ENERGY INDUSTRY APPRENTICESHIP PROGRESSION MANAGEMENT SYSTEM

FINAL REPORT
INCLUDING SUSTAINABILITY STRATEGIES
MARCH 2016

ENERGY SKILLS
AUSTRALIA

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The Energy Industry Apprentice Progression Management System project was funded by the Australian Government.
The views expressed in this document are those of the author/project team and do not necessarily reflect the views of the Government.

CONTENTS

EXECUTIVE SUMMARY

CONTEXT

Competency based training was introduced to the Australian VET system in 1992, as a means of;

- Improving the relevance of training to the workplace
- Improving the consistency of training outcomes around the country.

Competence describes the ability to consistently apply knowledge, skills and the correct attitude to the standard required in the workplace. It also includes the ability to transfer and apply those skills and knowledge to new situations and environments.

Competency based training differs from traditional training in that it focuses specifically on outcomes. It allows industry to communicate to a training organisation the skills and knowledge workers require and allows the training organisation to determine the best method to train a student to that standard. Once an individual has demonstrated that they have the skills and knowledge identified in the standard, they are declared competent.

In July 2010, the Australian Government commissioned an Expert Panel on Australian Apprenticeships to provide advice on reform options for the Australian Apprenticeship system. The Expert Panel's report *A shared responsibility - Apprenticeships for the 21st Century* was released in February 2011. The Australian Government subsequently sought submissions on the report.

After considering the submissions received, the Government responded to the Expert Panel's report and recommendations by instituting the following Programmes as part of the Australian Government *Skills Connect* initiative:

- Australian Apprenticeships Mentoring Programme
- Australian Apprenticeships Advisers Programme
- Accelerated Australian Apprenticeships Programme

This response was supported by the principles for harmonisation agreed at a Commonwealth and State and Territory ministers meeting on 25 November 2011.

Parallel with these developments, the Department of Industry, Innovation, Science, Research and Tertiary Education (now the Department of Education and Training) opened discussions with the Australian Electrotechnology industry with a view to engaging the electrical trades in developing and trialing a competency based progression model for the Electrician apprenticeship.

Through research, modelling and consultations, the specifications for the project to pilot the model were developed and Funding Applications for the Energy Industry Apprentice Progression Management System (EIAPMS) project submitted by the Industry Skills Council, E-Oz Energy Skills Australia, on behalf of the industry. The Applications were supported by all three industry peak bodies; the National Electrical and Communications Association (NECA), Master Electricians Australia (MEA) and the Electrical Trades Union (ETU).

On the 15th of June, 2012 E-Oz entered into a Funding Agreement with the Commonwealth.

In accordance with the Obligations detailed in Schedules 1, 2 and 3 of the Funding Agreement, a comprehensive suite of systems and structures were subsequently developed and implemented, namely;

- A fully automated apprentice 'Readiness Assessment' and associated support materials
- Industry advisory services for employers, schools and individuals
- An Apprentice progression quality assurance model incorporating national benchmarks
- Professional Development for RTO staff, employers and mentors
- An national Apprentice Mentoring system
- A suite of high quality Blended Learning training and assessment resources supporting the National Training Package Certificate III Electrician qualification
- A sophisticated, fully integrated, data management system

CRITICAL STATISTICS

Key outcome

The EIAPMS Pilot achieved an apprentice retention rate of: 93%.

Note: For the five years to commencement of the pilot, NCVER statistics indicate that individual completion rates for the Certificate III Electrician trade qualification remained consistent at around 62%.

Pilot characteristics

In order to ensure Apprentices could be provided with no less than 12 months mentoring, the Pilot was closed to further intakes on the 30th of June, 2014. In July 2014, 1549 Apprentices and 943 employers had been engaged in the Pilot across all States and Territories. 815 (86%) of employers involved in the pilot were small businesses, 43 (5%) were medium sized businesses and 85 (9%) were large businesses.

There was a total of 27 Group Training Organisations involved in the pilot, employing 29% of the pilot Apprentices.

As at May 2015, 417 of the enrolled apprentices were mature age (ie; 25 yrs and above), and 45 were female. 443 of the EIAPMS apprentices were in regional localities and 43 in remote localities.

In terms of training delivery, 65% of Apprentices were enrolled in a public RTO and 35% in a Private RTO. There were no Enterprise RTOs involved in the pilot.

Promotion of Electrotechnology Careers

Extensive promotion of Australian Apprenticeships in Electrotechnology across all industries, primarily construction, manufacturing, electricity, gas, waste water and mining was undertaken over the course of the Pilot Programme. In total, 94,562 people participated in the promotional activities provided.

The Readiness Assessment

A requirement of entry into the EIAPMS Pilot was the successful completion of the Apprentice Readiness Assessment (RA). The RA was a web-based aptitude assessment accessible through the EIAPMS Learning Management System.

In addition to the RA, the EIAPMS LMS system contained two versions of a Practice Readiness Assessment, namely; a combined version (including Literacy and Numeracy activities) and a composite version through which candidates could choose to practice either Literacy *or* Numeracy activities. These practice assessments are also supported by on-line literacy and numeracy tutorials.

As at May 2015, 5376 potential apprentices had completed the combined practice assessment, 7584 potential apprentices had completed the Numeracy component of the composite version and 3323 potential apprentices had completed the Literacy component of the composite version.

Although the pilot was closed to further intakes on 30 June 2014, E-Oz continued to offer the RA service. As at May 2015, 18,311 potential apprentices had registered to undertake the RA. 9,841 had completed the RA and 6,316 had achieved a score of 64% or higher upon completion of the RA.

The National Apprentice Register

The National Apprentice Register (NAR) was launched in October 2013. The purpose of the NAR was to maintain a record of pre-assessed candidates seeking an electrical apprenticeship. The NAR was particularly useful in the brokerage of training positions in that once a candidate had successfully completed their RA and subject to their approval (in accordance with privacy legislation), E-Oz could forward their information to participating employers.

In summary, 929 employers and 1,779 potential apprentices signed up to the NAR. A 'point-in-time' analysis conducted in October 2014, identified that of the 153 employers who employed an apprentice registered on the NAR, 145 (95%) had themselves registered on the NAR. At the same point in time, 191 potential apprentices had found an apprenticeship through the NAR.

Mentor-Advisor Support Services

34 Mentor-Advisors and 5 Mentor-Advisor Supervisors were engaged over the course of the Pilot. 5 Mentor-Advisors resigned and 29 remained in full time employment, with the exception of the 3 Tasmanian Mentor-Advisors, who job-shared 2 full-time positions. 24 of the Mentor-Advisors were employed in accordance with the sub-contract between E-Oz and NECA National, the remainder were employed directly by E-Oz.

As at May 2015, 15,743 Mentoring visits and 1, 653 Advisor activities had been undertaken by the cohort of Mentor-Advisors. In summary, the ratio of time spent between the two roles was: 82% Mentoring: 18% Advising.

Blended Learning Training and Assessment Resources

The Certificate III Electrician qualification incorporates 20 Core Units of Competency plus Elective Units chosen by the employer to address specific business needs. Over 1800 blended learning based training delivery and assessment resources had been developed to support the 20 Core Units and 25 of the qualification's most commonly utilised Elective Units. Additionally, these training delivery and assessment resources were supplemented by trainer support resources and tutorials.

During the course of the Pilot, all resources were made accessible to RTOs and Apprentices involved in the Pilot via the Moodle-based Energise-Oz LMS platform.

Competency Based Progression Industry Benchmarks

The EIAPMS Benchmark Panel was established at the commencement of the Project and the EIAPMS Benchmark Panel Protocol, detailing the Panel's terms of reference, endorsed in November 2012. The Industry Benchmark Panel met on 16 occasions between 30 August 2012 and 7 July 2015 to oversee the development of the Benchmark specifications and formal assessments for each Phase of the Apprenticeship (4 in total).

The Benchmark Panel provided its Final Report to the Project Steering Committee in August 2015. The Report identified that whilst four benchmark assessments had been successfully developed, due to the project having only been 2 years in duration, the sample sizes of the cohorts who had tested the assessments were too small to provide a statistically significant outcome. In this light, the Committee recommended that further testing was necessary.

FUTURE ARRANGEMENTS

The outcomes of two external Programme evaluations, combined with the E-Oz experience and the views of the three Industry peaks, indicate that a future Competency Based Progression (CBP) model should incorporate the following key components, albeit with ongoing enhancement to meet changing industry needs:

1. A National Apprentice Register
2. A pre-entry aptitude assessment (ie; 'readiness assessment')
3. Apprentice Mentoring
4. Apprentice profiling
5. Blended Learning-based delivery and assessment
6. Industry Benchmarks (one or more)

Additionally, consideration must be given to the environment in which the model will operate. To this end, the following sections have been developed based on the following assumptions:

A. The federal Government will not continue to financially support implementation of the CBP Model components in their entirety, or at all.

B. The State/Territory Governments will not financially support implementation of the CBP Model components in their entirety, or at all.

C. Variances in Industry and VET operating environments and government funding arrangements will continue to exist and change between jurisdictions.

Should the above conditions and assumptions be accepted, a sustainable CBP Model must also have the following characteristics:

1. Allowances for segmentation to accommodate variances in demand and funding arrangements within and between jurisdictions.
2. Mechanisms to ensure the availability of sufficient financial, temporal, material and human resources to support ongoing maintenance and service provision.
3. Industry, Government, Regulator and VET sector support.

In this light, a suite of strategies have been developed for ensuring Model sustainability post pilot.

BACKGROUND

PILOT HISTORY & OBJECTIVES

As a result of the COAG Apprenticeship Taskforce commitment to:

Undertake an immediate review to re-prioritise apprenticeship and traineeship incentives to better target quality outcomes and commencement and retention of trade apprentices, including consideration of strengthened financial support for trade apprentices in areas of skill shortage.

In July 2010, the Australian Government commissioned an Expert Panel on Australian Apprenticeships to provide advice on reform options for the Australian Apprenticeships system. The Expert Panel's report *A shared responsibility - Apprenticeships for the 21st Century* was released in February 2011 and the Australian Government sought submissions on the report.

The initial engagement of E-Oz Energy Skills Australia (then EE-Oz Training Standards) with the reform of apprenticeships began with the development of a submission in response to the Expert Panel's report which included recommendations to:

- Focus on the retention and completion of apprentices and trainees
- Assist employers to provide high quality on and off-the-job training through support services such as mentoring and pastoral care
- Promote a culture of competency based progression in apprenticeships and traineeships, in partnership with industry bodies and employers.

At its meeting on 2 September 2011, the Ministerial Council for Tertiary Education and Employment (MCTEE) confirmed key objectives for apprenticeship reform, stating in the communique:

Ministers discussed directions for apprenticeship reform in Australia and noted apprenticeship reform was a key work priority going forward. Ministers agreed that apprenticeship reform should focus on a competency based system that promoted advancement by competence with training more responsive to industry needs now and in the future and which might offer alternative pathways for training outcomes. Ministers also noted that apprenticeship reform should include focus and improvement in the effectiveness of support services and improvements in completion rates.

Source: http://www.deewr.gov.au/Ministers/Evans/Media/Releases/Pages/Article_110905_100628.aspx

After considering submissions received , the Australian Government responded to the Expert Panel's report and recommendations by instituting the following Programmes under the *SkillsConnect* initiative:

- Australian Apprenticeships Mentoring Programme
- Australian Apprenticeships Advisers program
- Accelerated Australian Apprenticeships Programme

This response was supported by the principles for harmonisation agreed at a Commonwealth and state and territory ministers meeting on 25 November 2011.

Parallel with these developments, the Department of Industry, Innovation, Science, Research and Tertiary Education (now the Department of Education and Training) opened discussions with the Australian Electrotechnology industry with a view to engaging the electrical trades in developing and trialing a competency based progression model for the Electrician apprenticeship.

It was recognised early in these discussions that, in addition to achieving the targets within the project parameters, a trial of this nature would require a 'culture shift' within the sector to open the way for competency based progression to replace the traditional time-based approach. Whilst defined and measureable objectives would be required as deliverables of the project, this 'culture shift' was and continues to be seen as the overarching goal and the enduring legacy of the project.

Importantly for the pilot, industry and government both recognised that such an endeavour would not only need to involve the conduct of

a trial but also the establishment of a sustainable support framework for competency based progression in the electrical trades. This included the establishment of a blended learning resources base which could facilitate individual apprentice progression and the development of an integrated management system to coordinate the educational, mentoring and other support activities.

In the period August 2011 to February 2012, E-Oz undertook intensive research and modelling activities to determine the scope, key parameters and objectives of a pilot program.

During this period extensive consultations were held with stakeholder groups including:

- Industry peak bodies
- State and Territory governments
- Registered Training Organisations
- Group Training Organisations

Through this research, modelling and consultation, the specifications for the project were developed, including the identification of essential project features to be developed and trialed, namely:

- A pre-commencement apprentice Readiness Assessment
- Industry advisory services for employers, schools and individuals
- Progression quality assurance via national benchmarks
- Professional Development for RTO staff, employers and mentors
- Apprentice Mentoring
- High quality Blended Learning resources
- An integrated data management

In February 2012, E-Oz Energy Skills Australia submitted applications under the Accelerated Australian Apprenticeship Initiative, the Australian Apprentice Mentoring Program and the Australian Apprenticeships Advisers Programs to the then Department of Industry, Innovation, Science, Research and Tertiary Education to develop and implement a national, industry led, competency based progression Program for the Australian Energy Industry.

Whilst Departmental processes required individual applications under each of the three Government Programmes, E-Oz also developed an overarching document in order to identify the proposals as components of the one systematic approach to achieving a cultural shift in industry towards competency based progression. The project was identified as the Energy Industry Apprentice Progression Management System (EIAPMS).

The project submission was supported by the three peak Industry bodies; the National Electrical and Communication Association (NECA), Master Electricians Australia (MEA) and the Electrical Trades Union (ETU).

Consistent with the Expert Panel's recommendations, the Ministerial Council's reform agenda and the aims of the *SkillsConnect* initiative, the Project's objectives were to:

- Improve apprentice completion and retention rates
- Facilitate competency based progression
- Assure the quality of on and off-the-job training delivery across a multitude of Electrical industry employers and Registered Training Organisations (RTOs) in the Australian Vocational Education and Training system.

CONTRACTED DELIVERABLES

On the 15th of June, 2012 E-Oz entered into a Funding Agreement with the Commonwealth for the Energy Industry Apprenticeship Progression Management System Pilot.

The Agreement incorporated three Schedules, each detailing necessary deliverables under the relevant *SkillsConnect* Program.

In summary, under the *Accelerated Australian Apprenticeships* Initiative, E-Oz was contracted to:

- *Develop appropriate technology based systems to provide platforms for the full range of integrated services to facilitate competency based progression and completion arrangements including: professional development, blended learning resources, repository systems designed to interface with industry preferred learning management platforms, industry agreed progression benchmarks, advisory and self-assessment tools, pathways identification services, helpdesk, management and communications.*

Under the *Australian Apprentice Mentoring Programme*, funding was provided to:

- *Support targeted mentoring to help Australian Apprentices successfully progress through their Australian Apprenticeships. Mentoring may also involve support to their employers or supervisors to encourage a positive employment relationship and better support for Australian Apprentices. The Mentoring Program is targeted to Australian Apprentices who may face barriers to participation. The Mentoring Program may focus on support for the first year of training when Australian Apprentices are most at risk of withdrawing from their Australian Apprenticeships.*

More specifically, E-Oz was engaged to:

- Implement a comprehensive, coordinated approach to support Australian Apprentices in the Electrotechnology Electrician Apprenticeship Program.
- Deliver the Program in multiple jurisdictions to all nominated priority groups
- Involve employers of all sizes, including Group Training Companies.
- Employ full time equivalent Mentor-Advisors to fulfill the mentoring and advisor roles on a notional 80% mentoring, 20% advising time split arrangement.
- Provide necessary professional development and IT support to the Mentor/Advisers, including formal training.

Under the *Australian Apprenticeships Advisers Programme*, funding was provided to:

- *Support Australian Apprenticeships Advisers to provide occupation or industry specific information to potential Australian Apprenticeship candidates to help them make an informed decision in choosing the right Australian Apprenticeship pathway. The Advisers Program primarily targets school leavers. Projects under the Advisors Program could also provide information and resources to potential and existing employers of Australian Apprentices to support effective recruitment in that occupation or industry.*


enter
return
learning

METHODOLOGY

The six components of the EIAPMS Project were the:

1. National Readiness Assessment
2. National Apprentice Register
3. Blended Learning-based training delivery and assessment resources
4. Mentor/Advisor service provision
5. Apprentice profling
6. Industry Benchmarks for apprentice progression

THE NATIONAL READINESS ASSESSMENT

The Government's Expert Panel report into reform of the Australian Apprenticeship System, *A Shared Responsibility – Apprenticeships for the 21st Century*, found that;

Literature points to high quality recruitment as being the most crucial factor in ensuring the completion of an Australian Apprenticeship. There needs to be a focus on starting apprentices and trainees with a view to success rather than setting them up to fail. This can include education about what the apprenticeship or traineeship entails, aptitude testing, assessing their commitment to the training, encouraging involvement in pre-vocational and pre-apprenticeship programs, providing a good 'match' between the apprentice or trainee and employer and ensuring appropriate induction.

While completion rates in the Certificate III Electrician qualification are amongst the highest in the VET sector[1], the industry itself believes that losing more than one in three individuals who commence an Apprenticeship represents an unacceptable cost and significant barrier to addressing what have become entrenched skills shortages.

Consequently, E-Oz conducted extensive consultation with those industry groups who could demonstrate long term, above average, Apprentice retention rates, namely; large employers, public utilities and some Group Training Organisations. The results of these consultations supported the Expert Panel's assessment of the importance of solid recruitment practices. The E-Oz Board subsequently concluded that the Pilot required the inclusion of a Readiness Assessment (RA) to determine the fit of the candidate to the requirements of the intended training program. This was in keeping with the fundamental commitment of the pilot program to starting apprentices with a view to success rather than setting them up for failure.

The RA is an integral component in assessing the fit between the apprenticeship candidate and the training program. It assesses an individual's capabilities against identified literacy and numeracy requirements for successfully progressing through the qualification. It is designed to communicate appropriate indicators of readiness to prospective apprentices, assess the prospective apprentice's readiness and provide guidance on suitable support pathways based on the prospective apprentice's skills profile.

1 NCVER statistics indicate that individual completion rates have remained fairly consistently at around 62% over the past five years for which statistics are available and contract completion rates about 50%

Use of LL&N Standards within energy sector Training Packages

Units of Competency within the current E-Oz suite of Training Packages include recommended levels of Language, Literacy and Numeracy (LLN), reflective of the skills required for the particular task(s) the unit represents.

Students performing at these levels have been recognised as 'best equipped to achieve competency', with less than one third as many non-completions as the general student cohort.

Alignment of units within the electrical apprenticeship with the ACSF

Through the '*Inclusion of the Australian Core Skills Framework (ACSF) into National Training'* project, funded by the Department of Industry, E-Oz commissioned the mapping of ACSF indicators to core units within the UEE30811 Electrotechnology Electrician qualification by independent LL&N consultants and industry technical experts. This analysis informed the development of the Readiness Assessment.

THE NATIONAL APPRENTICESHIP REGISTER

The National Apprentice Register (NAR) maintains a record of pre-assessed candidates seeking an electrical apprenticeship.

The NAR was particularly useful in the brokerage of training positions. Once a candidate has successfully completed their Readiness Assessment and subject to their approval (in accordance with privacy legislation), E-Oz Energy Skills Australia could forward this information to participating employers.

The NAR, thereby allowed employers to identify eligible apprenticeship candidates within a geographical region. It also allowed the candidates themselves, to find a suitable employment opportunity.

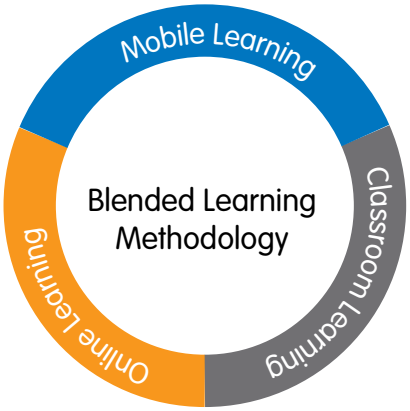
The NAR allowed candidates and employers to nominate how they would like their information used. By means of example, candidates could nominate:

- Geographical location
- Type of work
- Whether to include RPL or work experience information

As with all apprenticeship training, however, the final employment decision remains between the apprentice and the employer.

BLENDED LEARNING-BASED TRAINING AND ASSESSMENT

Blended learning combines traditional face-to-face classroom methods with computer-mediated activities. This creates a more integrated approach for both teachers/trainers and learners.



The Pilot's blended learning training and assessment system incorporated materials of two types, namely;

- ***Products*** – documents that supported the delivery and assessment of a unit of competency, an example being; Learning and Assessment Plans (LAPs).
- ***Resources*** – documents that supported the delivery and assessment of topics based on the knowledge and skills specifications within a unit of competency. Examples being; Topic Learner Activities (TLAs), Topic Review Questions (TRQs).

MENTOR-ADVISOR SUPPORT SERVICES

The objectives of the Mentor-Advisor role were to:

- Provide occupation or industry specific information to potential Australian Apprenticeship candidates to help them make an informed decision regarding an Australian Apprenticeship pathway in the Energy Sector trades.
- Provide information and resources to potential and existing employers of Australian Apprentices to support effective recruitment to the industry.
- Provide targeted mentoring to help Australian Apprentices successfully progress through their Apprenticeship, including; providing support to the apprentice employers and/ or supervisors to encourage a positive employment relationship and better support for the Apprentices.

To achieve this under the Pilot, the Mentor-Advisor role was structured to include:

- Supporting prospective apprentices and apprentice employers to engage in an apprenticeship under the Energy Industry Apprenticeship Progression Management System
- Supporting the implementation of training resources, work performance profiling and assessment management systems to facilitate competency based progression against National Training Package Standards

- Supporting apprenticeship candidates to use, interpret and act on the outcomes of identified apprenticeship readiness assessment resources
- Providing first line management of issues arising from the implementation of the competency based progression model and the supporting systems
- Liaising with registered training organisations
- Liaising with Language, literacy and numeracy service providers as appropriate.

Under the Pilot, all Mentor-Advisors were tasked to undertake and report on the provision of a minimum average of eleven (11) structured, face to face, mentoring visits to each apprentice in their assigned cohort each calendar year, with additional support provided as needed via utilization of the project risk assessment framework.

Mentor-Advisors were also tasked to undertake and report on the provision of a minimum of 370 hours of advisory services per calendar year, including but not limited to:

- Attendance at career expos
- Engagement with colleges and high schools
- Liaison with Australian Apprenticeship Centres and Job Service Providers
- Liaison with and support of existing, new and prospective employers of apprentices
- Liaison with and support of new and prospective apprentices

APPRENTICE PROFILING

The Funding Agreement established with the Commonwealth detailed the need for the identification of an appropriate workplace evidence profiling system. Additionally, the profiling system selected for the EIAPMS pilot needed to comply with the requirements of State and Territory regulatory bodies.

RTOs in the electrical trades industry have used profiling systems to meet evidence requirements for units of competency for many years. In 2010, after some discussions with State and Territory electrical trades regulators, the Industry became concerned that some of the data collection methods used by RTOs might not meet the requirements of industry and industry regulators. Accordingly, late in 2010 an expert industry panel was established to conduct an evaluation of the apprentice profiling and data collection systems operative in the marketplace.

At the time of signing the EIAPMS Project Funding Agreement (15 June 2012), only one electronic profiling system had been recommended by the Expert Industry Panel as being compliant with relevant requirements. This system was ‘e-profiling’.

eProfiling was subsequently selected as the defined workplace evidence gathering system for the EIAPMS pilot. Furthermore, it is a system that was widely used throughout the industry prior to the Project and, consequently, an appropriate system to use to ensure maximum industry engagement and participation in the EIAPMS pilot program. Additionally, e-Profiling confirmed that charges for the pilot program would be the same as those normally charged to RTOs to use the system, thereby ensuring further consistency.

It is worthy of note, however, that had there been two or more systems that were found to be compliant with training package and regulatory requirements, then E-Oz would not have selected e-Profiling without conducting a comprehensive and transparent selection process.

COMPETENCY BASED PROGRESSION – INDUSTRY BENCHMARKS

The EIAPMS Benchmark Panel was established at the commencement of the Project and the EIAPMS Benchmark Panel Protocol, detailing the Panel's terms of reference, endorsed in November 2012.

The Membership of the Industry Benchmark Panel comprised:

- An Independent chair, and;
- An appointed representative of each of the following organisations:
  - National Electrical and Communications Association
  - Master Electricians Australia
  - Communications Electrical and Plumbing Union – Electrical Division
  - Communications Electrical and Plumbing Union – Communications Division
  - The Electrical Regulatory Authorities Council
  - E-Oz Energy Skills Australia

The Protocol also allowed the Industry Benchmark Panel to invite observers from:

- State and Territory Governments
- The Department of Innovation

Similarly, the Protocol allowed the Panel, by mutual agreement, to co-opt suitably qualified and informed personnel to advise it on relevant aspects of its deliberations and, by mutual agreement, appoint additional members to the Panel.

The Industry Benchmark Panel has the following functions:

- Defining in terms of knowledge, skills and work performance the competency progression benchmarks applicable to both training and remuneration increments for apprentices engaged under a contract of training in the Energy Industry Apprenticeship Progression System project.
- Review of these benchmarks based on evidence gathered during the conduct of the Energy Industry Apprenticeship Progression System project.
- The production and amendment, as required, of relevant procedures, formats or other documentation to facilitate the communication of the agreed Industry Progression Benchmarks to relevant parties.

The Industry Benchmark Panel met on 16 occasions over the course of the Pilot and undertook the work required of it as detailed above.

In summary, the Industry Benchmark Panel agreed on four benchmarks applicable to progression and made recommendation to the E-Oz Board, government and industry on the application of these as the basis of apprentice progression within the project.

The Panel, in defining the benchmarks, considered:

- The applicable Training Package competencies endorsed by the National Skills Standards Council and its successors, and;
- The essential capabilities and critical aspects endorsed by Electrical Regulatory Authorities Council as being required for electrical licencing.
- Historical work performance data gathered from industry approved, electronic-based workplace evidence gathering systems.

RESULTS

Key outcome

The EIAPMS Pilot achieved an apprentice retention rate of: 93%, calculated as follows:

	Total Project Period
Total commencements	1549
Total completions	0
Total withdrawn	• Withdrawals from Industry: 98 • Withdrawals from the Pilot but not from the Industry: 249 • Withdrawals – reason not provided: 14
Total Ongoing	1437 (ie; 1549 – 98 – 14)
Retention Rate (%)	93%
Average length of mentoring time per Apprentice	By 30 June 2015, all apprentices will have had 12 or more months of mentoring

Note: For the five years to commencement of the pilot, NCVER statistics indicate that individual completion rates for the Certificate III Electrician trade qualification remained fairly consistently at around 62%.

Pilot characteristics

In order to ensure Apprentices could be provided with no less than 12 months mentoring, the Pilot was closed to further intakes on 30 June, 2014. In July 2014, 1549 Apprentices and 943 employers had been engaged in the Pilot across all States and Territories. 815 (86%) of employers involved in the pilot were small businesses, 43 (5%) were medium sized businesses and 85 (9%) were large businesses.

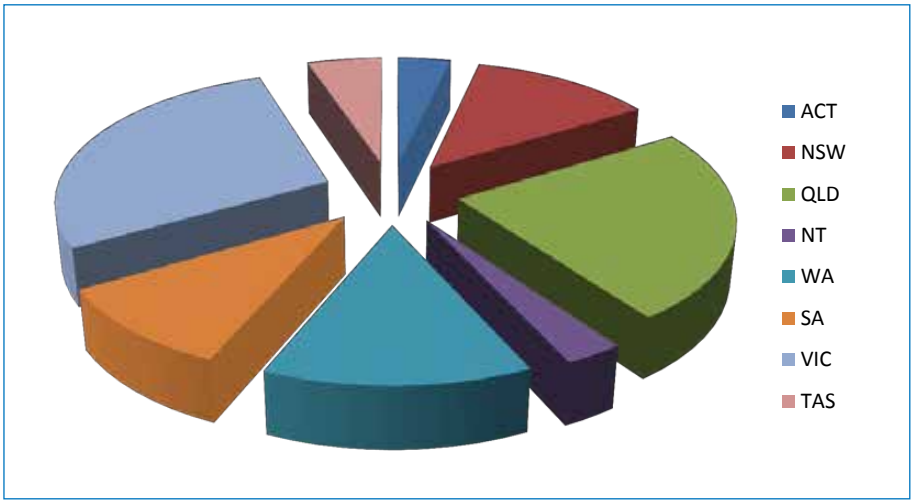
There was a total of 27 Group Training Organisations involved in the pilot, employing 29% of the pilot Apprentices.

As at May 2015, 417 of the enrolled apprentices were mature age (ie; 25 yrs and above), and 45 were female. 443 of the EIAPMS apprentices were in regional localities and 43 were in remote localities.

In terms of training delivery, 65% of Apprentices were enrolled in a public RTO and 35% in a Private RTO. There were no Enterprise RTOs involved in the pilot.

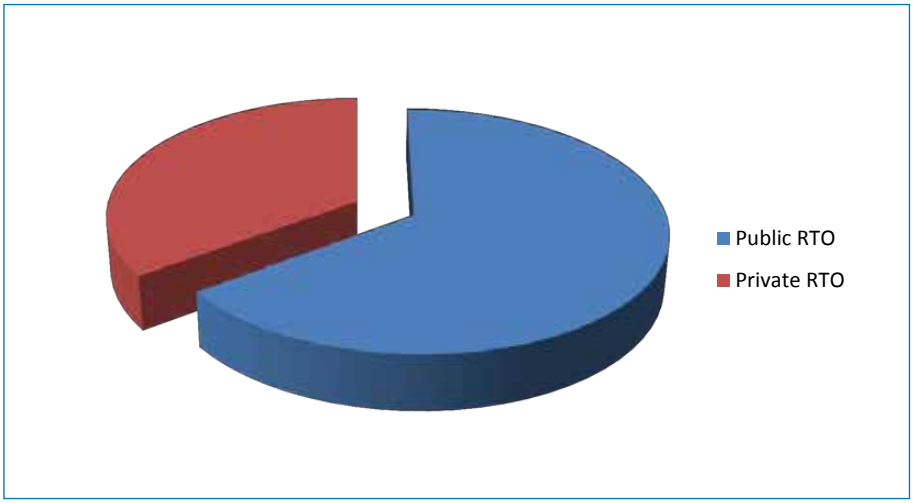
Apprentices in Pilot
(as at July 2014)

State	Total Apprentices
ACT	57
NSW	196
QLD	368
NT	46
WA	207
SA	158
VIC	437
TAS	80
Total	1549



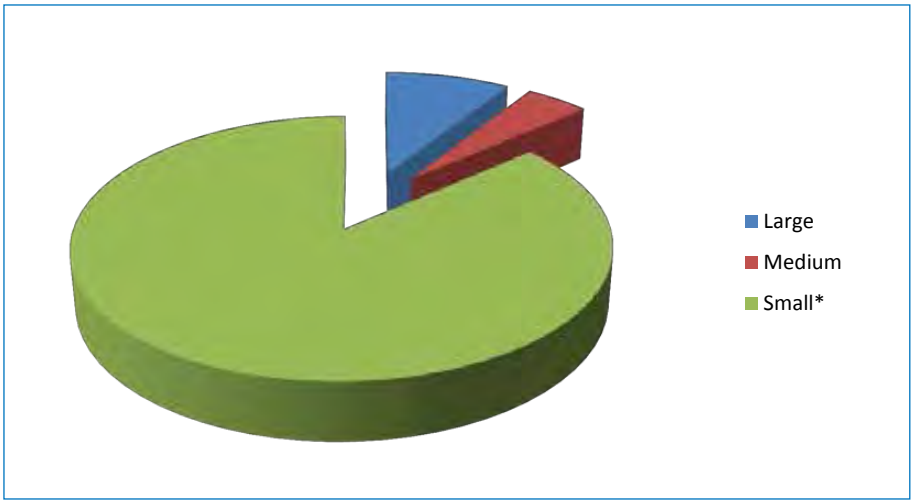
Apprentices in Pilot by RTO type
(as at July 2014)

State	Total App	Public RTO	Private RTO
ACT	57	57	0
NSW	196	196	0
QLD	368	246	122
NT	46	21	25
WA	207	37	170
SA	158	8	150
VIC	437	360	77
TAS	80	80	0
Total	1549	1005	544



Pilot Employer Type
(as at May 2015)

Empl Type	Employers	%
Large	85	9%
Medium	43	5%
Small*	815	86%
Total	943	

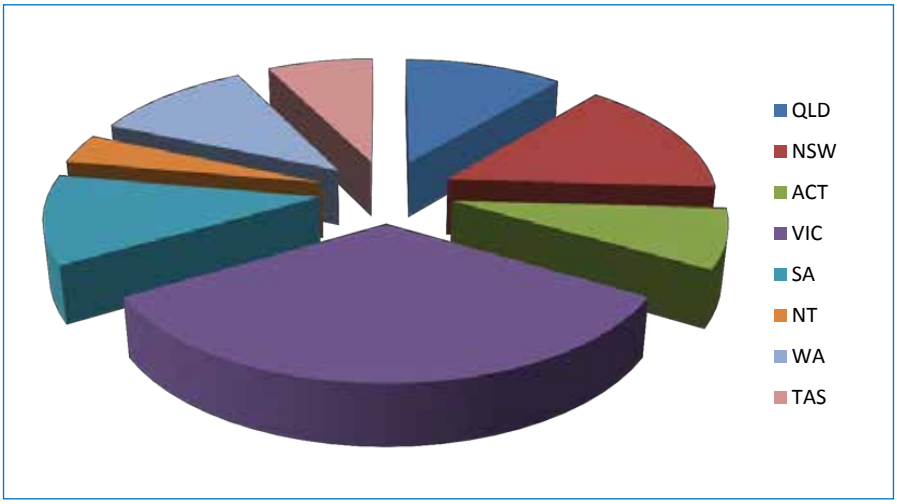


Small employer compilation

Empl Type	Employers
Micro (1-5)	182
Macro (5-15)	133
Small (15-99)	101
Undefined (1-99)	399

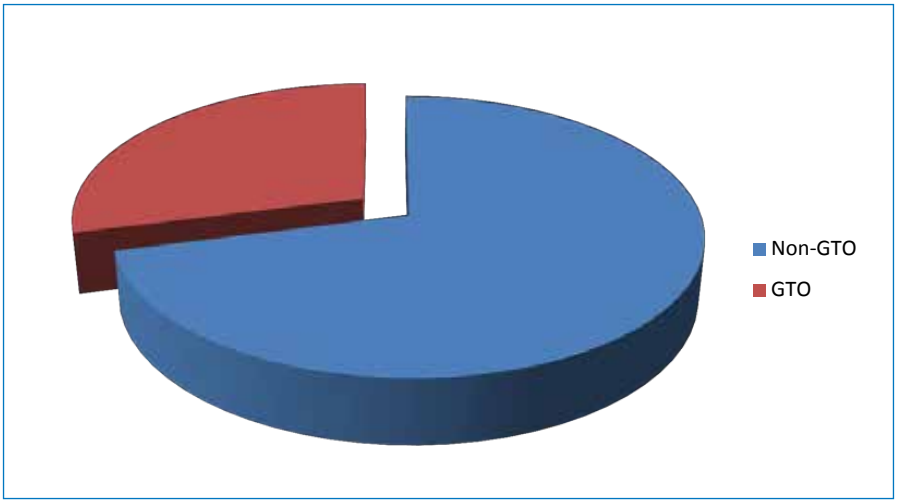
Group Training Organisations in Pilot by State (as at May 2015)

GTOs	Total GTOs
QLD	3
NSW	4
ACT	2
VIC	9
SA	3
NT	1
WA	3
TAS	2
Total	**27**



GTO/Non-GTO apprentice ratio (as at May 2015)

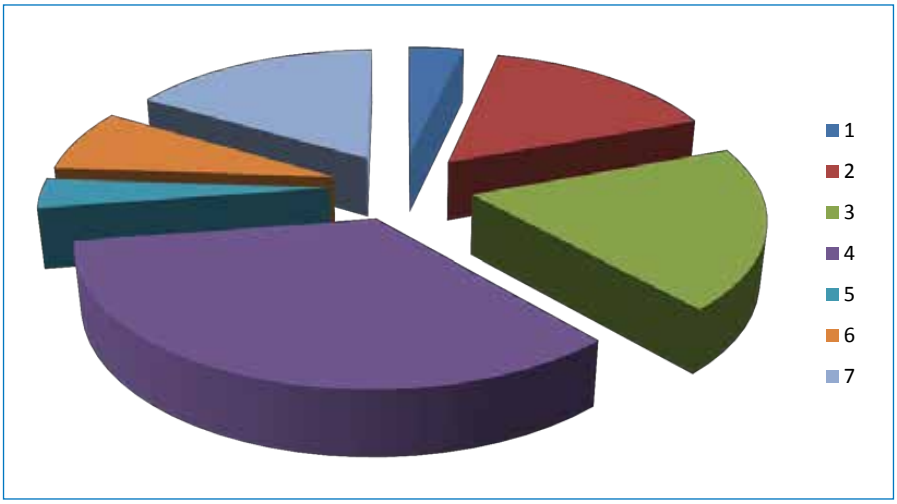
Empl Type	% App Nos
Non-GTO	71%
GTO	29%



Promotion of Electrotechnology Careers

Extensive promotion of Australian Apprenticeships in Electrotechnology across all industries (primarily construction, manufacturing, electricity, gas, waste water and mining) was undertaken over the course of the Pilot Programme. In total, 94,562 people participated in the promotional activities provided.

Activity	Users
1. Careers Expos	3,459
2. Employer Mtgs	14,883
3. Group Sessions	17,976
4. Indiv Sessions	32,364
5. Industry Events	3,285
6. School Visits	6,982
7. Misc	15,613
Total	**94,562**



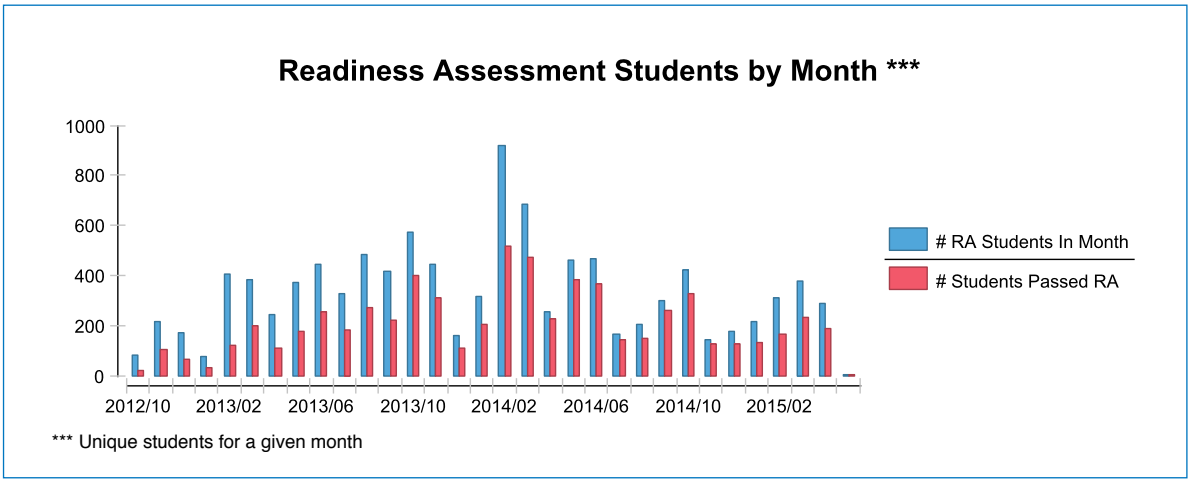
The Readiness Assessment

A requirement of entry to the EIAPMS Pilot was the successful completion of the Apprentice Readiness Assessment (RA). The RA was a web-based aptitude assessment accessible through the EIAPMS LMS.

In addition to the RA, the EIAPMS LMS system contained two versions of a Practice Readiness Assessment, namely; a combined version (including Literacy and Numeracy activities) and a composite version through which candidates could choose to practice either Literacy *or* Numeracy activities. These practice assessments are also supported by on-line literacy and numeracy tutorials.

As at 13 May 2015, 5376 potential apprentices had completed the combined practice assessment, 7584 potential apprentices had completed the Numeracy component of the composite version and 3323 potential apprentices had completed the Literacy component of the composite version.

Although the pilot was closed to further intakes on 30 June 2014, E-Oz continued to offer the RA service. As at 13 May 2015, 18,311 potential apprentices had registered to undertake the RA. 9,841 had completed the RA and 6,316 had achieved a score of 64% or higher.



The National Apprentice Register

The National Apprentice Register (NAR) was launched in October 2013. The purpose of the NAR was to maintain a record of RA-assessed candidates seeking an electrical apprenticeship. The NAR was particularly useful in the brokerage of training positions in that once a candidate has successfully completed their RA and subject to their approval (in conformance with privacy legislation), E-Oz could forward this information to participating employers.

In summary, 929 employers and 1,779 potential apprentices have signed up to the NAR. A 'point-in-time' analysis conducted in October 2014, identified that of the 153 employers who employed an apprentice registered on the NAR, 145 (95%) had themselves registered on the NAR. At the same point in time, 191 potential apprentices had found an apprenticeship through the NAR.

Mentor-Advisor Support Services

34 Mentor-Advisors and 5 Mentor-Advisor Supervisors were engaged over the course of the Pilot. 5 Mentor-Advisors resigned, and 29 remained in full time employment to completion on 30 June 2014. The 3 Tasmanian Mentor-Advisors, job-shared 2 full-time positions. 24 of the Mentor-Advisors were employed in accordance with the sub-contract between E-Oz and NECA National, the remainder were employed directly by E-Oz.

As at May 2015, 15,743 mentoring visits and 1, 653 Advisor activities had been undertaken by the cohort of Mentor-Advisors. In summary, the ratio of time spent between the two roles was: 82% Mentoring: 18% Advising.

Advisor Activities

Activity	Number	Ave hrs	Total hrs
Careers Expos	64	6	384
Employer apts	190	1	190
Group Info sessions	267	1	267
Individual Info sessions	674	1	674
Industry Events	63	1	63
School visits	111	1	111
Other activities	284	1	284
	1653		**1973**

Mentor-Advisors and Supervisors by jurisdiction

State/ Territory	Mentor Advisor	Jurisdiction	Apps	RTOs		Employers			GTOs
			Total	Public	Private	Small	Medium	Large	No
WA	1	North & South Perth	67	1	1	31	7	4	1
	2	North Perth	58	1	1	36	2	6	1
	3	North Perth	73	1	1	10	0	1	1
Queensland	1	Central Brisbane	55	2	1	31	0	1	1
	2	Far North Queenland (Cairns & region)	37	3	0	33	2	0	1
	3	Central Brisbane	95	1	1	16	2	1	1
	4	Central Queensland (MacKay, Rockhampton, Gladstone, Emerald & region)	41	2	0	25	0	4	0
	5	North Queensland (Mt Isa, Townsville & region)	52	2	0	11	0	5	0
	6	North Queensland (Townsville & region)	47	2	0	32	1	4	0
Victoria	1	Southern Victoria	60	2	1	48	1	3	1
	2	Central Victoria	62	2	0	44	3	9	2
	3	Melbourne	50	1	1	24	0	4	1
	4	South East Victoria	59	4	0	55	0	1	1
	5	North Victoria	44	1	0	33	3	3	2
	6	Melbourne	45	1	3	34	2	3	0
	7	North Melbourne	47	2	1	33	2	3	2
	8	Melbourne	47	2	1	31	2	3	0
South Australia	1	South West Adelaide	50	0	1	16	0	1	1
	2	Central Adelaide	49	1	1	9	0	2	2
	3	Central Adelaide	50	0	1	8	0	0	0
Northern Territory	1	Northern Territory	44	1	0	31	2	2	1
New South Wales/ACT	1	Western Sydney	52	3	0	46	0	1	0
	2	Hunter Valley & Central Coast	52	3	0	22	0	1	3
	3	Northern Sydney	31	3	0	8	0	1	1
	4	Canberra	50	2	0	46	0	3	2
	5	NSW South Coast	47	2	0	34	3	6	1
Tasmania	1	Hobart	22	1	0	6	0	0	0
	2	Launceston, Burnie	12	2	0	7	2	0	2
	3	Launceston, Burnie	50	2	0	14	9	0	0

Notes:

* These mentors had higher than the notional 1:50 ratio as they were the designated mentor for one RTO in a metropolitan area within their State/Territory. Their ratio could be higher because their 'ease of service provision' level was higher.

The three Tasmanian mentors job-shared two full time positions.

Blended Learning Training and Assessment Resources

The Certificate III Electrician qualification incorporates 20 Core Units of Competency in addition to Elective Units chosen by the employer to address specific business needs. At completion, 1873 blended learning based training delivery and assessment resources had been developed to support the 20 Core Units and 25 of the most commonly utilised Elective Units (refer tables below).

Throughout the pilot, all resources were freely accessible via the Moodle-based Energise-Oz LMS platform.

Competency Based Progression Industry Benchmarks

The EIAPMS Benchmark Panel was established at the commencement of the Project and the EIAPMS Benchmark Panel Protocol, detailing the Panel's terms of reference, endorsed in November 2012. The Industry Benchmark Panel met on 16 occasions between the 30 August 2012 and the 7 July 2015 and oversaw the development of the Benchmark specifications and formal assessments for each Phase of the Apprenticeship (4 in total).

The Benchmark Panel provided its Final Report to the Project Steering Committee in August 2015. The Report identified that whilst four benchmark assessments had been successfully developed, due to the project having only been 2 years in duration, the sample sizes of the cohorts who had tested the assessments were too small to provide a statistically significant outcome. In this light, the Committee recommended that further testing was necessary.

Supporting Infrastructure

As detailed above, the EIAPMS Project service provision incorporated the following key components:

- National Apprentice Register
- National Readiness Assessment
- Blended Learning Training and Assessment Resources (including Benchmark Asssessments)
- Mentor/Advisor Support Services
- Apprentice profiling

Each of these components was supported by information and communications systems and structures.

Additionally, the Project was supported by a web page, email, ticketing and help-desk services.

The Diagram below details all ICT componentry compiled by E-Oz to support the EIAPMS Project.

As evidenced in the Diagram, wherever possible E-Oz utilised commercially available 'off-the-shelf' software products, developed by well recognised suppliers (ie; Microsoft, Adobe, Apache, VersaSRS, Totara etc).

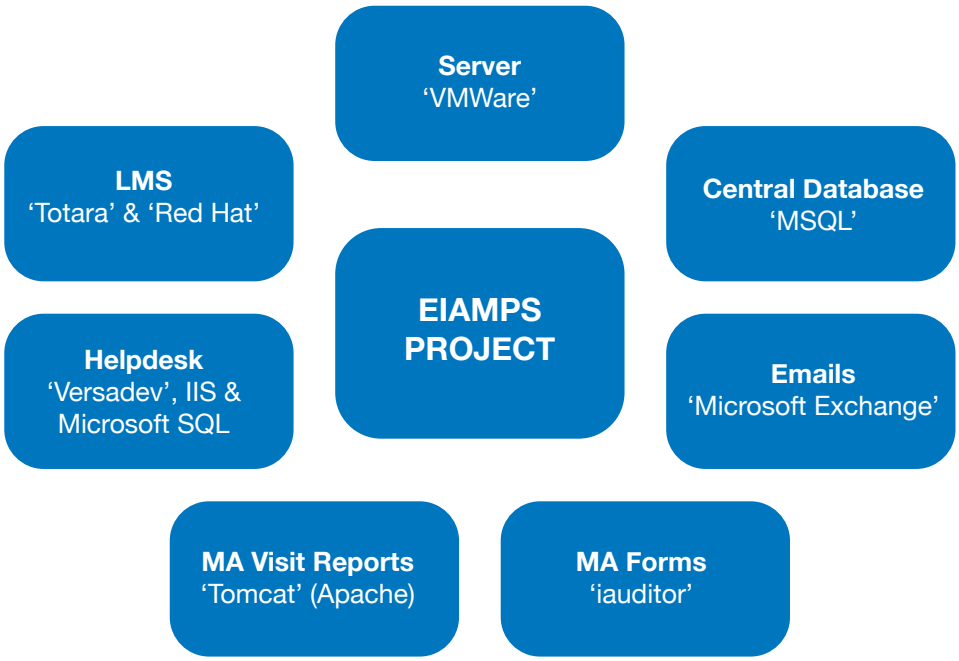
As is common practice with the purchase of any such ICT software, it was necessary for E-Oz to purchase a 'license' for each piece of software from the supplier. Each license was issued to E-Oz for an agreed term (usually a standard 12 months).

Should the Commonwealth or another body wish to replicate any of the systems utilised during the project, licenses for the necessary support software would need to be acquired.

That said, it should be noted that whilst the Diagram details the software products E-Oz chose to utilise, there are many products available in the marketplace that 'do the same job'; user choice would prevail.

Diagram 1: EIAPMS Project ICT Componentry

ICT Componentry – Project Specific



ICT Componentry – General

Contracted services incorporating ICT componentry

EXTERNAL EVALUATION

In order to ensure transparency, E-Oz engaged two external agencies to evaluate the Pilot Programme. These agencies were independent of the industry and had no involvement in the pilot besides independent evaluation:

1. Truth Serum
2. KPMG

ANALYSIS – OVERALL SATISFACTION

TRUTH SERUM'S FINDINGS

Truth-Serum is an independent market research and insight generation agency. Truth Serum specialises in research services within the online environment.

Truth Serum was engaged to conduct a longitudinal study of participant satisfaction over the pilot period. Pilot participants, namely; Apprentices, Employers and RTOs were surveyed on two occasions over the course of the project (ie; mid-point and completion).

Participant views and opinions were sought on key pilot features including pre-participation (i.e. the Readiness Assessment, National Apprentice Register) engagement and support (i.e. the Mentor-Advisor Support Service), instructional design, method and pedagogy (i.e. blended learning training delivery) and resources (i.e. online training, benchmark assessments and the national question bank).

Both surveys were conducted via a secure online environment. The first survey was conducted late in 2013, the second early in 2015. Completion statistics for both surveys were as follow:

	2014-15 Survey	2013-14 Survey
Apprentice	236 completes	104 completes
RTO	44 completes	26 completes
Employer	76 completes	44 completes

For both Survey events, Truth Serum provided a comprehensive report for each participant cohort, ie; Apprentices, Employers and RTOs. The survey results on each of the key deliverables of the project are detailed below. Overall, however, Truth Serum found the following:

Employers

- Employers were more satisfied with the E-Oz EIAPMS Program in 2015 compared to 2014, with a strong increase of +14% positive ratings.
- In 2015, 73% of Employers who participated in the program rated the program as Excellent/Very Good/Good.
- There was a decrease in the number of employers who had a poor experience with the EIAPMS program, with only 9% in 2015 rating the program as 'Poor/Very Poor/Extremely Poor' which is a decrease of -9% from 2014.

Employer Experience – EIAPMS Programme	2014	2015	% Difference
Excellent + Very Good + Good	59%	73%	**+14%**
Neither good or poor	23%	18%	**-5%**
Poor + Very Poor + Extremely Poor	18%	9%	**-9%**

Employers believe the key benefits of the Programme were:

- Independent assessments / support beyond the RTO
- Support by Mentors – was a benefit to employers as well as apprentices
- The Readiness Assessment
- National standardisation of assessments and national testing
- The E-Profiling system which shares the Apprentice's progress with the employer
- A more complete training model with extra testing, practice tests, ability to discuss progress, mentoring and workplace visits

Additionally, employer attitudes across all aspects of the EIAPMS's program saw strong improvement in 2015. Specifically, 97% of employers agreed that they understood what was expected from them (+29%), 87% saw the value of the EIAPMS Programme (+23%), 85% were glad that their company and apprentices had been involved in the EIAPMS Program (+28%) and 80% were satisfied with the level of information and training provided (+24%).

Employer attitudes towards the EIAPMS Programme (Total Strongly Agree+ Agree+ Slightly Agree)	2014	2015	%Difference
I understand what's expected from me and what my responsibilities are in regard to training apprentices	68%	97%	**+29%**
I can see the value of the EIAPMS program	64%	87%	**+23%**
I'm glad that my company and apprentices have been involved in the EIAPMS program/ I'm excited to be involved as an employer in the program	57%	85%	**+28%**
I would like to keep training apprentices using a model like EIAPMS	NA	85%	
I'm satisfied with the level of information and training provided through the EIAPMS program	57%	80%	**+24%**

Apprentices

There was no real difference in overall apprentice satisfaction ratings between 2013 and 2015. Similar to 2013, just over half (52%) of the apprentices rated their experience with the EIAPMS Pilot Program as positive ('Excellent/Very good/Good').

Summary of Rating of Experience	2013	2015	% Difference
Excellent + Very Good + Good (Total Positive)	51%	52%	1%
Neither good or poor	25%	21%	-4%
Poor + Very Poor + Extremely Poor (Total Negative)	24%	27%	3%

Apprentices believe the key benefits of the Programme were:

- The support provided by Mentors and staff involved in the programme. Having regular visits from E-Oz staff and Mentor-Advisors was appreciated
- Self-paced learning and assessment
- Motivating variety of subjects, content and practical work
- Easy to access from anywhere

RTOs

Overall RTO satisfaction with the Programme improved in 2015 with 65% of RTO-based respondents rating the Programme as Excellent/Very Good/Good which is a +34% increase on 2013 ratings.

Summary of Rating of Experience	2013	2015	% Difference
Excellent + Very Good + Good	31%	65%	+34%
Neither good or poor	23%	10%	-13%
Poor + Very Poor + Extremely Poor	46%	25%	-21%

KPMG'S FINDINGS

KPMG is a global network of professional firms providing Audit, Tax and Advisory services. KPMG operates in 155 countries and have more than 162,000 people working in member firms around the world.

KPMG was engaged to audit the project's financial administration and management components on two occasions over the course of the EIAPMS pilot.

A summary of KPMG's findings regarding each of the key deliverables of the project are included below. Overall, however, KPMG identified that:

The Project has achieved its goals with a key highlight being an increase in the apprenticeship retention rate to 93%. Additionally, further key accomplishments of the Project include:

- Governance arrangements
- Readiness assessment tools
- Learning management system (LMS) platform
- Blended learning resources
- Mentor program
- Stakeholder input and communication
- Project administration.

ANALYSIS - KEY DELIVERABLES

READINESS ASSESSMENT

KPMG's findings

Review of documentation combined with stakeholder feedback indicates the readiness assessment has been well received and has addressed a gap in the industry. Having these tools available allows potential apprentices to affirm if the electrical trade is the trade they want to pursue and that they have the mathematical and related capabilities, therefore contributing to the improvement in retention rates

Truth Serum's findings

Overall, the Readiness Assessment was well received by many because:

1. It was easy to use
2. Provided Apprentices with knowledge
3. Was well formatted
4. Provided independent testing and assessment
5. It prepared Apprentices.

In regard to the Apprentices surveyed:

- 67% agree (Agree Slightly/Agree/ Agree Strongly) that the practice assessment helpful
- 65% agree (Agree Slightly/ Agree/Strongly Agree) that the Readiness Assessment gave them a good idea of what to expect in terms of theory
- 59% agree (Agree Slightly/Agree/ Strongly Agree), that the online tutorials are helpful, whereas a third (34%) expressed some disagreement with this statement, suggesting this may be an area for improvement.

In regard to the Employers surveyed:

- There were strong increases in employer satisfaction in 2015 regarding the 'Readiness Assessment' to reach 89% satisfaction (+19% from 2013).

In regard to the RTOs surveyed:

- Attitudes towards the Readiness Assessment were mostly positive amongst RTOs and strong increases in positive sentiment were seen in 2015
- 91% were satisfied with the level of training and resources provided in relation to the Readiness Assessment (+49% from 2013)
- 82% agree (Agree Slightly/ Agree/Strongly Agree) that the Readiness Assessment has had a positive impact on apprentice learning and experiences (+36% from 2013).

NATIONAL APPRENTICE REGISTER

KPMG's findings

KPMG did not provide comment on the National Apprentice Register other than confirmation that this contractual obligation had been met.

Truth Serum's findings

In regard to the Employers surveyed:

- 78% of employers were satisfied that the NAR facilitated contact between apprentices and employers. That said, the majority of employers (77%) in 2015 still continue to use direct method of employment for Apprentices.

In regard to the Apprentices surveyed:

- 77% of apprentices were satisfied that the NAR facilitated contact between apprentices and employers.

BLENDED LEARNING

KPMG's findings

Learning management system (LMS) platform - The LMS platform is a key highlight for the Project. The system houses the blended learning resources, the readiness assessment tools and other tools required to assist the apprentices as they move through the pilot Project.

Blended learning resources - LMS-based learning resources have been developed for the Project and reviewed by industry. Resources developed were improved over time based on feedback received. For example, comments provided indicated resources initially contained too many links to external source material, links with errors and were perceived as 'clunky'. E-Oz responded by reducing the number of links and providing more internal content. Further work to enhance resources making them more sophisticated and user friendly has also occurred in the later stages of the Project. E-Oz approached the development by remaining focused first on the substance and content of the resources and then using feedback provided to address and make them more user-friendly.

Truth Serum's findings

In regard to the employers surveyed:

- Employer satisfaction with the training delivery and assessment provided by the RTO improved under the EIAPMS program, with 77% of employers satisfied in 2015 (+20% from 2014)
- Employer satisfaction with the level of service provided by their RTO has remained consistent with 2014 levels, with only a slight decrease of -2% in 2015
- Employer satisfaction with the quality and frequency of communication from the RTO has improved slightly in 2015, with 75% of employers satisfied (+7% from 2014)
- 83% of employers were satisfied with the blended learning-based training/assessment system and resources.
- 85% agree (Agree Slightly/Agree/Strongly Agree) that they would like to continue training apprentices using a model like EIAPMS (+24% from 2014).
- 80% agree (Agree Slightly/Agree/Strongly Agree) that they are satisfied with the information and training provided (+24% from 2014)

In regard to the Apprentices surveyed:

- The majority of Apprentices (74% 'Slightly agree / Agree / Strongly Agree') agree that Blended Learning resources suit them, are easy to access and are easy to understand

Attitudes towards Blended Learning Resources (Total Disagree and Total Agree)	**2013** n=104		**2015** n=193		
	Total Disagree	Total Agree	Total Disagree	Total Agree	Difference Total Agree
Flexible assessment options suit me	9%	89%	20%	75%	-14%
It's easy to access learning resources and support when I need them	17%	77%	25%	74%	-3%
The resources in the training program are easy to understand	26%	68%	26%	70%	2%
The technology and resources are well integrated throughout the apprentice program	23%	71%	30%	68%	-3%
Interactive Blended learning resources give me the opportunity to learn and progress at my own pace	18%	73%	30%	65%	-8%

In regard to the RTOs surveyed:

- Overall RTOs are more satisfied with the Blended Learning component of the EIAPMS Programme in 2015 compared to 2013
- RTOs believe that significant improvements have been seen across all programme features.
- 74% agree (Agree Slightly/Agree/Strongly Agree) that interactive Blended learning resources are effective at helping apprentices progress at their own pace (+ 24% from 2013)
- 74% agree (Agree Slightly/Agree/Strongly Agree) that flexible delivery options suit them as a teacher (+5% from 2013)
- 74% agree total that they can access the resources and technology easily when needed (+20% from 2013).

The aspects which RTOs liked most about the EIAPMS program were:

1. National program/National assessments/standardised training/structured consistent delivery
2. Easy assessments/Assessment marking/Self marking
3. LMS resources/Moodle/Quizzes
4. Flexible progression/students can progress when ready
5. Creates a positive culture/interaction between teachers students and mentors

Total Agreement - Attitudes towards Blended Learning Resources (Responses: Slightly Agree+Agree+Strongly Agree)	2013	2015	% Difference
Interactive Blended Learning resources are effective at helping apprentices progress at their own pace	50%	74%	**+24%**
Flexible delivery options suit me as a teacher/ Flexible assessment options suit me as a teacher (2013)	69%	74%	**+5%**
I can access the resources and technology easily when I need them	54%	74%	**+20%**
I am satisfied with Blended Learning tools and resources/ I am satisfied with the resources and Blended Learning tools such as the profile development, assessment tools, eLearning technology (2013)	27%	65%	**+38%**
The technology and resources are well integrated throughout the apprentice program	35%	61%	**+27%**
I am satisfied with the teacher professional development provided on the blended learning resources / I am satisfied with the training provided on the blended learning resources (2013)	31%	52%	**+21%**
The resources in the training program are easy to understand	38%	42%	**+3%**

MENTOR-ADVISORS

KP MG's findings

Independent market research and feedback suggests that the role of the Mentors-Advisors has been well received and is considered to have added value to the Project.

Truth Serum's findings

In regard to the employers surveyed:

- Employer satisfaction with the level of service delivered through the Mentor-Advisor program increased across all measures between 2013 and 2015
- 86% of employers feel that their mentor-advisor provided an appropriate level of service to meet their needs (+18% from 2014) and 84% felt they could comfortably discuss their apprentice with their Mentor-advisor (+9% from 2014)
- access to mentors was seen as a valuable benefit for employers

In regard to the apprentices surveyed:

- High levels of agreement were seen across all measures for the Mentor-Adviser guidance and support
- 86% of the apprentices agreed (Agree Slightly/Agree/Strongly Agree) that their Mentor-Adviser was approachable and easy to talk to
- Mentor-Advisers were seen as helpful and supportive and made it easier for the Apprentices to get through their apprenticeship
- Significantly more of Apprentices in their Second Phase were finding their Mentor-Advisor's service of benefit, with 85% agreeing that they liked having a Mentor-Adviser who was available to help with their concerns and provide support when needed.
- The support and regular visits provided by both Mentors and E-Oz staff involved in the program – having regular visits from E-OZ and Mentors was appreciated.

In regard to the RTOs surveyed:

- 79% of RTOs were satisfied with the Mentor-Adviser component of the Programme
- The highest level of satisfaction was seen in the 'relationship' category. that RTO's with 94% agreeing that they 'have a good relationship with the Mentor-Advisor' (+13% from 2013)
- 91% agreed that the Mentor-Advisor was approachable an easy to talk to
- The largest improvement in ratings was in response to the Mentor-Advisor being a 'good role model for the students' where 88% agreed (+22% from 2013)
- RTOs were satisfied with the range of communication channels used between Mentor –Advisors and the RTO, including a combination of Face-to-Face visits, Phone, Email and Text messaging
- RTOs were also satisfied with the frequency of communication between the Mentor-Advisor and RTO which was most likely to be once a week (31%) or once a fortnight (25%)
- For many RTOs, the Mentor-Advisor component was the key strength of the EIAPMS's program, considered an excellent resource for both RTO and students. Many RTOs would have liked to see the Mentor-Advisor component of the Programme continued.

PROFILING

KPMG's findings

KPMG did not provide comment on the Profiling of Apprentices

Truth Serum's findings

In regard to the employers surveyed:

- 80% of employers are satisfied with the profiling of apprentices (ie; eprofiling)
- Employers saw the key benefit as the sharing of apprentice progression data and information with the employer

In regard to the RTOs surveyed:

- 79% of RTOs are satisfied with the profiling of apprentices (ie; eprofiling)

BENCHMARKS

KPMG's findings

Discussions with stakeholders and documentation review indicate that there has been significant resistance by key industry stakeholders, including RTOs, to the use of Industry Benchmark Assessments. This resistance includes concerns in respect of how the RTOs will consistently integrate these components into their assessment strategies.

A significant cultural shift is required to properly embed a competency based progression system and replace the traditional time-based approach. Looking forward, E-Oz will need to consider areas such as; expanding the level of engagement from RTOs (beyond the Pilot group), further tailoring trainer professional development and materials and maintaining adequate support for employers and apprentices.

Agreed benchmarks that are embedded in the Awards will provide a clear standard against which the Regulator can evaluate the diverse set of providers. If this can occur, RTOs will gradually re-position their training to focus on the competencies. However, changing the Award regime has its challenges and will be difficult without clear, robust and well defined benchmarks supported by industry.

Truth Serum's findings

In regard to the employers surveyed:

- 88% of Employers were satisfied with assessment of apprentices through the National Question Bank against industry defined benchmarks (+36% from 2014).
- The key benefit to employers was National standardization of assessments and national testing

In regard to the apprentices surveyed:

- 65% of Apprentices were satisfied that the benchmarks meet industry expectations for quality and robustness

In regard to the RTOs surveyed:

- 89% of RTOs agree (Agree Slightly/Agree/Strongly Agree) that they are aware of the Benchmark assessments and understand how the benchmark assessments works within the EIAPMS Framework.

ONGOING SUSTAINABILITY

EXTERNAL AGENCY RECOMMENDATIONS

KMPG and Truth Serum have provided recommendations for sustainability of the project into the future.

KPMG's Recommendations

Sustainability will be largely dependent on how the Project is further developed to ensure the incentives are balanced and address stakeholders concerns. Key considerations in regard to the Project's sustainability are:

- Incorporating **benchmarks** into industrial awards - Agreed benchmarks that are embedded in the Awards will provide a clear standard against which the Regulator can evaluate the diverse set of providers. If this can occur, RTOs will gradually re-position their training to focus on the competencies. However, changing the reward regime has its challenges and will be difficult without clear, robust and well defined benchmarks supported by industry.
- **Culture** of the industry – A significant cultural shift is required to properly embed a competency based progression system and replace the traditional time-based approach. Looking forward, E-Oz will need to consider areas such as; expanding the level of engagement from RTOs, further tailoring trainer professional development and materials and maintaining adequate support for employers and apprentices.
- **Mentors** to monitor and assist with progress – As previously noted, feedback received via *Truth Serum*[2] suggests that the role of the mentors/advisors has been well received and is considered to have added value to the Project. However, the mentoring component is the most expensive, ongoing element of the current project model. Looking forward, there needs to be consideration of the benefits of the current model and alternatives that could be viably implemented.
- **Tools** and processes developed – Comprehensive and useful tools have been developed as part of the Project. These tools include the Readiness Assessment, Practice Readiness Assessment and the Language, Literacy and Numeracy tutorials. A key consideration for sustainability is, if and how these tools will continue to be provided after the completion of the Project.

While the EIAMPS Project has initiated a shift in the culture of the energy trade industry, this momentum will need to be continued with a significant amount of contribution by industry and government to ensure a true competency based progression model can be successfully implemented.

Truth Serum's Recommendations

Potential areas for improvement and development include:

- Continuing to build on the strengths of the Readiness Assessment feature, making it an industry standard
- Developing a more sophisticated Mentor Support Service, that changes over the Apprenticeship cycle (i.e. E-Oz Mentors for Year 1 and Industry Mentors for Year 2/3/4)
- Developing standard operating policies and procedures for quality and consistency, across all States
- Implementing a training framework and an associated professional development program for
- RTO Trainers and Mentors
- Developing a 'Community of Practice' model for Trainers across all RTOs
- Providing employers with access to the on-line platform for familiarity, knowledge and engagement
- Improving the 'blended learning' pedagogy, getting the blend right for training delivery
- Continuing to invest and improve on-line training resources, ensuring a higher level of interactivity, accuracy, and integration
- Developing and printing hardcopy support resources to compliment online resources
- Continuing to promote that EIAPMS is a long term strategy, that requires time, experience, champions and commitment
- Continuing to build on the program strengths, consolidating and supporting stakeholder engagement and transition.

2 Survey/s conducted by an independent market research and insight generation agency.

INDUSTRY PEAK BODY POSITIONS

The EIAPMS Project partners comprised the National Electrical and Communications Association (NECA), Master Electricians Australia (MEA) and the Electrical Trades Union (ETU).

The partners played a vital role in the Project; providing Industry representation to the Project Steering Committee and all specialist committees (ie; Industry Benchmark Panel, Validation Panel etc).

The partners have drawn on experience gained throughout the project and consideration of the project outcomes in order to articulate their positions going forward. The position of each peak body in regard to the Project's key components is detailed in the following sections.

NATIONAL READINESS ASSESSMENT

NECA's views and position

NECA is supportive of a national benchmark entry test into the industry. It should comprise a standard on-line technical test based on the Readiness Assessment test trialed under the Project. NECA will seek support for the national rollout of the test across all relevant industry associations for the industry.

The Readiness Assessment test should serve two purposes in identifying and addressing potential barriers to success before a candidate begins their apprenticeship. This includes a Recruitment tool with a specific focus on numeracy and literacy skills, to ensure potential candidates have the technical capacity to undertake the training, and to; assist RTOs in providing assistance to address potential barriers to progression identified through readiness indicators.

NECA wishes to explore options for the conduct of the test by industry in partnership with other industry associations and industry. This does not preclude an arrangement with E-OZ or any other organisation that can administer the test in a cost effective way (ie costs recovery only). Support for the test must be sought from all major providers into the industry.

NECA also supports the introduction of aptitude based tests based on the 'ACER' or 'Harrison' or equivalent models. The actual program should not be mandatory but be promoted as a key aspect of the kit for recruitment into the industry. Costs for the test should be kept to a minimum and be borne by the applicant.

NECA will also develop a list of other important entry requirements required for all the industry, including driver's license, drug and alcohol testing, police checks and general medical tests. This will be a guide only and not be listed as mandatory or contain any reference to NECA liability.

An Industry Recruitment Kit, once agreed, should be promoted to all potential apprentices, schools, Australia Apprentice Support Network Service providers, RTOs and other key stakeholders.

MEA's views and position

MEA continues to support the National Readiness Assessment. MEA would also like to see facilitation of greater industry involvement in the content and conduct of the test itself to ensure it continues to reflect industry needs and expectations.

ETU's views and position

The ETU is supportive of the Readiness Assessment Test trialed under the EIAPMS pilot. The entry level test is an important tool designed to help increase completion rates of apprentices undertaking electrical qualifications. Traditionally, electrical apprentices' completion rates have been hovering around 60%. The ETU acknowledges the apprentice retention rate of 93% for the EIAPMS Project and one of the reasons for this is the Readiness Assessment.

Ultimately the test serves two main purposes:

1. To recognise the suitability of potential apprentices completing an electrical apprenticeship. That is, whether they have the technical capabilities to complete an apprenticeship in a reasonable amount of time.
2. To identify any areas of additional support the apprentice may need to help them complete their apprenticeship through industry specific targeting of language and numeracy deficiencies.

Registered Training Organisations (RTOs), whether private or public, should be encouraged to utilise the test for both the Certificate II in Electrotechnology (pre-apprenticeship) and Certificate III in Electrotechnology (trade qualification). If numeracy or literacy issues have been identified, RTOs need to provide remedial training to address any learning difficulties.

The costs associated with an entry level test should be funded by the Commonwealth Government. The initial cost of the test would be outweighed by the long term savings made by the increased completion rates of apprentices. E-Oz should retain the right to charge a fee for the use of this tool which would then enable maintenance and further development, as required.

The use of the Readiness Assessment must become industry standard and widely adopted by all stakeholders if it is to succeed in helping to increase apprentice completion rates. Apprentices can waste years of their lives before finding out that they are not suitable to the electrical industry. Likewise, Government resources are often wasted on apprentices

that don't have the underpinning technical knowledge needed to complete their training.

Summary

All three peak industry bodies are supportive of the Readiness Assessment developed and trialed under the EIAPMS Pilot. The peaks would like to see the continued utilisation of the Assessment into the future, pending ongoing involvement of the industry in regard to its content and conduct to ensure it continues to reflect industry needs and expectations.

NATIONAL RECRUITMENT REGISTER

NECA's views and position

NECA supports the continuation of a National Recruitment Register operated by industry.

MEA's views and position

MEA is in favour of the National Recruitment Register as a means for employers to find industry ready apprentices.

ETU's views and position

ETU supports the use of a National Recruitment Register and potential apprentices seeking employment should have completed the Readiness Assessment.

ETU have some concern of industry operating the Register and opening it up to further scrutiny of apprentices through additional entry points such as compulsory pre-apprenticeship courses, drivers licence and police checks. At times these could be advantageous to employers, however, should not become a mandatory requirement to securing an apprenticeship. Apprenticeships must remain accessible to everyone that possesses the necessary knowledge as demonstrated through the Readiness Assessment.

This tool should be available to be accessed by potential employers by logging on to find apprentices in the required locality using a search engine. The Register should be maintained by E-OZ as the Industry Skills Council and/or in conjunction with the Commonwealth Government.

Summary

All three peak industry bodies are supportive of the National Recruitment Register developed and trialed under the EIAPMS Pilot. The peaks would like to see the continued utilisation of the Register into the future, pending suitable arrangements for its administration, operation and maintenance are in place.

BLENDED LEARNING

NECA's views and position

NECA supports blended learning but is conscious of the inability of some learners to cope with some aspects of online learning. Blended learning is the use of classroom, workplace and online learning delivery. The best use of online learning is for the reinforcement, not replacement, of other learning.

All products developed under the EIAPMS project should be available to all RTOs and industry.

MEA's views and position

From MEA's experience mentoring apprentices, blended learning is an effective means for all apprentices to acquire the skills and knowledge demanded by industry. However, while online tools play an important role in flexible training arrangements, it is important that the focus of this training be on the acquisition of the required practical and technical skills and knowledge.

ETU's views and position

The ETU is supportive of blended learning and understands that there will be some barriers from RTOs mainly around cultural change and adaptation from the system they are accustom too. Additional training of RTOs and teachers may be required to ensure they are capable of delivering training in an appropriate way.

It will also take time for apprentices to adapt from traditional methods of delivery to a blended learning environment that combines on-line and face-to-face delivery. With the addition of industry specific mentors, the challenge can be overcome.

It is essential that E-Oz continues to engage Australian RTOs to purchase and roll out the interactive blended learning products, including materials that support delivery and assessment of units of competency for theoretical and practical training. The Learning Management System's (LMS) reporting infrastructure requires ongoing maintenance and by maximising the number of RTOs utilising the learning and assessment products it will enable ongoing product development and ensure current currency of the operating program.

E-Oz should maintain the right to further refine the resources and tools it has developed and adapt as necessary, in conjunction with stakeholders.

Summary

All three industry peaks are supportive of the blended learning methodology, acknowledging that, to be successful, it must be truly 'blended' (ie; incorporate classroom, e-learning and workplace components). The peaks would like to see continued utilisation of a blended learning methodology for industry training into the future, acknowledging that, for it to be successful, cultural change is required. In this light, RTOs and Apprentices will need to be supported through the adaptation process.

NATIONAL APPRENTICE PROFILING SYSTEM

NECA's views and position

NECA supports the operation of a compulsory national profiling system that tracks and measures the collected evidence of work performed by an apprentice in the workplace and allows for the accurate reporting of workplace activities. It needs to be linked to the National Training Package and reflective of the agreed training plan between the Employer and the Apprentice. The existence of such a system should be mandatory for all electrotechnology apprentices. NECA does not consider that any preference should be given to any particular tool, as long as it is recognised by employers in that particular jurisdiction. It does not support the continuation of the requirement of the E-Profiling tool as a compulsory component of the system, as undertaken through the EIAPMS pilot.

The administration of these arrangements can be conducted by a third party but must be undertaken on a neutral cost basis (i.e. cost recovery) rather than being used as an income stream for any particular organisation.

It is imperative that all RTOs undertake detailed training of apprentices in profiling in order to ensure all apprentices are very clear on the role, requirements and other factors relating to the timeliness and translation of the profiling instrument into work place practice and confirmation of work related competencies. This is already required under a set competency at the commencement of training but there should also be refresher sessions at the commencement of the second and third year.

Training and support should be provided to employers, particularly for small and medium size businesses, by a special federal government apprentice supervisor course program to ensure that employers are best placed to understand their reciprocal obligations and how to more effectively integrate the process into their workplace practices and performance arrangements.

MEA's views and position

MEA acknowledges that a national apprentice profiling system offers benefits. However, MEA would like to see regular reviews of the system to ensure it continues to reflect industry standards. It is also important for readily accessible support to be made available to employers, particularly small business owners, so they can understand and meet their obligations throughout the course of the apprenticeship.

ETU's views and position

The ETU is supportive of a national profiling system that tracks weekly progression of on-the-job training as required by apprentices' training contracts. The evidence collected through profiling is an essential requirement and must be a mandatory part of the CBP model of training.

The ETU supports the E-Profiling model as trialed, and in this day and age, it could be reasonably assumed that the majority of apprentices and employers have access to technology that supports on-line profiling. There may be exceptional circumstances where resources are not available and an alternate paper-based system may be offered. On-line Profiling enables the apprentice, RTO and employer to track progress in real time and adjust workplace on-the-job training arrangements to suit.

Industry as a whole, needs to be aware that profiling is not just a tick and flick process, rather an important part of gathering evidence on necessary skills to complete an apprenticeship. All training institutions need to set guidelines outlining the importance of weekly profiling and the obligations of apprentices and employers.

Monitoring of profiling should take place between the apprentice, employer and RTO at monthly intervals throughout the apprenticeship, to ensure the apprentice is receiving the necessary on-the-job training required to complete their training contract. There are recent examples where this has not happened and apprentices have been forced to swap training packages from electrical to data/communications because they were not getting enough experience with single and three phase power.

A clear focus on employer obligations in training apprentices is necessary at the beginning of an apprentice's journey either when they enter into a training contract or as a pre-requisite to accessing the National Recruitment Register.

Summary

All three peak industry bodies are supportive of mandatory national 'profiling' of Apprentices, either via 'E-profiling' or another system/ tool that reflects agreed industry standards, including compliance with National Training Package requirements and the executed training plan between the employer and the apprentice. The peaks would like to see the continued utilisation of apprentice profiling into the future, acknowledging that employers, apprentices and RTOs must be educated and supported in its use.

BENCHMARK ASSESSMENTS

NECA's views and position

NECA supports the application of competency based training and the importance of integrated workplace and off–the-job validation of skills and competencies.

NECA does not support the implementation of *Benchmarks* for the blanket application of competency based wage progression.

NECA supports the conduct of a technical theory and practical Capstone test at the completion of the Certificate III in Electrotechnology.

NECA considers that the introduction of proscribed benchmark assessments conducted at designated intervals during the apprenticeship by an outside party to the employer and RTO is an unnecessary, administratively burdensome new process that will not provide any added value to the existing arrangement. Quality conduct of on and off- the-job training through the apprenticeship, regular weekly profiling completion and lodgment which is supported by RTO training for apprentices and employers, increased employer confidence and understanding of their relationship with RTOs, and the Capstone test provide excellent safeguards for quality outcomes.

Employers are becoming increasingly concerned over the cost of apprenticeships. Increases in student fees, tool allowances, other workplace allowances, wages (especially those for adult apprentices), and other market factors all combine to make employers wary. The introduction of any other process that will add to costs must pass a clear cost benefit test.

MEA's views and position

While MEA supports competency based progression, MEA are concerned that benchmark assessments have the potential to slow down the progression of competent apprentices. Benchmark assessments also risk adding a further layer of red tape to a system that already has the necessary elements in place to ensure apprentices possess the skills and knowledge necessary to complete their qualification and become skilled tradespeople.

ETU's views and position

The ETU supports the use of Benchmark Assessments and furthermore sees them as a critical component of any competency based training model.

Benchmarks at intervals or phases throughout the apprenticeship play a crucial role in an apprentice's capacity to retain essential knowledge and skills. Every party involved in this project is aware of the dangers that exist in the electrotechnology industry, this further safeguard of workers and community can only be seen in a positive step in the advancement of the industry.

Benchmark Assessments should become an embedded requirement of issuing an electrical licence through energy regulators and, as such, should also be written into training plans or contracts of training. This is currently the case with the final Benchmark or Capstone Test and should become industry standard with all benchmarks.

It is noted that there has been some resistance from RTOs and further consultation and training will be required to implement benchmarks into training organisations.

If a competency based system is to succeed, benchmarks will need to be written into Awards and linked to pay progression of apprentices. Benchmarks will provide a clear and decisive structure for apprentice progression and wages. Furthermore, benchmarks will allow streamlined regulation of RTOs to ensure they are meeting the Australian Qualifications Framework, as regulated by the Australian Skills Quality Authority.

The ETU acknowledges the low participation rates in the trial of benchmarks. One of the main reasons for this is that the benchmarks were not a compulsory part of the pilot and E-Oz had no way of enforcing participation. Results of benchmarks are also not truly accurate as apprentices that did undertake them may not have applied themselves, as there was no consequence to failing.

Once embedded into the framework, the results would be significantly different as they become a mandatory part of the qualification and are treated as such.

Summary

All three industry peaks support Competency Based Progression (CBP). The three industry peaks do not, however, have a consistent view in regard to the role of Benchmark Assessments within a CBP model. The ETU supports the use of Benchmark Assessments, the MEA does not support their use and NECA National supports the conduct of a technical theory and practical 'Capstone test' at the completion of the Certificate III in Electrotechnology, as is current practice. This is a subject area that will require further discussion between the peaks outside the bounds of the pilot.

SUSTAINABILITY STRATEGIES

The outcomes of the Truth Serum and KPMG evaluations, combined with the E-Oz experience and the views of the Industry peaks, indicate that a future Competency Based Progression (CBP) model should incorporate the following key components, albeit with ongoing enhancement to meet changing industry needs:

1. A National Apprentice Register
2. A pre-entry aptitude assessment (ie; 'readiness assessment')
3. Apprentice Mentoring
4. Apprentice profiling
5. Blended Learning-based delivery and assessment
6. Industry Benchmarks (one or more)

Additionally, consideration must be given to the environment in which the model will operate. To this end, the following sections have been developed based on the following assumptions:

A. The federal Government will not continue to financially support implementation of the CBP Model components in their entirety, or at all.

B. The State/Territory Governments will not financially support implementation of the CBP Model components in their entirety, or at all.

C. Variances in Industry and VET operating environments and government funding arrangements will continue to exist and change between jurisdictions.

Should the above conditions and assumptions be accepted, a sustainable CBP Model must also have the following characteristics:

1. Allowances for segmentation to accommodate variances in demand and funding arrangements within and between jurisdictions.
2. Mechanisms to ensure the availability of sufficient financial, temporal, material and human resources to support ongoing maintenance and service provision.
3. Industry, Government, Regulator and VET sector support.

In this light, the following strategies have been developed for ensuring Model sustainability post pilot:

NATIONAL APPRENTICE REGISTER

The National Apprentice Register (NAR) maintains a record of apprenticeship candidates that have successfully completed the Readiness Assessment and wish to be contacted by potential employers in their region. Employers are able to access the register through a secure website and initiate contact with the student to arrange a meeting or interview.

System management, Help desk and co-ordination services will be required to ensure that a NAR system continues to be fully functional and that, where necessary, employers are assisted to fully utilise the system.

The following table details a possible model for the manageable provision of the National Apprentice Register, assuming that no Federal or State Government funding is available to support the service.

Product provision model	If no Government funding available, costs paid by
National Apprentice Register	Industry employers who utilise the system

TRAINING DELIVERY

Blended learning training resources that have been nationally validated against the relevant unit of competence would be provided through a suite of on-line based applications.

One or more Agencies will be required to develop, deploy and maintain the Blended learning training resources. It stands to reason that the Agency(s) would also coordinate the continuous improvement of the blended learning training materials and the national validation and approval of same prior to each version release.

Similarly, efficiencies could be achieved via the same Agency(s) also providing the help desk services necessary to support apprentices, teachers, RTOs and other users to register, maintain and support their 'account'.

In acknowledgement of the need for inherent flexibility in the model to accommodate 'segmented' take up by RTOs, a range of options for resource provision is required.

The following table details possible options for the manageable provision of the Blended learning resources, assuming that no Federal or State Government funding is available to support the service.

Product provision segmentation options	If no Government funding available, costs paid by…
All resources supporting a Unit of Competency	RTO
All resources supporting all Units in a single Phase	RTO
All resources supporting all Units in a full Qualification	RTO

STUDENT ASSESSMENTS

An Agency is required to provide the suite of applications necessary to assist in the assessment of potential apprentices, current apprentices, current licensed electricians and other relevant consumers across the Australia Energy industries.

Practice Readiness Assessments

Practice Readiness Assessments should be provided through an online application and should consist of tailored, industry approved, assessment questions for the industry/qualification. Additionally, the questions should be randomised for each participant. Results should be provided to each participant immediately. Help desk services should be provided to assist in participant registration and, where necessary, payment enquiries.

The following table details a possible model for the manageable provision of Practice Readiness Assessments, assuming that no Federal or State Government funding is available to support the service.

Customer type	If no Government funding available, costs paid by…
RTO	RTO - If the results are to be used by the RTO for student management purposes
Individual	Individual - If the results are to be used by the Individual for job-search purposes
Industry organisations	Industry organisation - If the results are to be used by the Organisation for recruitment purposes.

Automated Readiness Assessments

Readiness assessments should be provided through an online application and consist of tailored, industry approved assessment questions for the industry/qualification. Additionally, the questions should be randomized for each participant. Results should be provided to each participant in a timely manner (within a maximum of 24 hours). Participants should be provided with a printable Certification detailing their results, which can then be included in their Resume and/or shown to potential employers.

System management, Help desk and co-ordination services will be required to ensure that the system continues to be fully functional, that participants have registered and enrolled in an invigilated session and, where required, any access difficulties or other IT issues during the assessment are resolved.

The following table details a possible model for the manageable provision of Automated Readiness Assessments, assuming that no Federal or State Government funding is available to support the service.

Customer type	If no Government funding available, costs paid by…
RTO	RTO- If the results are to be used by the RTO for student management purposes
Individual	Individual - If the results are to be used by the Individual for job-search purposes
Industry organisations	Industry organisation - If the results are to be used by the Organisation for recruitment purposes.

Unit of Competency Knowledge Assessments

Unit of Competency knowledge assessments should be provided through an online application and consist of industry approved questions relevant to the qualification. Additionally, the questions should be randomized for each student. Results should be provided to each RTO in a timely manner (within a maximum of 24 hours). RTOs should also be provided with Help desk and co-ordination services to assist them in ensuring that students have registered and enrolled in an invigilated session correctly and, where required, any access difficulties or other IT issues during the assessment are resolved.

The following table details a possible model for the manageable provision of the Unit of Competency Knowledge Assessments, assuming that no Federal or State Government funding is available to support the service.

Product provision model	If no Government funding available, costs paid by…
Unit of Competency Assessments	RTO
Assessments for all Units in a single Phase	RTO
Assessments for all Units in the full Qualification	RTO

Unit of Competency Practical Assessments

An iPad/Tablet application should be developed to assist RTOs in the assessment of the practical components of a unit. The application would allow teachers to download and update approved assessment templates for a given unit, take photographs for VET regulator auditing purposes, make notes and/or sign off on assessments. In addition, a database of all assessments should be maintained.

RTOs should also be provided with Help desk and co-ordination services to assist them in ensuring that, where required, any access difficulties or other IT issues are resolved.

The following table details a possible model for the manageable provision of the Unit of Competency Practical Assessments, assuming that no Federal or State Government funding is available to support the service.

Product provision model	If no Government funding available, costs paid by…
Unit of Competency Assessments	RTO
Assessments for all Units in a single Phase	RTO
Assessments for all Units in the full Qualification	RTO

IT INFRASTRUCTURE SERVICES

Successful service provision to clients is dependent upon an extensive and sophisticated IT infrastructure, including but not restricted to:

- provisioning and support of server infrastructure to ensure maximum uptime
- maintenance of SSL certificates
- maintenance of operating system upgrades and patches
- management of software updates
- management of data backups and disaster recovery
- management of server hardware
- management of IT security
- webhosting for html pages
- management of blended learning training and assessment material (incl Version control),
- application development, including smartphone and tablet applications
- database development, management and enhancement,
- hardware support
- project management and administration, including system analysis and diagnostics
- Helpdesk services for the system and customers as required.

Additionally, the provision of customised business solutions to clients in various jurisdictions is likely to require systems developed from existing software and infrastructure but with new database and application development services. Tailored solutions are also likely to involve varying degrees of integration with existing systems and/or development of new systems where existing systems are lacking or unavailable.

In this light, the service provider(s) must have business and systems analysis, development and testing capability.

One or more Agencies will be required to provide enabling infrastructure and support services to current and potential RTOs, Employers and Apprentices in the Energy industries.

Stakeholder engagement necessary for sustainability

Given the continually changing landscape of the Australian VET system, the maintenance of strong networks and the ongoing acquisition of accurate intelligence will be integral to the sustainability of any future system.

Stakeholder engagement along the lines of that detailed in the Table below will be necessary.

Stakeholder	Engagement necessary for sustainability
Commonwealth Government	• Advice regarding policy priorities and mechanisms for realising same (i.e.; VET Reform, Apprenticeship funding, Apprenticeship Loan Scheme, etc) • Commitment to direct engagement with Industry regarding the Energy Industry CBP model.
State and Territory Governments	• Advice regarding policy priorities and mechanisms for VET funding, Apprenticeship creation, monitoring and management arrangements. • Commitment to direct engagement with Industry regarding the Energy Industry CBP model.
Industry Peaks	• Support for ongoing implementation of the CBP model • Negotiation of Competency Based Training and Wage Progression industrial arrangements and subsequent Award alterations • Cooperation to develop arrangements for the continued transition of apprentices from a traditional to a CBP model.
RTOs – already engaged	• Continued, implementation and integration of the CBP model as the true training culture within the organisation, including the provision of support to training personnel, as required. • Continued engagement with CBP model quality assurance systems and support structures (ie; national validation, benchmark, training and assessment committees etc) • Expanded utlisation of blended learning based training and assessment methodologies • Adoption of Learning Management Systems which support blended learning based training and assessment methodologies
RTOs – not engaged or not yet fully engaged	• Engagement of RTO management, teaching and administration staff • Commitment to Professional Development • Commitment to continued take up, implementation and integration of the CBP model as the training culture within the organisation. • Commitment to engagement with CBP model quality assurance systems and structures (i.e.; national validation, benchmarking, training and assessment committees etc) • Commitment to utlisation of blended learning based training and assessment methodologies • Commitment to adoption of Learning Management Systems which support blended learning based training and assessment methodologies
Employers	• Commitment to supporting and engaging with the components of a CBP model (i.e.; Readiness Assessments, Unit Assessment, workplace mentoring, profiling, benchmarks, Professional Development etc)
Apprentices	• Commitment to the CBP model and meeting their roles and responsibilities in regard to same.
Schools and Community	• Commitment to the CBP model and preparing students for engagement with the model post secondary schooling.
Industry Regulators	• Cooperation with Industry and its training partners to develop formal systems and structures for recognition ion of Competency Based Progression model benchmarks and outcomes.
VET Regulators	• Cooperation with Industry and its training partners to develop formal systems and structures for the recognition of Competency Based Progression model benchmarks and outcomes. • Cooperation with Industry and its training partners to support arrangements for the transition of apprentices from a traditional to a CBP model.

CONCLUSION & RECOMMENDATION

CONCLUSION

The Energy Industry Apprentice Progression Management System (EIAPMS) pilot project has produced a comprehensive archive of quantitative and qualitative data and information which has never before existed for the Australian Electrotechnology Industry. This data is now available to assist Industry and government make informed decisions regarding Competency Based Progression.

The project has instigated a cultural shift within the sector; RTOs are moving to competency based delivery, employers are showing more interest in the development of their apprentices knowledge and skills and apprentices are more cognisant of the control they have over their pace of progression.

The work undertaken over the term of the Pilot has generated a momentum that must now be nurtured. There is still a considerable amount of work to be undertaken by all parties to ensure a true competency based progression model can be realised and successfully implemented. None-the-less, the foundations for the model are in place.

RECOMMENDATION

The outcomes of the Truth Serum and KPMG pilot program evaluations, combined with the E-Oz experience and the views of the Industry peaks, indicate that a future Competency Based Progression model should incorporate the following key components, albeit with ongoing enhancement to meet changing industry needs:

1. A National Apprentice Register
2. A pre-entry aptitude assessment (ie; 'readiness assessment')
3. Apprentice Mentoring
4. Apprentice Profiling
5. Blended Learning-based delivery and assessment
6. Industry Benchmarks (one or more)

ENCLOSURE: COST BENEFIT ANALYSIS

PROFESSOR ROD MADDOCK

INTRODUCTION

The Energy Industry Apprentice Progression Management System (EIAPMS) Final Report has been produced by E-Oz, following consideration of the qualitative and quantitative information generated over the course of the pilot programme.

However, to ensure a greater level of objectivity around the subject of Sustainability, E-Oz engaged external consultant, Professor Rod Maddock, to undertake a cost benefit analysis and provide recommendations based on same.

Professor Maddock has been a Vice-Chancellor's Fellow at Victoria University since 2012. He is currently President of the Economic Society of Australia's Victorian Branch. In the decade to 2012 he was a senior executive at the Commonwealth Bank of Australia. Earlier roles included Chief Economist for the Business Council of Australia and Head of Economic Policy in the Victorian Cabinet Office. He was also a Professor and Head of the School of Business at La Trobe University.

Professor Maddock has a distinguished academic record with extensive academic publications and experience working in a number of countries. His keynote publications are *Rational Expectations*, *The Australian Economy in the Long Run*, and *Unlocking the Infrastructure.* His research is in the areas of finance and Australian economic development.

The following sections detail Professor Maddock's findings and recommendations in regard to the ongoing sustainability of the EIAPMS programme:

FINDINGS AND RECOMMENDATIONS

The Project involved three separate sections:

1. The *Accelerated Australian Apprenticeship* initiative designed to support systemic change to ensure that vocational education and training completion is based on the attainment of competency, rather than the period of time served.
2. The Australian *Apprenticeships Mentoring Program* designed to help Australian apprentices successfully progress through their apprenticeships.
3. The *Australian Apprenticeships Advisors Program* designed to support Australian Apprenticeships advisers to provide occupation or industry specific information to potential Australian Apprenticeship candidates to help them make an informed decision in choosing the right Australian Apprenticeship pathway.

Together these elements were designed to develop and implement a new structure of competency-based apprenticeship training. In doing this, the Project had two ancillary objectives: (i) improving the completion rate for apprentices, and (ii) improving the teaching of apprentices by developing more unified materials and standardised testing.

In turn the completion rate strategy had three underlying components:

- Development of appropriate entry standards, and testing materials, to ensure apprentices were capable of completing the training in reasonable time
- Development of a mentoring program
- Development of a management system to track the performance of individual apprentices through the training system, by RTO, unit, mentor and/or employer.

COST BENEFIT ANALYSIS

The Project comprised a program of work to develop and deliver a number of services including a readiness assessment, industry-verified progression benchmarks, blended learning based teaching resources, a national assessment bank and apprentice mentoring support. Collectively these were expected to increase the completion rates of electrical apprenticeships.

The potential net benefits of the competency-based apprenticeship progression program are large. The direct benefits are captured by apprentices, RTOs and governments.

Impacts

In order to derive some estimates of the direct benefits and costs arising from the transformation of the apprenticeship training system, we need to make a number of assumptions.

The main assumption is that the program will see the completion rate for apprentices rise from 60 per cent to 80 per cent. We also assume that the program's annual

intake will be 10,000 apprentices, so that the number of new electricians produced each year will rise from 6000 to 8000. During this, the average time taken to complete a qualification is expected to fall by three months.

Additionally, in order to work out some of the long-term implications, we take the starting stock of electricians as 100 000, assume that 5 per cent leave the profession each year, and that electricians work at the trade for a maximum of 35 years.

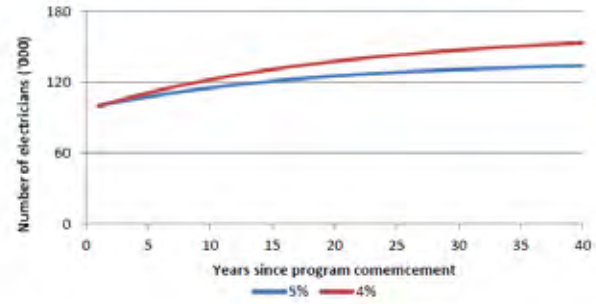
Impact on stock of electricians and wages

As stated, we assume a starting stock of 100,000 electricians. Given the additions, attrition and retirement, the stock of electricians is expected to rise to 120,000 after 15 years, and 136,000 after 35 years. If the attrition rate is lower, at 4 per cent, the stock rises to 130,000 after 15 years and above 150 000 after 35 years.

With the economy growing at around 3 per cent annually, and assuming the demand for electricians grows at about the same rate, in 15 years we are likely to need 144,000 electricians. Figure 1, therefore, suggests a graduation of 8000 electricians per year is insufficient to meet the likely demand for electricians.

This is important as it suggests electricians' wages are unlikely to fall, even with higher graduation rates. The annual earnings of electricians is approximately $75,000 per year (ABS 2013). With an increased shortage of electricians, the real wage is unlikely to fall and will probably rise. The extent of such a change is difficult to estimate but studies suggest a ten per cent increase in labour supply tends to produce an eight per cent fall in real wages. This means that the expected shortage of about 10 per cent could see electricians' wages rise by about 8 per cent in real terms over the next 15 years.

Figure 1: The stock of electricians after initiation of program



Source: Simulation based on above assumptions.

This may lead to some upward pressure on wages. A rise in the number of entrants, or a rise in the completion rates, is to be expected to bring the system back into supply-demand balance.

For the purposes of the benefit-cost analysis, we assume no change in the real wage.

Impact on the training pool and completion payments

The current national training pool of electrical apprentices is round 34,000, with an annual intake of approximately 10,000 students and output of approximately 6000 qualified electricians. Under the revised training model, with higher retention rates, the pool will rise to 37,000 students in training and 8000 graduating per year, assuming students drop-out at a steady rate over the four years. That is, the annual total teaching load will rise by 9 per cent and the number of graduates by 33 per cent.

If all Registered Training Organisations (RTOs) were paid per completion, the total cost to government would rise by 33 per cent whereas the true teaching load has only increased by 9 per cent. A more likely scenario is that RTOs will be paid 9 per cent more in total completion payments than they currently receive, but that will now be spread over 8000 completions (instead of the current 6000). This suggests the payment per completion will fall by about 20 per cent over time.

BENEFITS

Apprentices

The apprentices benefit from two separate developments under the new model: the potential for a shorter average time taken to complete their apprenticeships, and the higher probability of completion.

While the extent of the reduction in average time taken to complete an apprenticeship is unknown

as yet, we will assume it is three months. Given the current difference between an apprentice's wage and electrician's wage this produces a benefit of approximately $1760 per apprentice (Fair Work Ombudsman 2012; Fair Work Ombudsman 2013a; Fair Work Ombudsman 2013b; Fair Work Ombudsman 2013c; Fair Work Ombudsman 2013c; Fair Work Ombudsman 2013d; Fair Work Ombudsman 2013e). Across the 8000 apprentices graduating every year, this produces a gain to them of $14 million per year. Discounting the future stream of such payments produces a long-term expected benefit of $277 million. Some of this will be lost to taxation (see below).

Further, as the likelihood of an incoming apprentice becoming a qualified electrician is expected to rise from 60 to 80 percent under the new model, the amount an incoming apprentice is expected to earn over his or her lifetime will rise. Given the current differences in wages for electricians relative to unskilled workers, this will amount to $128,000 per apprentice (discounted at 4 per cent real, about 7 per cent nominal). In total, each year's cohort of 10 000 entering apprentices will become collectively $1.28 billion better off over their lifetimes. Again some of these benefits will be lost to taxation (see below).

Registered Training Organisations

The total teaching task of RTOs is expected to rise by around 9 per cent in order to produce 30 per cent more graduates (see above). Following the discussion above, if State Training Authorities (STAs) cut the payment per completion so that the RTOs only receive a 9 per cent rise in revenues, a change in the total number of apprentices passing through the system makes little difference to total completion payments.

However, the RTOs also benefit from other aspects of the changes to the apprenticeship system. In Victoria, for example, TAFE staff under the award earn credit for 1748 hour of work per year comprising a maximum teaching duty of 800 hours (Fair Work Ombudsman 2009; Fair Work Ombudsman 2006). The new model potentially takes the functions of setting the curriculum and examination away from individual RTOs, making it likely that more course materials will be generated by external providers rather than each teaching entity. For example, RTOs may specialize and provide particular sorts of class materials to one another. The net effect will be a reduction in the administrative load of each training entity. If this saves each staff member 110 hours per year (two hours a week) which can be diverted to teaching, average teaching hours per staff member could rise by 10 per cent or teaching costs could be cut by 10 per cent.

The new model thus has the potential to reduce RTO costs by 10 per cent, potentially $1500 per graduating apprentice. Spread across 8000 graduates, this reduces the RTO costs by $12 million per year. Discounted over the long term this amounts to a savings of $237million.

State Training Authorities

While the system produces more electricians, the only real area of financial benefit to the STAs occurs if they can capture some of the efficiency gains which the RTOs achieve as a result of lower costs related to teaching and administration.

The area also significant unquantified benefits in terms of improved quality and greater consistency of quality of the job-ready tradespeople produced.

Government

The main advantage to government arises through the taxation of the larger pool of skilled tradespeople in the economy. If the average tax rate is 30 per cent, then government can expect to increase its revenues by 30 per cent of the incremental incomes earned by apprentices. This is a redistribution of the benefits between the two parties, and not an addition to or loss of benefit of the project.

The National Apprenticeship Register provides the potential for governments to reduce significantly the amount of effort and money they put into finding apprentices and matching them to employers. There is an extensive program of assistance to apprentices, summarised at the national level. It seems likely that the Register, based on Readiness Assessment entry requirement, should provide a means for the Federal Government to reduce its expenditure in this area significantly or alternatively, to redirect it towards social equity ends or towards areas of disadvantage.

INDIRECT BENEFITS

There is also a large indirect pay-off to industry employers in ensuring that staff they employ are competent to undertake the tasks for which they are employed, significantly reducing the costs of supervision, insurance costs, and helping prevent industrial accidents.

Another indirect benefit arises from the important efficiencies in

monitoring and regulation from the consistency which derives from the implementation of the benchmark model.

In a training sector where there are a large number of RTOs, it is likely that people will graduate from their apprenticeships with a wide range of learnings, albeit they have been trained against the prescribed Units of Competency in the national Electricians qualification. Given this diversity, the VET regulator then has the problem of assessing RTOs with very different performances, and the Industry regulators to accept for licensing the cohort's potentially diverse knowledge and experiences.

One effect of having well-defined competency benchmarks is to ensure greater consistency of outputs. In turn, this makes it easier for both VET and Industry regulators to evaluate the quality of the people seeking their endorsement.

COSTS

Apprentices

To the extent that more apprentices stay in the training system, and where apprentice wages are below what they could earn outside, there is a cost to apprentices. We take the average differential to be $5000 (Fair Work Ombudsman 2012). By staying in training, each cohort is foregoing 5000 person years of incremental wages or $25 million per year. Over a 40 year horizon, the discounted loss of wages is $494 million.

Running costs

The direct costs of the new model being put in place include the costs of entry testing, remediation, curriculum development, assessment and mentoring.

Entry testing costs around $50 per student, so if 12,000 applicants are tested each year the cost is $0.6 million or about $12 million (in current dollars) over the lifetime of the program. Curriculum development for 30 units (approximately $100 000 each to develop) adds a one-off cost of $3 million. If this is done every three years on a rolling basis, the cost is $1 million per year, or $20 million over the life of the program. Remediation mainly occurs online and amounts to about five additional units, so that remediation cost is about one-sixth of the cost of curriculum development. The assessment banks and national moderation forums cost about $500,000 to run and maintain annually.

The current cost of mentoring ($2000 per apprentice per year) for 37 000 apprentices equates to $74 million per year, or $1464 million over the program's lifetime.

As such, the mentoring cost appears excessively high; if a mentor sees four apprentices per day, he or she can spend time with each apprentice every three weeks (currently each mentor manages 50 apprentices). This seems unsustainable in the long run, and it appears reasonable that the mentors manage 100 apprentices each, visiting them every six weeks. In this case, the cost of mentoring would fall to $37 million annually. Other approaches are of course possible, and a new program targeted more directly at those apprentices judged to be at greatest need, and funded by a competitive contract, seems a more efficient use of taxpayers' funds.

SUMMARY

Even without a formal benefit-cost analysis, it seems clear that the benefits of the reforms outweigh the costs by a considerable margin.

This means that the program of reform is potentially sustainable. The central issue is thus determining how to allocate the costs and benefits so that everyone makes a net gain and hence has an incentive to support the program. Getting the incentives right will make the program actually sustainable.

The following is provided as a summary:

1. The Government has provided a kick-start to the sector as it moves towards competency-based model.

   The major remaining step is to **incorporate the new competency-based benchmarks into industrial Awards.** Once this happens, Registered Training Organisations will gradually re-orient their training to focus on the competencies. This process would be difficult to implement without well-defined benchmarks because of the large number of RTO providers the VET regulator has to monitor.

   If the benchmarks are not embedded in Awards or licensing regimes, then the competency-based training system is likely to collapse.

   The benchmarks and systems supporting their development and currency, should be developed under the auspices of the Skills Council and ideally be paid for by

the Council with costs reimbursed by the training providers on a cost-recovery fee basis.

2. Agreement on benchmarks and their embedding in the Awards will allow the industry to deliver tradespeople who are clearly job-ready. This would otherwise be difficult in an environment where there are a wide range of RTO providers. It provides clear standards against which the VET Regulator can evaluate the diverse set of providers.

3. Many of the benefits of the Project derive from reducing wastage which arose because apprentices were poorly prepared to commence training. This has now been rectified with the approved and accepted **Readiness Assessment** (RA) tool.

   While no one should have a monopoly on Readiness Assessments, nor in remediation, the E-Oz process has worked efficiently and should be encouraged. While other providers of RA tools may emerge, E-Oz should be allowed to market this tool to provide it with the revenues to maintain the currency of the tool, associated software, and remediating materials. As such the **Readiness Assessment should be self-sustaining**.

   It is important that RTOs should not be allowed to undertake the Readiness Assessment. This is because of a fundamental conflict of interest. If RTOs are paid per completion, they have every incentive to allow poorly prepared candidates into the system and then to lower standards to allow them to graduate.

   Effectively we ensure quality completions by requiring Readiness Assessment at entry, and Benchmarking at completion, with a range or providers in the middle.

4. Once apprentices are allowed into the system, **Mentors** have been used to monitor and assist with their progress. While governments may decide to continue with mentoring, such mentoring services should be auctioned on a contractual basis, with a payment based on achieving performance targets.

   The project experience has proved that getting, training and motivating a large group of mentors, managed by a range of different providers, is a slow and difficult process. It is also an expensive process.

   The *Truth Serum* research suggests that Mentors have been well received. They are considered to have added value, playing an important role as they liaise between all parties and providing practical support by assisting with follow up on issues (Truth Serum 2013a).

   Mentoring is the most expensive ongoing component of the current model. It is really an issue for government to decide if the benefits it believes it is getting from the mentoring model justify the cost.

   A more sustainable alternative would appear to be:

   1. Only mentor intensively those apprentices identified as being at particular risk, either by profiling, as a by-product of the Readiness Assessment, or by the results they are achieving during their training.
   2. Contract, possibly by a reverse auction, for the right to improve the graduation rate of at-risk apprentice candidates.

   The work within the Project on mentoring should provide potential providers with the factual base they need in order to bid for the business. It seems likely that a number of parties would bid for mentoring work, and the auction process will keep government costs to a minimum.

5. A number of **Tools and Processes** have been developed in the Project. The fundamental issue for sustainability is whether these tools will continue to be provided after the completion of Project funding.

   There appears to be strong support for the electronic formats and for the Industry Benchmark Assessments.

   RTOs have commercial incentives to find the most cost effective way of delivering on their objectives. Even TAFEs are under continuing pressure to find ways to improve their services as efficiently as possible. This means that there is no need for any additional incentives and RTOs will solve the problem of developing the tools they need, either by producing them themselves, by banding together to spread costs or by buying them from external providers. That is, these and other learning resources will have a market and should be able to be provided on a stand-alone commercial basis to RTOs.

5. **The basic approach should be for service providers (including E-Oz) and the RTOs to have the business incentives to maintain and develop the tools to the maximum extent possible. Competing providers should be allowed to enter in competition with E-Oz.**

   Where E-Oz has developed tools under the Project, as well as providing them to the Government, it should be allowed to charge a fee for their use to ensure that the current investment is not wasted.

   Specifically:

   a. The Readiness Assessment tool(s) regardless of the provider would have to be approved by the State Training Authorities or any other funding agency as a barrier against low-quality testing. Allowing E-Oz to retain the current tools provides it with an incentive to maintain them. This should not be seen as a monopoly, and other providers (but not RTOs) should be allowed to enter the market with alternative tools although it would clearly be more efficient to have a single provider.

   b. The Managing Apprenticeship Progression (MAP) tool developed within the project is one of many possible tools which may be of assistance to industry participants. A number of others already exist. E-Oz should be able to use, develop and market the existing product.

   c. The Mentor Management tool (MM) is similarly just one of a range of competing tools to manage mentors. This should be a contestable market.

   d. RTOs like the idea of the National Apprentice Register (NAR). Government could take on the Register, encourage its use by employers and support it in order to facilitate their oversight of the sector, or Government could outsource the monitoring under contract.

      Government seems the most obvious purchaser of these services, particularly to the extent that the tools provide insights into the most efficient and effective RTOs, processes and procedures. This would enable Government to optimize its spending in the sector.

   e. The various Blended Learning Resources (BLR) materials and tools sit alongside the tools and examination materials which have already been developed by each of the RTOs. To the extent that there are economies of scale in providing these, there are social benefits from allowing E-Oz to use, develop and extend these materials and provide them to RTOs on a fee-for-service basis as an incentive to maintain them. Similarly, RTOs which develop like materials should be able to sell those services to other providers, or exchange them on some barter process.

   f. The National Apprenticeship Register tool (NAR) provides a searchable service which makes clear to potential employers those people who have passed the Readiness Assessment and are available for apprenticeships in particular localities . This is a tool which the Government or the Skills Council could operate as a match-making service. They may decide to maintain it themselves or outsource the management and development.

6. The recent changes to the budgets of the TAFEs and of the incentive payments provided for completions by providers more generally, are likely to increase the importance of the outputs of this Project.

   The main effect has been to increase the budgetary pressure on providers in the sector and to differentiate more clearly the payments for training in different sectors. While adaptation is slow, and the policies subject to change, the long term effect will be:

   a. to force providers to focus much more explicitly on teaching to the Competencies so as to get the greatest value for their effort, and

   b. to encourage them to make much greater use of externally provided resources (including those developed in the Project).

KEY RECOMMENDATIONS

1. Given the diversity of RTOs, the move to a competency-based training system will not deliver sustained benefits unless it is based on benchmarks external to the RTOs.

2. Three things are necessary:

   a. The competency-based benchmarks should be integrated into the various Awards thereby efficiently delivering job-ready tradespeople.

b. Achieving the cap-stone benchmark should be absolutely essential in order to be licenced anywhere in Australia.

c. The benchmarks should be the property of the relevant industrial parties probably as gathered in the appropriate Skills Council (and in conjunction with the licencing authorities) and not the RTOs.

3. The other major benefit of the transformations of apprenticeships will come from raising completion rates.

   a. Strict Readiness Assessment is essential and should be an industry standard.

   b. Governments should not fund any apprentice who has not completed a Readiness Assessment

4. Mentoring is expensive but appears to add value.

   a. Government support for mentoring should be a contestable process, and subject to its own review processes.

   a. Those states which have Building & Construction Industry Training Funds should use them to support mentoring for at-risk apprentices.

5. The various tools developed during the project need an owner if they are to have an ongoing benefit. Incentives are fundamental to sustainability.

   a. The tools should be made available to the Government for further licensing as it sees appropriate.

   b. As part of the sustainability process, E-Oz should retain the right to use the tools, to maintain them and to develop them further for its own purposes. This provides it with an appropriate incentive to ensure that the project investments are not wasted.

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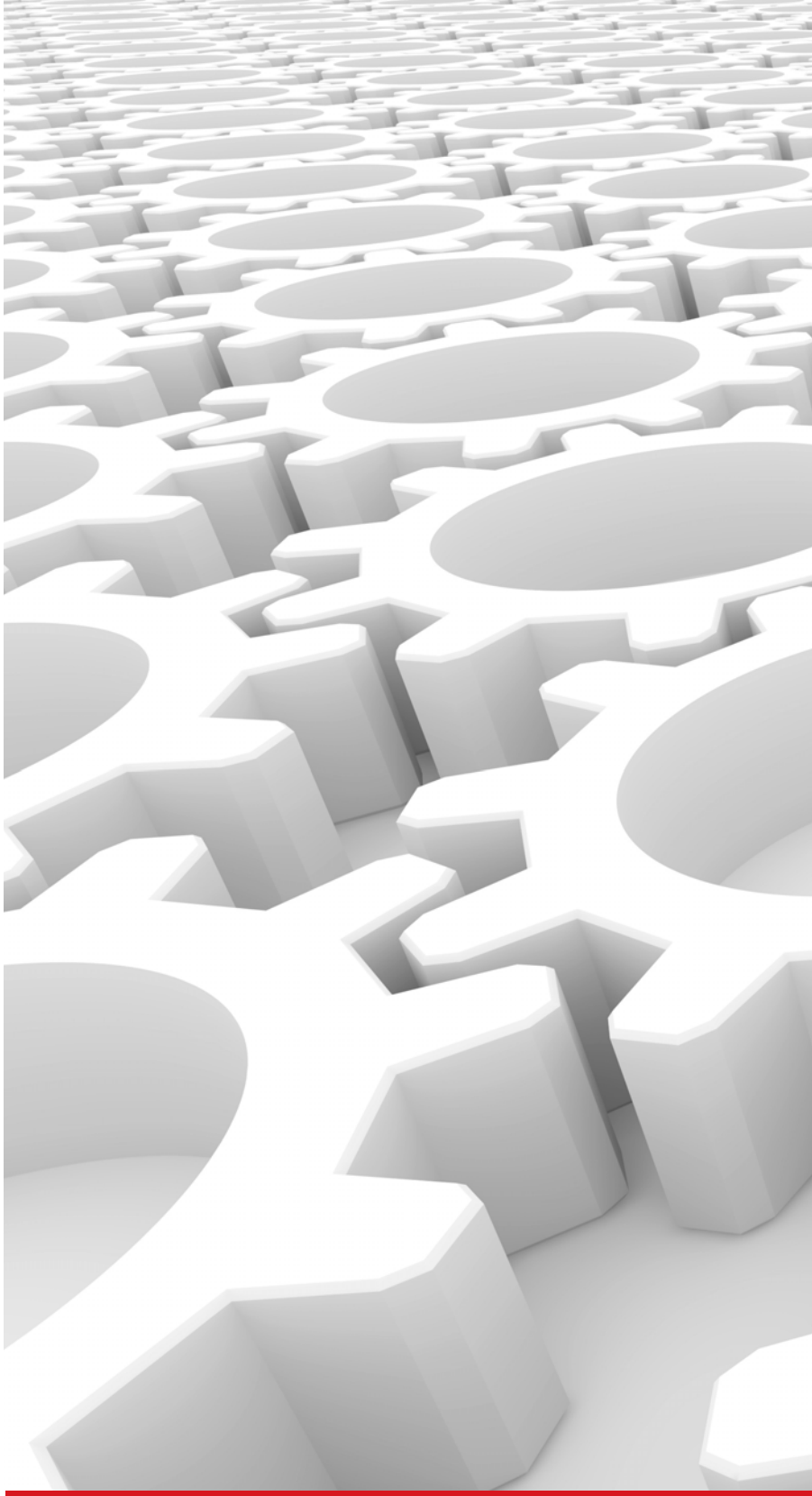

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