



## **Electricity Supply and Electrical Capstone Process**

Tukanga Mātau mo te Hiko me te Tuku Hiko

Waihanga Ara Rau

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## 1. Purpose and audience (Te aronga matua me te hunga whakarongo)

The purpose of this document is to outline the Consent to Assess process for Waihanga Ara Rau. The audience for this process is:

- GM Assurance
- Assurance Managers and Specialists
- Electricity Supply and Electrical Capstone Advisory Group
- Electricity Supply Industry
- Electrical Industry (Domestic, commercial, industrial)

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## 2. Approval (Whakaaetanga)

<b>Approved by</b>	Waihanga Ara Rau Assurance Committee
<b>Date approved</b>	
<b>Next Review</b>	31/01/25

<b>Version</b>	<b>Date</b>	<b>Nature of Amendment</b>
1.0	20/08/2020	New document created.
2.0	10/12/2021	Document transitioned from Connexis to Waihanga Ara Rau
3.0	31/03/2022	US28110 added to LMD and CJ capstones, minor edits of wording
4.0	27/07/2022	Addition of Electrical industry
<b>5.0</b>	29/06/2023	Replacement of US28278 with US33058, revised assessor process.
<b>6.0</b>	24/01/24	Review to align to 2024 Moderation Plan

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### 3. Background (Papamuri)

In the Electricity Supply and Electrical sectors there is a direct correlation between Waihanga Ara Rau qualifications and registration with the EWRB. There are 'Capstone' units that have been put in place to give some robustness and quality assurance to the EWRB that graduates meet both the qualification outcomes and the registration requirements of the EWRB.

For Electricity Supply the capstone units are assessed within the programme structure. For electrical the ākongā will need to complete the external EWRB examinations to be awarded the relevant unit standard.

A Memorandum of Understanding will be put in place between the EWRB Board and Waihanga Ara Rau to ensure there is a common understanding and agreement around qualification and capstone requirements.

Capstone units are deemed to be 'high risk' and therefore there needs to be a robust process around the awarding of capstone unit standards and who can assess these unit standards.

The assessment of the practical capstone unit standard/s needs to be done independently of the training process. Therefore, the assessor must not be the person who has trained the ākongā.

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### 4. Process purpose and application (Te aronga matua mo te tukanga me te whakamahi)

The purpose of this process is to ensure:

- A consistent approach to the awarding of Electrical Supply and Electrical qualifications and EWRB registration requirements.
- A consistent approach to the assessment of capstone unit standards, including who can assess them.
- The process is fit for purpose and consistent with best practice principles.

This process **is applicable to all** Electricity Supply and Electrical programmes and qualifications named in this policy. It will form part of the agreement with EWRB and ensure a link between qualification completion and EWRB registration.

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### 5. Capstone units for Electricity Supply (Ngā waiene mātau mo te Tuku Hiko)

It has been agreed by the Electricity Supply industry that the following unit standards should be deemed as capstones.

This has been based on the following principles:

- There should be one theory unit standard on legislation and regulations for electricity supply. This should be common across all qualifications, unless specified separately. This assessment must be undertaken and cannot be awarded by RCC or another form of credit recognition, unless specified in this process document.
- There should be one practical unit standard contextualized for each electricity supply qualification, unless specified as not required. There is a need to maintain a robust assessment and moderation practice as this is deemed to be a ‘high risk’ assessment. The assessment can be undertaken in a workplace or simulated environment using a common assessment tool. Evidence of one practical demonstration is deemed to be sufficient. This assessment must be undertaken and cannot be awarded by RCC or another form of credit recognition, unless specified in this process document.

#### 6. New Zealand Certificate in Electricity Supply (Line Mechanic Distribution) (Level 4) with an optional strand in Live Low Voltage Lines [Ref: 2197-2]

Unit Standard	Title
32255	Demonstrate and apply knowledge of legislation and codes of practice in the electricity supply industry
31954	Install and commission network lines, and service a transformer using an access permit
28110	Demonstrate knowledge of electrical power, energy, cost of consumption, and inductors and capacitors in AC circuits

##### Notes:

- US32255 has replaced US28109. Prior achievement of US28109 is deemed to meet the requirements of the theory capstone.
- US31954 replaced US28111. Achievement of US28111 is deemed to meet the requirements of the practical capstone.
- Ākonga who meet the following criteria is eligible for RPL for US32255:
  - Hold the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or an equivalent qualification, and has completed the Electrical Supply context or an equivalent context; **and**
  - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
  - Has a signed attestation from their employer or supervisor confirming that the applicant can demonstrate an understanding of Electricity Supply legislation and code of practice.

#### 7. New Zealand Certificate in Electricity Supply (Cable Jointer High Voltage) (Level 4) with an optional strand of 33kV [Ref: 2227-3]

Unit Standard	Title
32255	Demonstrate and apply knowledge of legislation and codes of practice in the electricity supply industry

US33058 OR US28278	Plan, joint, and test underground cables, and operate a cable spiking or cutting tool.
28110	Plan, joint, and test underground cables, and carry out a rescue from an electricity supply pit ( <b>expires 31/12/2023</b> )
	Demonstrate knowledge of electrical power, energy, cost of consumption, and inductors and capacitors in AC circuits

**Notes:**

- US33058 has replaced US28278. Prior achievement of US28278 is deemed to have met the requirements of the practical capstone.
- US32255 has replaced US28109. Achievement of US28109 is deemed to meet the requirements of the theory capstone.
- Ākonga who meet the following criteria is eligible for RPL for US32255:
  - Hold the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or an equivalent qualification, and has completed the Electrical Supply context or an equivalent context; **and**
  - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
  - Has a signed attestation from their employer or supervisor confirming that the applicant can demonstrate an understanding of Electricity Supply legislation and code of practice.

**8. New Zealand Certificate in Electricity Supply (Transmission Line Maintenance) (Level 4) with strands in Line Mechanics and Structure Maintenance [Ref: 2705-2]**

Unit Standard	Title
32255	Demonstrate and apply knowledge of legislation and codes of practice in the electricity supply industry
28943	Plan and carry out maintenance on transmission grid assets, and carry out a rescue

**Notes:**

- US32255 replaced US28942. Prior achievement of US28942 is deemed to meet the requirements of the theory capstone.
- Ākonga who meet the following criteria is eligible for RPL for US32255:
  - Holds the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or an equivalent qualification, and has completed the Electrical Supply context or an equivalent context; **and**
  - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
  - Has a signed attestation from their employer or supervisor confirming that the applicant can demonstrate an understanding of Electricity Supply legislation and code of practice.

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## 9. New Zealand Certificate in Electricity Supply (Substation Maintenance) (Level 4) [Ref: 4126-1]

Unit standard	Standard name
32255	Demonstrate and apply knowledge of legislation and codes of practice in the electricity supply industry
28893	Maintain and test substation equipment

### Notes:

- US32255 replaced US28885. Prior achievement of US28885 is deemed to meet the requirements of the theory capstone.
- Ākonga who meet the following criteria is eligible for RPL for US32255:
  - Holds the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or an equivalent qualification, and has completed the Electrical Supply context or an equivalent context; **and**
  - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
  - Has a signed attestation from their employer or supervisor confirming that the applicant can demonstrate an understanding of Electricity Supply legislation and code of practice.

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## 10. New Zealand Certificate in Electricity Supply (Traction Line) (Level 4) [Ref: 3988-1]

Unit standard	Standard name
32255	Demonstrate and apply knowledge of legislation and codes of practice in the electricity supply industry
31968	Install or repair traction network structures

### Notes:

- US32255 replaced US28109. Prior achievement of US28109 is deemed to meet the requirements of the theory capstone.
- Ākonga who meet the following criteria is eligible for RPL for US32255:
  - Holds the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or an equivalent qualification, and has completed the Electrical Supply context or an equivalent context; **and**
  - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
  - Has a signed attestation from their employer or supervisor confirming that the applicant can demonstrate an understanding of Electricity Supply legislation and code of practice.
- The normal assessment criteria of demonstrating competence in three separate practical tasks for US31968 is required to meet the capstone requirements.

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## 11. New Zealand Certificate in Electricity Supply (Fault Response and Switching) (Level 4) with strands in Fault Response, and Network Switching [Ref: 3586-2]

There are no capstones required for this qualification. The pathway is via a registered Electrician or a registered Line Mechanic; therefore, ākongā would have already completed a form of capstone assessment.

It is expected that ākongā hold the New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388], or the New Zealand Certificate in Electrical Trade (Level 4) with strands in General Electrical, and Electricity Supply [REF: 4204], or the New Zealand Certificate in Electricity Supply (Line Mechanic Distribution) (Level 4) with an optional strand in Live Low Voltage Lines [Ref: 2197-2], or an equivalent qualification, before undertaking the Fault Response and Switching qualification.

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## 12. New Zealand Certificate in Electricity Supply (Power Technician) (Level 5) with optional strands [Ref: 3535-1]

Unit standard	Standard name
29738	Plan, install and test electrical installation wiring and equipment
29739	Demonstrate knowledge of the electricity act, circuit protection and compliance testing of works or installation.

### Notes:

- The common pathway into Power Technician is a registered Electrician or registered Line Mechanic.
  - Ākongā who meet the following criteria are eligible for RPL for the two capstone units:
    - Hold a National or New Zealand Certificate qualification in an Electrical or Electricity Supply based trade at Level 4; **and**
    - Is currently registered as an Electrician and have a current practicing licence with the EWRB; **and**
    - Has a signed attestation from their employer or supervisor confirming that the applicant is operating at the level required of a Power Technician.

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## 13. Electricity Supply capstone assessment conditions (Ngā whakaritenga ki te aromatawai mātau mo te Tuku Hiko)

All designated capstone units must be undertaken by ākongā under normal assessment conditions. Unless otherwise specified these units are unable to be achieved through RCC.

### Theory capstone:

- Ākongā have the option of attending a tuition course before being assessed with an assessment tool that has been pre-moderated by Waihangā Ara Rau prior to use.



- For provider-based assessment, the assessment shall be undertaken using the providers normal policies and procedures for training and assessment. Provider capstone assessors need to apply to, and be endorsed by, the Waihanga Ara Rau Electricity Supply and Electrical Capstone Advisory Group. The *Capstone Assessor Endorsement Application Form* shall be used for this purpose.

Practical capstone:

- Ākongā can be assessed in the workplace or through a simulated workplace scenario using an assessment tool that has been pre-moderated by Waihanga Ara Rau prior to use.
- Evidence of one practical demonstration is deemed to be sufficient for the capstone assessment unless otherwise specified.
- For a workplace-based assessment, the assessment of the practical capstone needs to be done independently of the training process. Therefore, the assessor must not be the person who has trained ākongā.
- For provider-based assessment, the assessment shall be undertaken using the providers normal policies and procedures for training and assessment. Provider capstone assessors need to apply to, and be endorsed by, the Waihanga Ara Rau Electricity Supply and Electrical Capstone Advisory Group. The *Capstone Assessor Endorsement Application Form* shall be used for this purpose.

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## 14. Electricity Supply assessor and moderation requirements (Nga whakaritenga a te kaiaromatawai me te aromātairua mo te Tuku Hiko)

The capstone units are designated as high risk due to the linkage between the competency requirements of the qualification and EWRB registration. It is important that there is a robust process for designating who can assess these unit standards and the ongoing monitoring to ensure consistency of assessment across the industry.

Assessors must meet the following requirements:

- Must have been an assessor for 3 years and been regularly assessing at Level 4 or above.
- Must hold the qualification associated with the capstone units being assessed, or an equivalent qualification.
- Must engage in moderation, at least twice yearly, for capstone unit standards assessed.
- Be endorsed as an assessor by the Electricity Supply and Electrical Capstone Advisory Group.

For Traction Line assessors they must:

- Hold the Traction Line Mechanic registration class, and
- Be approved by KiwiRail as an assessor.

The Capstone Advisory Group may approve an assessor based on different criteria from time to time, this is at the discretion of the group and Waihanga Ara Rau. For these assessors they must also:

- Engage in peer moderation with an experienced assessor until they can demonstrate a consistent approach to assessment of capstone units.
  - Results for units assessed under peer review must not be submitted to NZQA until the peer review process has been completed.

All approved capstone assessors will be involved in an annual peer review and moderation meeting.

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## 15. Experienced pathway for Registration (Te ara wheako ki te rehitā)

There is an alternative pathway to EWRB registration for those ākonga who have been working in the industry for several years without gaining a formal qualification, or immigrants who hold a relevant overseas qualification and need to be registered to undertake prescribed electrical work.

The requirements for registration using the experienced pathway are outlined in the Electricity (Prescribed Classes of Registration for Electrical Workers) Notice 2019. (<https://gazette.govt.nz/notice/id/2019-go1760>)

The capstone unit standards can be used for assessment towards the EWRB experienced pathway requirements as a one-off assessment without the requirement for ākonga to be enrolled into a formal qualification pathway. Award of the capstone unit standards in this instance do not in themselves satisfy the educational requirements to be awarded a New Zealand Certificate qualification.

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## 16. Capstone units for an Electrician (Ngā waiene mātau mo te Kaihanga Hiko)

To become an electrician, people must meet the Essential Capabilities for Electrical Registration required by the Electrical Workers Registration Board (EWRB). The EWRB requires an electrical theory examination and a legislation examination, which must be passed to achieve registration, along with other requirements.

To enable confidence across the sector, it is important that graduates of qualifications can be licenced. Therefore, all programmes for electrician licencing must include the EWRB examinations, achieved by requiring mandatory unit standards that can only be awarded by passing the examination.

The electrician qualifications covered by this process include:

- New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [REF: 2388]
- New Zealand Certificate in Electrical Trade (Level 4) [Ref: 4204] with strands in General Electrical and Electricity Supply
- New Zealand Certificate in Electrical Engineering Theory (Level 3) [Ref: 2387]
- New Zealand Certificate in Electrical Pre-Trade (Level 3) [Ref:4316]

	Current	New
Level 3	<p><b>New Zealand Certificate in Electrical Engineering Theory (Level 3) [Ref: 2387]</b></p> <p>All providers must include US29484 (Demonstrate intermediate knowledge for working in electrical trades) in their programmes of study as requested by the industry.</p>	<p><b>New Zealand Certificate in Electrical Pre-Trade (Level 3) [Ref:4316]</b></p> <p>All providers must include US32619 (Demonstrate fundamental knowledge for working in electrical trades) in their programmes of study as a final closed-book assessment.</p>

	Current	New
	<p>It is assessed under the providers consent to assess by their tutors. A common assessment pre-moderated by Waihangara Rau must be used.</p>	<p>It is assessed under the providers consent to assess by their tutors. A common assessment pre-moderated by Waihangara Rau must be used.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Waihangara Rau will be working with providers to better understand the use of this unit standard and the setting of the assessment.</li> <li>• Currently the unit standard details that the SSB (Waihangara Rau) must set and moderate the assessment. Developing and setting assessments is not a function of Waihangara Rau.</li> <li>• Prior achievement of US29484 will exempt ākongā from needing to achieve US32619.</li> </ul>
<p><b>Level 4</b></p>	<p><b>New Zealand Certificate in Electrical Engineering Theory and Practice (Level 4) [Ref: 2388]</b></p> <p>US29484 is completed at the end of the Year 2 apprenticeship programme by providers under the same conditions as the Level 3 programme above.</p> <p>US1702 (Demonstrate knowledge of electrical legislation, New Zealand Codes of Practice, and Standards) and US21766 (Demonstrate knowledge of theory for registration of electricians.) are the two designated capstone unit standards for this qualification. They can only be awarded by ākongā providing evidence that they have received a passing grade in the equivalent EWRB Theory and Regulations examinations.</p> <p>The moderation process for these standards is on whether ākongā have passed the exam, rather than on the exam content, which is driven by the EWRB or its contracted provider.</p>	<p><b>New Zealand Certificate in Electrical Trade (Level 4) [Ref: 4204] with strands in General Electrical and Electricity Supply</b></p> <p>US32619 is completed at the end of the Year 1 apprenticeship programme by providers under the same conditions as the Level 3 programme above.</p> <p>US29484 is completed at the end of the Year 2 apprenticeship programme by providers under the same conditions as the Level 3 programme above.</p> <p>US1702 (Demonstrate knowledge of electrical legislation, New Zealand Codes of Practice, and Standards) and US21766 (Demonstrate knowledge of theory for registration of electricians.) are the two designated capstone unit standards for this qualification.</p> <p>The unit standards can only be awarded by ākongā providing evidence that they have received a passing grade in the equivalent EWRB Theory and Regulations examinations.</p>

	Current	New
		The moderation process for these standards is on whether ākongā have passed the exam, rather than on the exam content, which is driven by the EWRB or its contracted provider.

There are no specific assessor requirements for the electrical capstone unit standards.