who obtains the RE class has demonstrated that they have a detailed understanding of the core concepts, principles and standards relating to renewable electricity systems. This includes any specific testing requirements for these systems as required by the applicable standards.

Noting that the G class will be a pre-requisite to obtain the RE class, we consider the G class assessments establish a good baseline of theoretical and practical competency to inspect and test a broad range of electrical installations. Notably, the G class assessments involve:

- G Theory – a written examination on a broad range of electrical knowledge (3.5 hours).
- G Practical – inspection and testing of domestic/commercial/industrial electrical installations (2.5 hours, plus 15 minutes reading time).
- Safe Approach – inspection and testing of electricity supply for construction purposes (1 hour and 20 minutes, plus 10 minutes reading time).

Therefore, our assessment for the RE class can focus on testing understanding and competence specifically for renewable electricity systems. We remain of the view that this can be achieved through theoretical assessments given the practical assessments completed as part of the G class. Notably, the G class practical assessment test competency in inspection and testing methods that will be transferrable to renewable electricity systems. For example, the G class practical assessments look at testing earthing of switchboards with the same concepts applying to testing earthing of solar PV modules.

We can use theoretical assessments to test understanding of the core concepts, principles and standards relating to renewable electricity systems to ensure an LEI has the foundations to ensure safe outcomes now and into the future. This will include any specific testing requirements for these systems as required by the applicable standards. That said, as noted above, a point in time assessment cannot possibly test for all future possibilities.

We therefore intend to supplement the use of theoretical assessments with mandatory CPD for licence renewals to ensure LEIs maintain and develop their skills over time to ensure safety as renewable technologies evolve. We will also review data from Solar Victoria's audit program and conduct our own targeted audits of renewable electricity systems inspected and certified by RE class holders with the aim of identifying any performance concerns that warrant action.

We note suggestions in submissions for mandatory mentoring of new LEIs. We agree that mentoring by an experienced LEI can provide benefits, however, we also note that submissions have raised concerns about there being an undersupply of LEIs. We are concerned that there are insufficient LEIs available to provide mandatory mentoring. Instead, we intend to conduct targeted audits of new LEIs to identify any performance concerns and need for additional education and training. That said, we would encourage all new LEIs to seek mentoring by an experienced LEI and to proactively seek out their own education and training where they identify a gap in their knowledge or skills.

We also note suggestions that new LEIs should be required to complete additional training to obtain the RE class or that completion of training such as through CEC accreditation could replace the need for a theoretical assessment. We consider the simplest and fairest approach at this stage is to require applicants to submit to the same assessment (with the exception of some current LEIs as discussed under issue 4). However, we anticipate revisiting this issue in the future and may introduce a requirement for specified accredited training to be completed in addition to, or in replace of, a theoretical assessment.

## Issue 4: Requirements for current LEIs to obtain the RE class

LEIs who currently hold the G class can inspect and certify electricity generation systems or battery systems under that class until 5 April 2024.

### Response to the 2022 survey

We asked whether current LEIs with a history of inspecting and certifying renewable electricity systems under the G class should be subject to the same assessments as new LEIs.

Most survey respondents indicated that data from Solar Victoria and Energy Safe's compliance programs could be used to determine whether a current LEI should be granted the RE class without undergoing assessments. However, some responses suggested that assessments should apply regardless of whether an LEI currently inspects and certifies renewable electricity systems to ensure everyone who holds the RE class has demonstrated competence to the same minimum level. The length of time someone has been an LEI and whether they have undertaken other relevant training were also suggested as possible factors to take into consideration.

### Preliminary position

Our preliminary position was that, for LEIs who participate in the Victorian Government's solar programs, we could use data from Solar Victoria's audit programs to inform our decision on whether to grant the RE class without requiring the LEI to undertake further assessment. For LEIs who do not participate in the Victorian Government's solar programs or where there is insufficient audit data available from Solar Victoria, we could potentially undertake targeted audits of installations they have inspected and certified.

We noted that, where an LEI has not necessarily been inspecting and certifying electricity generation systems and battery systems, we could take other factors into account where they have otherwise been involved in ensuring the safety of these systems (e.g. LEIs who conduct audits of other LEIs on behalf of Solar Victoria or Energy Safe).

### Submissions to the 2023 consultation paper

There remain mixed views on the assessment requirements for current LEIs. Some suggest that all LEIs seeking to obtain the RE class should be subject to assessments (and potentially mandatory completion of nationally recognised training). Others suggest that we should consider a broader range of experience to potentially grant existing LEIs the RE class without assessment.

Specific comments made in submissions as follows:

Industry bodies and LEI auditors	LEIs/Electricians
<p>Current holders of inspector's licence should provide evidence of the types of work undertaken over the last 5 years, such as solar, battery, wind, renewable generators, etc.</p>	<p>We strongly advocate for additional assessments for LEIs who already hold the G class by April 5, 2024. This additional evaluation will guarantee that their skills align with the requirements of the RE class, thereby safeguarding the integrity of the inspection and certification processes.</p> <p>It is our conviction that any LEI reluctant to participate in these assessments might not</p>

Industry bodies and LEI auditors	LEIs/Electricians
<p>Suggest the following confirmation of competency options for existing general class inspectors within the last 24 months prior to the issuing of the RE class:</p> <ul style="list-style-type: none"> <li>• Evidence of at least 50 prescribed electrical inspections on solar installations and/or battery installations.</li> <li>• Non-compliance defect rate of less than 5%, with no unsafe defects identified unless additional skills maintenance has been undertaken to the acceptance of ESV.</li> </ul> <p>Completion of the Solar Victoria Skills Set 2 training and/or participation in at least one Solar Installation Inspection mentoring session.</p>	<p>prioritise the best interests of the industry, as a commitment to ongoing professional development is essential for maintaining high industry standards.</p>
<p>Support the proposal as the Solar Victoria audit program provides detailed, evidence-based findings against a comprehensive checklist modelled on the relevant Australian Standards.</p> <p>Many of the auditors used on this program do not undertake a significant volume of prescribed inspections (generally to mitigate conflict of interest) and therefore will not have adequate qualifying history under this criteria. If Energy Safe is intending to use this audit data to assess the competence of LEIs completing the prescribed inspection, we believe the auditors responsible for obtaining this data should be considered competent.</p>	<p>Highly recommend this position to issue a RE licence include a provision for the completion of nationally recognised units of competency irrespective of performance or review or number of years LEI has held licence. Currency of knowledge far surpasses years of experience especially if those years are not in the specific field and a LEI with insufficient knowledge may not be identified because of a great installer.</p>
<p>Energy Safe should also consider an LEI's experience with the inspection and/or auditing of large complex renewable energy systems including solar farms, large-scale battery projects and wind farms, in addition to third party regulator audit programs of renewable energy systems. Whilst an LEI may not have experience on the Solar Homes Program, it is possible they provide specialised services on these projects which require a more detailed knowledge of relevant standards and testing methods far in excess of the knowledge level associated with small domestic and commercial systems. In addition to any work in Victoria, it is common for Inspectors to complete auditing services in other states where their Victorian qualifications are generally regarded as acceptable proof of competency. An Inspector who has acted as an Independent Certifier for numerous large-scale battery, solar and wind projects in the ACT for example should certainly be recognised for their knowledge and experience.</p>	<p>Your approach for solar and battery in the RE licence class is valid based on the statistics from Solar Vic and Energy Safe. Your RE licence class approach for wind and water generation is not valid and further discussion required as the hazards and risks and installation requirements for wind and water generation are different to that of Solar PV and BESS.</p>

Industry bodies and LEI auditors	LEIs/Electricians
<p>Where historical performance does not deem an existing G-class LEI eligible for the RE class without completing written (theoretical) assessments, a mentor system whereby an experienced RE LEI accompanies a newly classed RE LEI on the first 2-3 jobs may be the best way to encourage participation in the sector. However, there has been resistance to this approach as it is difficult to motivate experienced LEIs to take time out of their schedules to train others, particularly as they may view it as training their competitors. A solution to this may be using the trainers that teach the LEI courses to mentor, as they're already committed to developing the next generation and will not take more LEIs out of the available pool.</p> <p>Where written theoretical assessments are required, recommend free online content accompanied by multiple choice exams or similar. Supporting LEIs to upskill and participate in the RE industry benefits all. Also acknowledge that the CPD program will help to keep RE LEIs skills and knowledge sharp, along with a continued audit program that will identify LEIs that are no longer at the required competency or not acting in accordance with their obligations.</p>	<p>Having completed several thousand solar and hundreds of battery inspections I would feel robbed if I was not automatically granted a full RE license.</p> <p>Inspectors who have been inspecting generation systems should automatically receive an RE endorsement according to their experience.</p> <p>Experience considered at this stage should be based on the number of inspections performed and their training.</p>

## Final position

We acknowledge that LEIs who currently hold the G class can inspect and certify electricity generation systems or battery systems under that class. Arguably, current LEIs have already been assessed and deemed competent to inspect and certify these systems. However, we note one of the key issues identified in the RIS issued by DELWP was that the G class assessments currently cover a broad range of renewable and non-renewable electrical installations. There is no guarantee that an LEI who has obtained the G class had specifically demonstrated competence in renewable electricity systems. Accordingly, we remain of the view that it is not appropriate to simply award the RE class to all current LEIs without further consideration and potentially assessment.

Our primary concern is to ensure an LEI only obtains the RE class where there is objective evidence of their understanding and competence of a broad range of renewable electricity systems to ensure safety now and into the future. Our preliminary position was that we could potentially rely on an LEI's performance history and other information to deem them competent to obtain the RE class without additional assessment. While a number of submissions supported this, submissions also highlighted that a good performance history could be to an LEI inspecting work by a highly competent installer (i.e. there were no issues to be found in the first place). Also, that an LEI's performance history may not cover systems such as wind and water generation given they have been less common to date.

We remain of the view that an LEI's performance history can be an effective indicator of whether they have sufficient knowledge, skills and experience to ensure safe outcomes. However, we agree that this alone may not be sufficient to grant the RE class unless they can demonstrate experience for a broad range renewable electricity systems. We also agree that currency of knowledge and experience is important, particularly given there were significant changes to relevant solar standards in 2020/21.

For LEIs who participate in the Victorian Government's solar programs, we will use data from Solar Victoria's audit program over the last two years to inform our decision. This will ensure performance following recent changes to relevant solar standards is captured in the data. We will also consider

whether the breadth of systems an LEI has been inspecting and certifying under that program is sufficient. Where we are not satisfied an LEI has demonstrated sufficient depth or breadth of experience and/or competency, we may require the LEI to complete a theoretical assessment.

For LEIs who do not participate in the Victorian Government's solar programs, we may take into account an LEI's standing or other relevant experience. For example, LEIs who conduct audits of other LEIs on behalf of Solar Victoria or Energy Safe are likely to be considered competent. As above, regardless of an LEI's standing, we may require an LEI to complete a theoretical assessment where we are not satisfied the LEI has demonstrated sufficient depth or breadth of experience and/or competency.

We note suggestions in submissions for mentoring of LEIs who have not demonstrated sufficient experience to be granted the RE class without assessment. As discussed previously, we agree that mentoring can provide benefits, however, we are concerned that there are insufficient LEIs available to provide mandatory mentoring. That said, we would encourage all LEIs to seek mentoring by an experienced LEI and to proactively seek out their own education and training where they identify a gap in their knowledge or skills.

In addition to mandatory CPD for licence renewals, we intend to review data from Solar Victoria's audit program and conduct targeted audits to identify any performance concerns and need for additional education and training. We can consider placing conditions on licences where we believe further training is needed or take other action if warranted.

## **Issue 5: Restricted RE class for non-renewable electricity generators**

The Regulations define the scope of the RE class as:

- electricity generation systems (excluding stand-alone power systems with a power rating that is less than 500 voltamperes), or
- a battery system.

This definition captures electricity generating sets that are driven by internal combustion engines as defined in the Australian Standard AS/NZS 3010.

AS/NZS 3010 defines a generating set as an alternator, d.c. generator or combination thereof, including an internal combustion engine and associated switchgear and control equipment. The standard sets out the minimum safety requirements related to these generating sets that form any of the following:

- Normal supply source for electrical installations.
- Alternative supply source for electrical installations.
- Electrical supply source for the connection of electrical appliances and portable tools.
- Supply sources that operate in parallel with the normal supply in the electrical installation.

AS/NZS 3010 does not apply to uninterruptible power supplies or other energy generation systems such as inverters, PV arrays, water or wind driven turbines.

### **Response to the 2022 survey**

Respondents to the survey raised the issue of the RE class capturing non-renewable electricity generators as defined in AS/NZS 3010. Respondents noted that the intent of the RE class was to target renewable electricity systems and suggested non-renewable electricity generators should remain part of the G class.

## Preliminary position

Our preliminary position was to allow LEIs who want to inspect and certify electricity generating sets driven by internal combustion engines as defined in AS/NZS 3010 to obtain a restricted RE class without being subject to any additional assessments.

## Submissions to the 2023 consultation paper

Submissions that addressed this issue supported our preliminary position.

Specific comments made in submissions as follows:

Industry bodies and LEI auditors	LEIs/Electricians
<p>The inclusion of motor generator sets in this class is onerous and should possibly be considered separately given that these types of installations require specific knowledge and understanding and do not meet the criteria of a renewable energy source.</p> <p>Many G Class Licensed Electrical Inspectors are currently involved with the inspection of motor generator sets across a broad range of electrical installations at present, where to our knowledge there is no significant electrical safety of compliance concerns. A motor generating system is simply an extension of the electrical installation and does not warrant being classified as a renewable energy system requiring a separate class of licence.</p>	<p>As an LEI who has no interest in performing inspections on renewable systems but who wants to continue to inspect and certify internal combustion engine driven generating systems, as relevant to AS/NZS 3010, I applaud the option of granting restricted RE class licenses.</p> <p>It's unfortunate that non-renewable generating systems were ever caught up in the considerations of a renewable license arrangement but I see the granting of restricted RE class licenses as a workable, if not ideal, solution.</p>
<p>While opposed to the inclusion of a restricted RE class for fuel-driven generators, we accept this class with reservation given the historical background. We expect LEIs who have previously carried out electrical inspections in this area to be issued this restricted class of RE.</p> <p>Further, new General Class LEIs should be required to complete additional training in the inspection of fuel-driven generators, have a minimum of 2 mentoring sessions with a competent RE (restricted) trainer, and undergo an audit of 3 of their first 10 inspections within 12 months. In the future, expect this class to become a standalone class with the G Class license as a prerequisite</p>	<p>The motor generator sub-generation class should not be part of the RE licence. Keep the motor generator inspecting under the G class or have an RE – motor generator sub class attached to every existing G class licence.</p>

## Final position

We acknowledge that electricity generating sets driven by internal combustion engines as defined in AS/NZS 3010 were not the intended target of the RE class. However, a change to the scope of the RE class to exclude non-renewable electricity generators would require legislative changes. Therefore, noting general support through submissions, we confirm our preliminary position with a slight amendment as explained below.

We note the G class assessments currently have a specific section on inspecting and certifying non-renewable electricity generators. This means all LEIs who currently hold the G class licence will have been required to demonstrate their competency through assessment to obtain that class. Therefore, subject to there being no performance concerns, we consider it appropriate to issue a restricted RE

class to an LEI who has been routinely inspecting non-renewable electricity generators under the G class without further assessment.

However, going forward, the G class assessments will no longer have a specific section on non-renewable electricity generators as they are no longer part of the scope of that class. Therefore, we will need to test competency before we issue a restricted RE class for LEIs who have not been assessed on non-renewable electricity generators as part of the G class. We are of the view that this can be achieved through a targeted theoretical examination.

We note that LEIs who wish to obtain a restricted RE class will still be required to hold the G class as a pre-requisite.

# 4 Requirements to obtain the RE class

LEIs who want to obtain the RE class (or a restricted RE class) will need to apply to Energy Safe and must meet the requirements outlined below. LEIs must hold the G class as a pre-requisite to obtain the RE class (or a restricted RE class).

## Requirements to obtain the RE class

We will review the performance history of each LEI who applies to obtain the RE class to determine whether there are any performance concerns under the G class. Subject to an LEI having no performance concerns under the G class, we may issue the RE class if:

- the LEI satisfactorily completes a theoretical examination showing they have a detailed understanding of testing methods and safety in electricity generation systems and battery systems, or
- for LEIs who hold the G class as at 5 April 2024, we are satisfied that the LEI has a detailed understanding of testing methods and safety in electricity generation systems and battery systems based on information available, such as:
  - for LEIs who participate in the Victorian Government’s solar programs, we may use data from Solar Victoria’s audit program, or
  - for LEIs who do not participate in the Victorian Government’s solar programs, we may take into account an LEI’s standing or other relevant experience (e.g. LEI auditors).

## Requirements to obtain a restricted RE class for non-renewable electricity generators

LEIs who inspect and certify electricity generating sets driven internal combustion engines as defined in the Australian Standard AS/NZS 3010 but not other electricity generation systems or battery systems covered by the RE class will be able to apply for a restricted RE class. We may issue the restricted RE class if:

- the LEI satisfactorily completes a theoretical examination showing they have a detailed understanding of testing methods and safety in non-renewable generators as defined in AS/NZS 3010, or
- for LEIs who hold the G class as at 5 April 2024, we are satisfied that the LEI has been routinely inspecting non-renewable electricity generators as defined in AS/NZS 3010 and there are no performance concerns.

# 5 Next steps

We will provide further communications to LEIs on how to apply for the RE class before the end of 2023.

We anticipate commencing the assessment of applications from current LEIs in early 2024 to allow sufficient time for theoretical assessments to be completed if necessary.

We will also establish and communicate CPD requirements for the RE class, which will apply to licence renewals from 2026.