

Title	Analyse building and plant energy efficiency		
Level	4	Credits	3

Purpose	<p>This unit standard is intended for people wishing to become electricians in the domestic or commercial area of the industry and covers building energy audits.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – establish a process appropriate to the type of installation to be analysed for one of domestic building, commercial building, or rural building; and – analyse energy consumption data and produce report on possible savings based on the information collected.
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Classification	Electrical Engineering > Electrotechnology
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 Definition
Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.
- 3 Range
 - a Data collection methods may include but are not limited to – surveys, automated data collection, physical measurements.
 - b Candidates may refer to current legislation and Standards during assessment.
 - c Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
 - d All activities and evidence presented for all outcomes and performance criteria in this unit standard must be carried out under supervision and must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Establish a process appropriate to the type of installation to be analysed for one of domestic building, commercial building, or rural building.

Performance criteria

- 1.1 Obtain customer's energy accounts for a minimum of three months.
- 1.2 Create a spread sheet from the customer's energy accounts listing each type of charge including power factor charges and lines charges.
- 1.3 Extend the spread sheet to extract the individual costs for analysis for comparison between other energy retailers and any related losses or over charge for lines.

Outcome 2

Analyse energy consumption data and produce report on possible savings based on the information collected.

Performance criteria

- 2.1 Measure main supply or subcircuit electricity using either a clamp ammeter or portable power analyser. If assessing maximum demand using an ammeter, discuss with customer when there will be expected peak load.

Range main incomer;
 may include but is not limited to three of – lighting, power, hot water cylinders, stove.
- 2.2 Create or extend a spread sheet to demonstrate loading throughout different subcircuits on the installation indicating the actual power used.
- 2.3 Explore different options and areas for energy efficiency.

Range may include but is not limited to – appliance energy star ratings, power factor correction, energy efficient lighting, hot water cylinder condition, heat pumps, retail electricity price.
Evidence of three is required.
- 2.4 From calculations establish comparisons for energy efficient products to be recommended.
- 2.5 Complete full energy analysis and savings report for the customer including a cost benefit analysis.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	31 December 2025
Revision	2	16 March 2017	31 December 2025
Review	3	24 March 2022	31 December 2025

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.