Electricity Engineers' Association

PROFESSIONAL DEVELOPMENT

Welcome to the EEA Trainer's Forum

EEA.CO.NZ

Mihi - Welcome

E te hui	For this gathering
Whāia te mātauranga kia mārama	Seek knowledge for understanding
Kia whai take ngā mahi katoa	Have purpose in all that you do
Tū maia, tū kaha	Stand tall, be strong
Aroha atu, aroha mai	Let us show respect
Tātou i a tātou katoa	For each other

Sideline – A Bit of VET (Vocational Educational & Training) History

Industry Training Act 1992 established Industry Training Organisations (ITOs).

Competency based, employer led industry training and apprenticeships. ITOs assess industry skill demand, develop national occupational standards and qualifications for their industry sectors, quality assure the skill standards, broker training for employers and manage apprenticeship programmes. NZQA regulates qualifications. ETSA (now TEC) became a funding body for the ITOs.

ESITO formally recognised as ITO 1997.

Can set standards at Levels 1 to 8 on National Qualifications Framework for management of power systems and assets, design, construction, operation and maintenance of production, transmission and utilisation of electrical energy industry.

Review of Industry Training in 2001

ITO amalgamation, ITOs to have collective industry representation in governance, ITOs to develop strategic training plans to meet current & future skill needs, funding available for above Level 4.

TEC efficiency & effectiveness reviews 2010 - 2013.

Focussed on fiscal value. Performance incentives on Modern Apprenticeships.

ESITO merged with Civil Construction ITO to form Connexis (in Government rationalisation) 2013

Education (Vocational Education and Training Reform) Amendment Act 2020

Created unified NZ Institute of Skills and Technology (Te Pūkenga), Workforce Development Councils (Waihanga Ara Rau for ESI) setting qualifications and assessment standards. Connexis becomes part of Te Pūkenga.

2023 – Te Pūkenga having financial difficulties

2024 – Te Pūkenga disestablishment part of government's plans.

WHO WE ARE

Less than 10% of all technical roles are held by females

50% of organisations record ethnic diversity

Engineering roles makeup 21% of technical roles

Trade roles makeup **48%** of our technical roles

Distribution sector has 27% of the engineering roles

Trainees make up on average 10% of our technical workforce

Distribution sector has 26% of the engineering trainees

Consulting sector has 49% of the engineering trainees

21% of the total technical workforce is over 55 years old

31% of technicians and project managers are over 55 years old

QUALIFICATIONS AND RECRUITING

34% of engineering graduates in 2019 came from Canterbury University followed by overseas at 18%, University of Auckland at 16% and AUT at 13%

90% of participants believe graduates are prepared for the future

80% of people in engineering roles have a bachelor's degree or higher education

66% of people in trade roles have a hold a level 4 certificate

14% of participants say project management qualifications are very important and 13% for Operations/ controllers

81% of participants are finding it difficult to recruit technicians, 78% for **recruiting engineers**

COMPETENCE

60% of participating organisations have a competency framework implemented for operations staff

60% of participating organisations don't have a competency framework in place for engineering staff, that equates to nearly 600 engineers

BEHAVIOURAL COMPETENCY

Top 50% of behaviours that organisations rate as very important are;

1. Technical aptitude
2. Communication
3. Critical thinking and problem solving
4. Relationship management
5. Customer service
6. Stress management

FUTURE ROLES

Strong focus and view on next 2 years and BAU activities

Strong requirement of skilled people in the next 2 years in;

- **Line mechanics**
- Protection engineers
- **Communication technicians**
- **Protection technicians**
- **Data scientist**

Strong requirement of skilled people 2 - 5 years' time;

- **Line mechanics**
- Asset managers
- Electrical engineers
- Project management
- Cable jointers
- Contract managers

Strong requirement of skilled people 5 years or more;

- **Line mechanics**
- **Live line personnel**
- **Mechanical engineers**
- Software and program development
- Artificial intelligence

Note: these are based on a very small sample size

OUR CURRENT DEVELOPMENT APPROACH

Engineers approach to development is more likely to be self-learning and formal course.

Project managers approach to development is more likely to be self-learning and informal understudy

Trades employees' approach to development is more likely to be on internal onsite course

Technicians approach to development is more likely to be formal courses

Formal coaching and mentoring is used less than 20% across all role types

70% of participants don't set training hours targets

Of organisations that set training hours targets the average is 24hrs per person, per year, around 1.2% of available work hours

TRAINING AREAS

Top 5 training areas for all roles are;

Health and Safety
Safety in design
Project management
Introduction to electrical networks
Asset management
Risk Management

SPECIALIST TRAINING AREAS (by sector[1])	Distribution	Consultant	Contractor
Substation and switch-yard design	y	y	y
Cable selection and specifications	y	y	y
Communication systems	y	y	y
Overhead line design	y	y	-
Strategic management	y	y	-
Electrical protection systems	y	-	-
Distribution generation	y	-	-
Electrical network planning and design	y	y	-
Maintenance in electrical equipment	-	y	-
Renewal and maintenance optimisation	-	y	-
Transformer specification and selection	-	y	-
Project management	-	y	-
Design	-	y	-

Note 1: Insufficient data from Generation sector to provide a sector view

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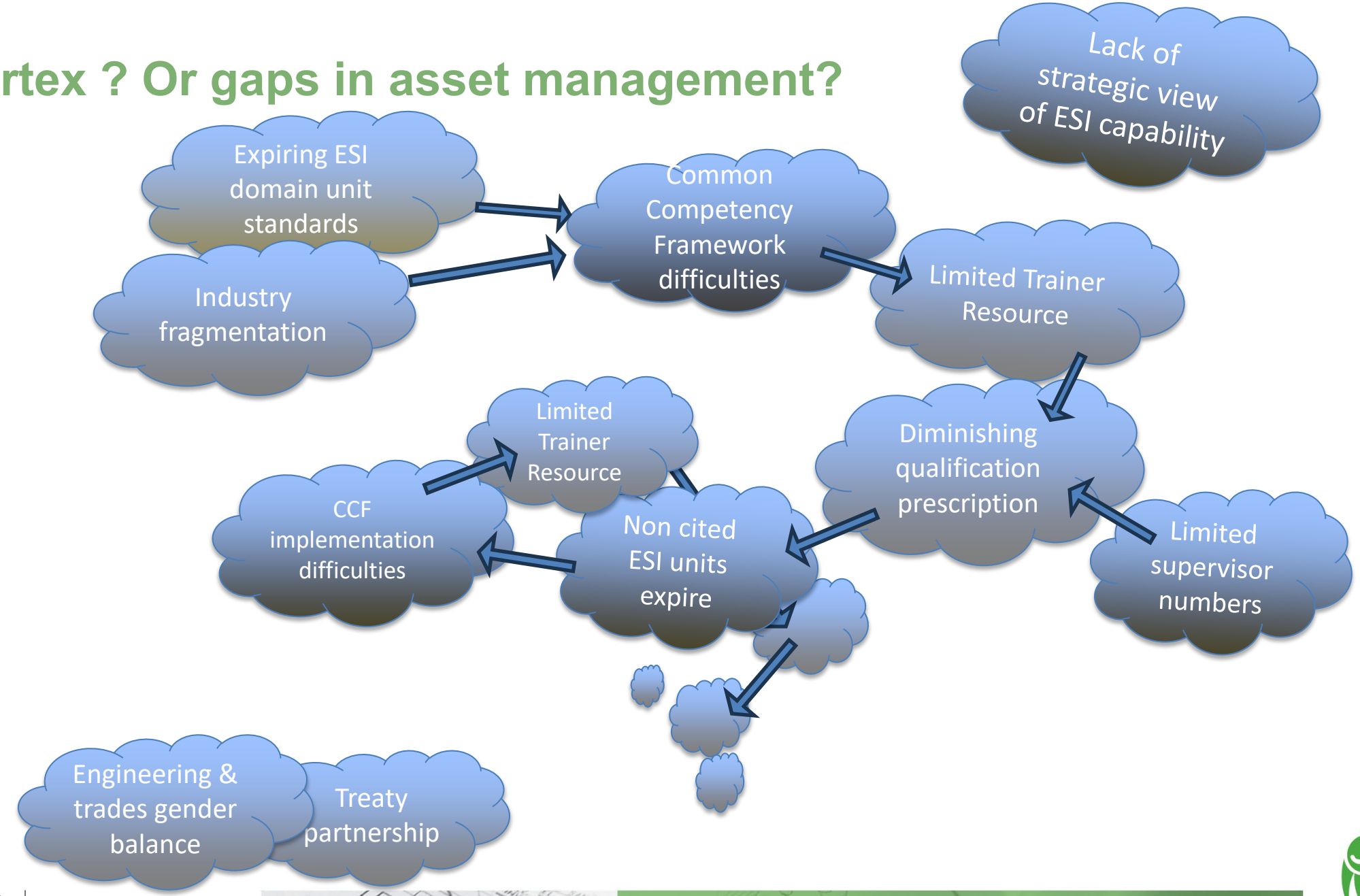
Waihanga Ara Rau Re-energise Report

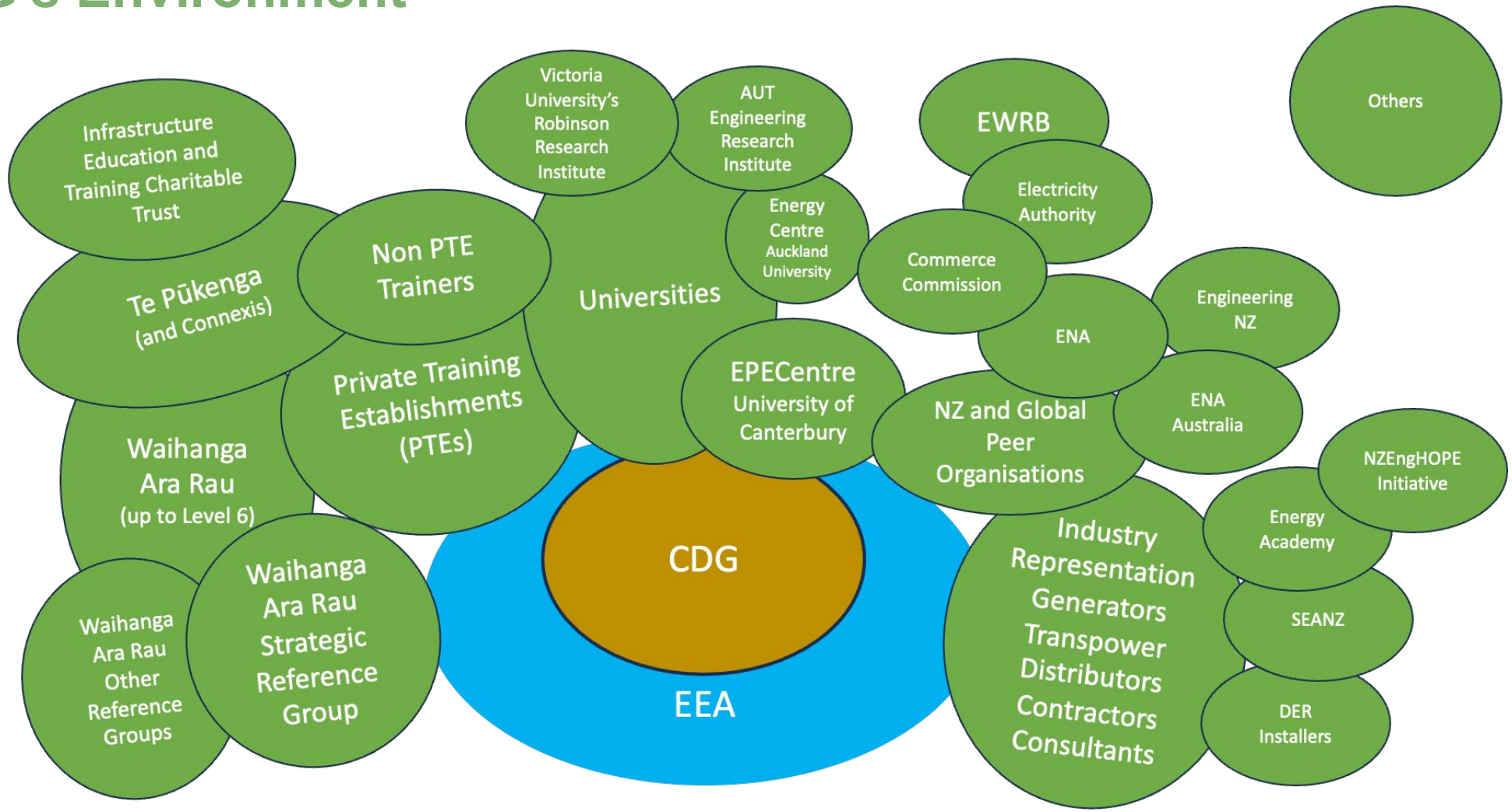
Part of Workforce Development Strategy formation, completed in 2022 with five insights, focussed on line mechanics, substation maintainers, cable jointers and power technicians:

1. **Alignment (kia kotahi te hoe)** – the industry as a whole lacks a complete picture of its workforce skills and demographics, and on how to project and plan for the future. Lack of aligned vision on sustainability and inclusivity is making it harder to build a unified plan of action.
2. **Attraction (piri ki a Papatūānuku)** – the concept of electricity supply and the value of sector careers are largely invisible to those on the outside, particularly for young people.
3. **Pathways (Māui te Tipua)** – potential and current employees want to be able to visualise and plan for their futures, yet avenues within the industry are either broken, hidden or challenging to access. People without family and other personal connections have difficulty negotiating pathways.
4. **Training (kia Māui te tū)** – traditional models of engagement around competency building may be inadvertently switching off gen-z digital natives, who are accustomed to flexible learning methods, faster results and recognition. Employees are seeking greater flexibility within their career pathways, but the shared competencies and modes of training that allow transferability are lacking.
5. **Māori participation and leadership (ka hao, ka hao, e ara e)** – a key opportunity for ESI workforce development is the growing pool of young Māori talent. To build a more equitable future, companies need to cast aside business as usual and adopt new practices that are effective in recruiting, welcoming, retaining and scaffolding Māori.

A vortex ? Or gaps in asset management?



CDG's Environment



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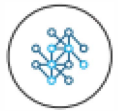
Our Purpose

To be a leader for Aotearoa New Zealand's energy industry, providing expert electricity system engineering, technical, and safety advice that is pan industry, innovative, inclusive, and trusted.

Strategic Priorities

NAVIGATORS

Provide expert advice and advocacy on greater standardisation, asset management, innovation, workforce, and health and safety risks.



CONNECTORS

To connect the industry across Aotearoa New Zealand to solve issues, share knowledge, and facilitate standardisation and greater clarification.

CAPABILITY BUILDERS

Build a diverse and inclusive workforce that has the technical talent and capability, to meet industry's existing and future needs.

Organisation Qualities

Independent consensus builders

Trusted and connected

Evidence based and quality driven

Respected