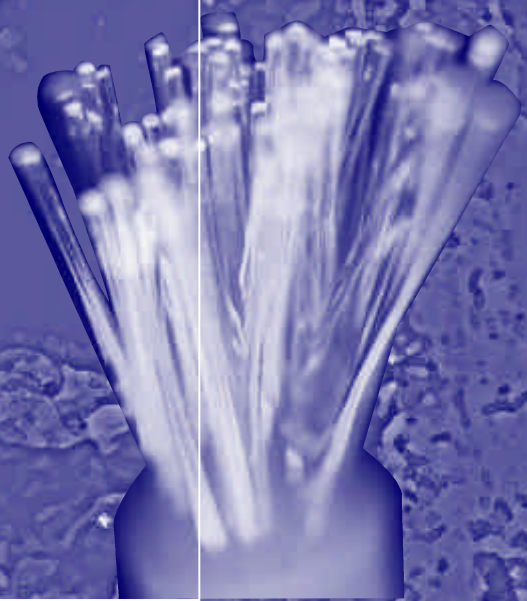
Electrotechnology Australia

Progress Report June 2001

Skill Shortages in Electrotechnology

Produced by the
Electrotechnology Task Force



INDUSTRY SKILLS INITIATIVE

A Commonwealth Government Initiative

Contents

Foreword

As Chair of the Task Force, I have the pleasure of representing the work and intellect of many good and committed people. This project has attracted interest from across the Industry and The Task Force has had no trouble in sourcing organisations keen to participate, offering their corporate and intellectual resources.

The Task Force has established five Working Groups with specialist capabilities appropriate to the particular aspects of the Action Plan. Each Working Group has met the agreed timelines necessary to achieve the defined outcomes.

Whilst each of the twenty-one outcomes in the Action Plan is being addressed, work is focused on three particular projects that provide the platforms for each Group's activity and ultimately the overall Action Plan.

The three projects are:

- Careers Project
- Employer Engagement Project
- Group Training Targeted Initiative Program Project

The projects are being undertaken in partnership with DETYA. The project outcomes are complementary to the National Industry Skills Initiative and the Task Force's capability has been enhanced by this cooperative approach of the Government.

Each of these projects is providing information not otherwise available, either on an Industry or cross Industry basis. The Employer Engagement Survey addressed an issue not previously surveyed or researched in any structured way. The survey brief given to the National Centre for Vocational Education Research (NCVER) required, amongst other things, a literature search. That search confirmed the identified gap in the research. The survey is providing insight into reasons why employers are reluctant to take on new apprentices. Economic conditions emerge as the major influence in employment of apprentices. Other issues raised include size of the business, nature of work, amount of work available, perception of the suitability of the apprentices, and the support available to those who are responsible for managing apprentices.

The Task Force is also developing measurement criteria, which will ultimately be used to measure the project's success. These criteria will provide projections to be used by Industry and Government to plan the Industry's ongoing skill needs.

In the 'Report on Skill Shortages Electrotechnology' (2000), I provided an employer perspective about the ongoing issues as they impact on enterprises in the Industry. That perspective can be summarised as follows:

- The current rate of ongoing technological change in the Industry is very high and is expected to increase.
- New technology means that the Industry is no longer a 'smokestack Industry' and there is a need to promote a new image.
- The nature of the Industry is altering from using passive or static technology to working with 'smart' technology such as home automation and the integration of systems including data.
- It is important to obtain economic value from the new technology and this requires new skills across the Industry.
- Short product cycles now mean that updating skills is of critical importance to the workplace and to the workforce.
- Retraining the existing Industry workforce is very important, as is the need to identify and respond to demands for new skill sets.

These comments remain valid and provide the necessary motivation for Industry and Government to continue this work. The Minister is to be congratulated for his vision and commitment in initiating the project.

SIMON GERARD

Chair

Section 1
Overview

Introduction

This Report of the Electrotechnology Task Force is the first report of progress against the Action Plan since the Plan was executed and the Task Force was formed. The Action Plan was signed by the Minister for Education Training and Youth Affairs, The Hon Dr David Kemp and the Task Force Chair, Simon Gerard on 27 July 2000.

The Action Plan emanates from the Ministerial response to recommendations in the 'Report on Skills Shortage in Electrotechnology' (2000). The Action Plan mandates a Task Force of Industry representatives to implement a strategy to resolve the skill shortage problem. The Task Force will use its full three years honouring its undertaking, but the early results show the strategy is correct and a significant contribution will be made as a result of the Minister's Skills initiative.

The Task Force developed the Action Plan as a living and breathing document. Accordingly, the current Action Plan and its associated Terms of Reference reflects the achievements to date and the evolving priorities as at 24 January 2001; but still maintains the integrity of the Minister's objectives.

The measurement criteria under development by the Task Force will allow interested parties to gauge the success of the initiative for this sector. More importantly, those measures will provide the basis for ongoing assessment and planning.

Achievements

As the first report after six months into a three-year project where the target is to increase skilled employment brought about by structural and attitudinal change, achievements cannot yet be measured against the ultimate outcome, i.e. more placements.

We will measure our success by:

- The number of New Apprentice completions.
- An increase in the retention of tradespersons.
- The number of New Apprentices required in skill sets.
- The number of New Apprentices engaged in learning skills for emerging technology.
- Sufficient suitable applicants for New Apprentices and enough positions available in required skill sets.

Achievement, measured against the Action Plan, is consistent with the targets for this stage. It is reasonable to expect this will continue.

Despite the short timeframe, there has been some remarkable progress and identifiable achievement. The employer survey is ground breaking. The whole of Industry approach to Career Education is very effective. The significant upfront financial investment enabled Industry to develop state of the art career materials and strategies, which it can now keep up to date.

Industry and government support for the initiative will provide a result more than the sum total of the individual inputs. On behalf of the Task Force, we submit the following as the achievements of the project to date:

- An Industry strategy that addresses skill shortages has been developed, resourced and is being implemented.
- Implementation of the Action Plan consistent with its timeline.
- Engagement by Industry that has seen those at the highest levels commit personal and corporate resources to the project.

- Engagement of the media, particularly Industry media, thereby establishing a regular and credible line of ongoing communication about the issue and progress made.
- Engagement by those with a regulatory role, both technical and systemic to achieve an objective review of the impact on their sphere of responsibility.
- Acceptance by all interest groups that there is a problem that needs to be fixed.
- Acceptance by some sectors that the current pathways to an occupation in electrotechnology have barriers that are stifling supply.
- Statistically valid information. Never again will objective debate be obstructed by anecdotal evidence, which is usually biased, emotional and therefore unreliable as the basis for policy development.
- State of the art medium for distributing and supplying targeted career information. This includes excellent products such as:
  - Hard copy material
  - Website based on a "grunge" theme
  - Credit card sized CD Rom
  - Dynamic email, and importantly
  - Industry commitment to keep it up to date.

In summary:

- A strategy is now in place.
- The subject is discussed across the Industry.
- Industry leaders have taken up the challenge.
- Industry media is supporting the initiative.
- Target and performance criteria are being established for all objectives and strategies.
- Research has been conducted that allows policy to be developed on scientific rather then anecdotal information.

Action Plan Progress Check:

- Task Force has been formed and is implementing the Action Plan.
- Five Industry Working Groups have been formed to take forward key elements of the Action Plan.
- Research has been commissioned into attitudinal barriers to entry to New Apprenticeships.
- Employer engagement research commissioned.
- Implementation of communications strategies for careers in electrotechnology is almost complete.
- Communications strategy for informing the Industry about the Action Plan and the Initiative has been developed and implemented.
- Commenced analysis of alternative pathway options.
- Group Training Companies' value being evaluated.
- Regulatory and systemic barriers being articulated.

Action Plan/Statement of Agreement

The Minister and Simon Gerard on behalf of the Industry signed a Statement of Agreement and Industry Skills Action Plan that documents, at a broad level, the agreed actions for Industry and Government emerging from the National Industry Skills Initiative. The Industry Skills Action Plan outlines in more detail initiatives that Industry and government agreed to undertake to address identified barriers to skills development. Further activity and actions may emerge as the plan evolves and as elements are progressively implemented.

The National Electrical and Communications Association (NECA) on behalf of the Electrotechnology Working Group established an Electrotechnology Industry Task Force to take forward the issues identified in the action plan in four key areas:

- Increased marketing and promotion
- More flexible and Alternative Training Pathways
- Evaluation of regulatory, legislative or systemic barriers to New Apprenticeships
- A streamlined response to demand for new skills

The Task Force agreed to report publicly on the impact of achievements to date against these four action areas at the next National Industry Skills Forum. The Task Force agreed to work in conjunction with the National Steering Committee on Cross-Industry issues on key actions and will provide regular reports on achievements against the plan directly to the Minister for Education, Training and Youth Affairs until June 2002.

The Commonwealth undertook to assist with implementation of action as outlined in the action plan through direct participation in the Electrotechnology Industry Task Force and on specific initiatives.

Section 2
The Skills Shortage Issue

Overview of the Electrotechnology Industry

The electrotechnology industry turnover in Australia in 2000 was $50 billion, with the contracting sector accounting for $6.1 billion.

The Electrotechnology Working Group relates its research into skill shortages to the electrotechnology trades, covering occupations that fall within the electrical, electronic and communication sectors.

Total employment in the electrotechnology trades workforce is approaching 220,000 people. This amounts to some 2.4% of all employment in Australia. These trades represent the third largest area of employment in Australia's trades workforce (behind the building and construction and metal trades), accounting for some 16% of total trades employment in Australia.

The major occupations in the electrical trades are electricians, electronic and office equipment tradespersons, communications trades and refrigeration and air-conditioning mechanics. The current rate of technological change in the Industry is very high and is expected to increase. The use of 'smart' technology such as home automation and the integration of systems, including data is becoming common in many sectors of the Industry.

As the Industry develops and changes, more sophisticated technical skills and problem solving abilities are in demand. The primary mode of entry into the Industry is via a traditional apprenticeship. Apprentices are expected to be highly competent in the skills required and to be prepared to continue updating skills throughout their working life.

Demand for Skills and Supply of Skills

Critical issues and barriers impacting on skill shortages in the electrotechnology trades are summarised as follows:

1. The demand for skills is high and employment growth is projected to increase to 2.5% per year over the next few years. The communications trades persons occupation category has the highest forecast annual growth rate of 5.4%.

2. The supply of skills to meet growing demand is potentially inadequate as:

   - The proportion of total skilled trades workforce in training in the electrotechnology Industry is just over 9%. This is lower than the 12% average current for the whole skilled trades workforce in Australia.
   - The attrition rate for those in new apprenticeships in the electrotechnology trades needs to be improved to meet demand. Only 68% of commencements currently complete training.
   - The number in training in the newer high technology areas is as low as 1% in the skilled occupation of communications tradesperson and 1.6% for electronic and office equipment tradespersons.
   - A considerable number of qualified electrotechnology tradespersons leave trade employment for non-trade employment.

3. There is a growing market demand for new skill sets and it is projected that the demand will not be met. Evidence includes:

   - Very low training commencements for new high technology trades such as voice and data communications and electronics as a proportion of the existing workforce. These areas have a high projected employment growth rate.
   - Large numbers of people undertaking training for Certificate IV and higher as non-apprenticeship training pathways.

4. The current rates of employer investment in training is negatively affected by two principle factors:

   - The apprenticeship-training period lasts longer than the business economic cycle. This means that outcomes of a four-year investment in training are not always relevant in a changed economic context nor appropriate to changes in required technological skills.
   - Employers experience high costs during the first half of the training period. By the third or fourth year when returns on training investment should be evident, more than one-third of apprentices have dropped out.

Section 3 Electrotechnology Industry Action Plan

The Action Plan charts the strategy for implementation of the objectives from the Report on Skills Shortages in Electrotechnology. Those objectives are:

- Establishment of a National Task Force of Industry Representatives to take forward Key Actions in the Action Plan.
- Increased marketing and promotion.
- More flexible and alternative training pathways.
- Evaluation of regulatory, legislative and systemic barriers to non-apprenticeships.
- A streamlined response to demand for the new skill sets.

Objective 1
Establish the Task Force

Meeting its first objective, the National Task Force has taken the Key Actions in the Action Plan forward by forming Working Groups to bring together specialists in the Industry to optimise the product of this work and the opportunity created. The members of the Task Force and Working Groups are listed in the Appendix.

The Action Plan gave Secretariat responsibility to the National Electrical and Communications Association (NECA). NECA with ACCI has been the driving force behind the Skills initiative for this sector. NECA has the networks to be able to gather the necessary skill and resources from Industry to undertake the work required of the Action Plan.

Progress reports against each of the Action Plan objectives follow.

Objective 2
Increased Marketing and Promotion

Objective 2.1 Develop a promotion and marketing campaign aimed at increasing the number of people seeking to commence entry-level training in the Electrotechnology trades.

The Skill Shortage report identified areas of possible improvement in the delivery arrangements for both the supply and demand sides of the apprenticeship equation, i.e. job seekers were not attracted to apprenticeships in this Industry and neither were there enough employers offering enough positions. Accordingly, any marketing effort had a number of target audiences requiring separate marketing strategies.

Progress

Progress against this Objective has been significant. The DETYA/NECA Careers Project and this Working Group have complementary objectives. The reasons people did not choose a career in electrotechnology have been well researched, allowing the Careers Project to develop a program to overcome the problem. This involved:

- Cost/benefit analysis of the resolution options.
- Market research.
- Development and distribution of:
  - Print and Presentation materials.
  - Dynamic email to careers teachers.
  - Business card size CD ROMs.
  - Website.

An email contact list for all secondary schools was compiled and the careers teachers contacted. It was the first time most of these people been contacted or had any information about careers in this sector.

The first phase of the website was launched by the Hon. Dr David Kemp at the NECA Apprenticeship Awards, in November 2000. Since then, there have been further improvements in the website, the development of the print and presentation materials, research into an innovative mentoring program and extensive communications with Industry, the education community and the daily media.

The launch of the website by the Minister for Education, Training and Youth Affairs at the NECA Apprenticeship Awards gave the Government and Industry an opportunity to showcase one of the products of the recommendations of the Skills Shortage report. In attendance were young people and their families, employers, educators, Industry, media and government. Making the link between the award winning apprentices and providing information to young people of the opportunities in the Industry is important. It helps young people in their transition between school and work and provides real life models of young people working successfully in the Industry.

Outcomes to Date

In its first months of operation the website has been reviewed extensively and has received many positive responses from educators and Industry, especially from the target audience of secondary school students. Development of the website continues. Phase two is complete and improvements will be implemented progressively.

A postcard with a business card-sized CD ROM attached was sent to each secondary school and other centres providing careers advice, informing them of the launch of the Electrotecfutures website. A dynamic email was also sent, where this was possible. The email was released again to as many schools and career advisers as possible early in first term 2001. Many TAFE colleges and other RTOs have expressed interest in distributing the business card-sized CD ROM to secondary school students to inform them of the Industry and courses available.

The print resource is completed. It is attractive, durable and high-tech and will stand alone on a display shelf in a library or careers centre. The resource is due out second term 2001.

In addition to the website and print material presentation kits for teachers and Industry have been completed. The presentation resource for teachers has been tested with groups of teachers from VET clusters. The VET coordinators, careers advisers and principals at the presentations were mostly unaware of career opportunities in the Industry, as was confirmed in the initial research for the project. The presentations were well received and requests have been received from additional cluster groups to have further presentations. Follow up of this type would be worthwhile to inform careers advisers and teachers of the recent release of the print material and website and to alert them to the current skills shortages and job opportunities in the Industry for students.

The Industry kit has been distributed to NECA offices in each State for comment. The final kit was distributed in May. Both kits comprise a PowerPoint presentation usable as overheads with extensive speech notes and background information and will be available to download from the website.

Research has also been completed into the implementation of a mentoring program. This research has uncovered an innovative and exciting virtual mentoring program that would work well in conjunction with the Electrotecfutures website.

Communication with the Industry and the education community has continued. Articles regarding the program have appeared in print in Industry journals and education magazines. The National radio station Triple J interviewed an electrical apprentice in a program about the Commonwealth Youth Roundtable and, following the NECA Awards evening, two winners of Apprenticeship Awards. Both interviews were run in prime morning time slots. The Industry has been kept informed through monthly newsletters, presentations and updates via email and websites. The support from people in the Industry for the products and the program is high, as the Industry is well aware of the need to attract quality young people.

An Electrotecfutures display was set up at the ELENEX Exhibition in Melbourne in October. This is one of Australia's largest electrical and electronics trade exhibitions for electrical contractors, wholesalers, engineers and all people involved in the electrotechnology Industry. More than 200 companies exhibit at ELENEX. Presentations were also made to the Electrotechnology Task Force meeting, the Department of Education Training and Youth Affairs, the NECA Council, the NECA Communications Council, the NECA Secretariat and Business Administrators, the National Utilities and Electrotechnology ITAB seminar for RTOs, and the VET Cluster Coordinators conference in Victoria. Various contacts are being made at other opportunities and meetings with State Education Department authorities, RTOs, Group Training Companies and Industry representatives.

Overall, the first six months of the program have been productive and exciting. NECA was fortunate to have the assistance of a teacher for 10 weeks from the Industry Participation for Teachers (IPT) Program to assist in the production of materials. This has enhanced the quality of the products and facilitated the message being communicated to a broader audience.

The way forward, next steps:

The challenge is to continue to build on the work completed so far and to ensure that the target audience, young secondary school students, is aware of these resources and the variety of opportunities available in the Industry. We need to evaluate the success of the initiatives outlined above as a basis for continuous improvement.

Objective 2.2 Develop a promotional plan aimed at employers of electrotechnology tradespeople to increase the number of new apprenticeship opportunities.

At first glance, this seemed a relatively easy task because NECA is well positioned to access the suppliers to the Industry who communicate on a daily basis with this target audience. However, it became apparent very quickly that not enough was known about the triggers to the employers' employment decision. Without this knowledge, marketing strategies and resources could be wasted. It was further acknowledged that the projects overall success was dependent on understanding of these dynamics. A Working Group has been established to take this issue forward.

Progress

The Working Group will meet soon to commence work. In the meantime, NECA with DETYA funding have commissioned the National Centre for Vocational Education Research (NCVER) to conduct a survey of employers to find what is the apprentice employment trigger. This will provide the qualitative information necessary for a successful marketing strategy. Note that this work is part of the Cross Industry responsibility with that Working Group using the Electrotechnology employers as a sample group. The project was able to take advantage of NECA's well-structured and comprehensive database and capitalise on the responsiveness of NECA members to the survey.

The primary purpose of the NCVER research project is to identify and analyse the triggers for employers to create New Apprenticeships training places. Specifically the project should identify the reasons employers:

- Make the decision to employ a New Apprentice.
- Keep employing a New Apprentice.
- Employ additional New Apprentices.

By identifying the reasons and processes by which employers make decisions on employing New Apprentices, the potential levers to positively changing employer behaviour can be identified.

There are two main components to the project. The first is to provide information on the current level of demand for apprentices/trainees in the Industry and the potential for expansion in the number of available apprenticeship/traineeship places. The second is to identify the reasons why employers choose, or choose not to train, and the associated policy levers, which would influence employer behaviour.

As part of the project, the NCVER is required to undertake:

- A Literature Review.
- Desk research.
- Qualitative research.
- A quantitative survey.
- A multivariate analysis.

Outcomes to Date

The qualitative study component of the project has been completed. It identified a number of factors that appeared to influence employers' decisions to take on an apprentice. Many of these were also identified in the literature review. The main factors are:

- **Economic conditions and availability of work:** if the economic conditions are perceived to be good and demand for services is growing then employers are more likely to consider engaging an apprentice or an additional apprentice.
- **Type of work:** if work is assured, for example through long term contract, then employers appear more willing to 'commit' to engaging an apprentice.
- **Training culture:** the existence of a training culture has been identified as one of the determinants of employers' willingness to engage apprentices. Ongoing training is quite common in the electrotechnology area 'to keep up with changes in the Industry'. Most employers entered the trade through apprenticeship training.
- **A tradition of training apprentices:** apprenticeships are firmly established as a way of training new tradespeople entering the electrotechnology Industry.
- **Size of the firm:** size was found to be an important factor, with small firms (particularly sole traders) appearing less likely to take on an apprentice than bigger enterprises. This is related to the type of work they undertake, the commitment required in terms of time for training, relative cost of taking on an apprentice versus subcontracting another tradesperson and that some small firms do not want to become any larger.

- **An apparent altruism among employers:** altruism or 'wanting to put something back into the Industry' appears common.
- **The availability of alternative cost effective skilled labour:** it may be more cost effective and more flexible for some employers to hire alternative skilled labour on an hourly or weekly basis rather than to take on an apprentice. They get the skills they need when they need them and do not have to provide supervision or training.

Other important points to come from the qualitative study were that most employers viewed the idea of apprenticeship training positively and as the most appropriate method of training new entrants into the Industry.

In terms of the perceived disadvantages of training apprentices, the cost of training an apprentice, the commitment required, and block-training arrangements were issues raised by employers.

Given the findings to date it is not appropriate to make recommendations regarding policy.

The Way Forward, Next Steps

The major stage of the work - the employer survey - will provide definitive information to allow validated conclusions to be drawn and therefore enable articulation of recommendations for policy and action.

The final report from NCVER will be available at the same time this report is published.

Objectives 3 & 4 Flexible and Alternate Pathways

These objectives cover more flexible and alternative pathways and evaluation of regulatory, legislative or systemic barriers to new apprenticeships. Electrotechnology is a highly regulated sector of Industry. Irrespective of the systemic barriers, regulation imposes a substantial degree of rigidity in the occupational pathways.

As identified by NCVER in its desktop research for the Employer Engagement survey, "the largest number in training by far was in the electrician category…". The regulation imposed on the electrician is substantial. The electrician must be licensed (safety), must work in accordance with technical standard AS3000, and must complete an apprenticeship. There are no alternative entry or exit options. The electrical trade qualification is the feeder qualification for communications cablers, counter staff and sales representatives for manufacturers and wholesalers. These are high volume occupations that do not require a trade qualification but recruiting electricians is the only means of obtaining trained personnel.

There is a substantial opportunity to reduce the undersupply in some occupations and high attrition rate if alternative pathways can be developed and taken up by the Industry.

Two Working Groups will look at the issues of flexibility and pathways.

Progress

Flexibility:

Three barriers to flexibility have been identified:

- Technical and regulatory.
- Systemic training system.
- Training packages.

The electrical regulators, the State Training Authorities with ANTA and the NUEITAB have each undertaken to review their own area of responsibility and where those procedures/requirements create barriers. With this information, the Working Group can then review the relevance of the procedures/requirements/options.

Outcomes To Date

These are very early days but given the willing participation of most of the working party members, there is a real prospect that some traditional sacred cows may be buried by this process and, therefore, flexibility introduced into a previously very rigid system.

Progress

Pathways:

Working Group 5 has the responsibility for developing pathways and then having Industry take them up. Much of the early work is research, particularly into the impact of merging technologies, the effectiveness of non-apprentice pathways and the reasons for attrition.

A resource the Working Group can access is the NECA Group Apprentice companies. NECA has group apprentice companies in five States employing 2000 apprentices. Therefore, the workplace access and occupational structuring opportunities exist and the necessary trials can be piloted. The Working Group has developed a project brief that should, over a period of three years, address all the requirements of the Action Plan for this objective.

The project focuses on offering new opportunities by Group Training Companies (GTCs) to relevant and accessible New Apprenticeships in a broader range of occupations in the electrotechnology Industry. The project will identify and promote innovative alternative training pathways, and new and flexible training arrangements in new and existing markets.

It is a strategic intervention guided by Industry to ensure that the New Apprenticeships in electrotechnology remain relevant to Industry needs, are supported by employers and that the number of commencements in the Industry is appropriate to identified skill needs and can be sustained.

Outcomes To Date

DETYA has funded (through the Group Training Targeted Initiatives Programme) the Working Group proposal to research, identify, promote, implement and evaluate new or alternative training pathways and more flexible training arrangements for the Industry.

The objective will be achieved through:

- Researching, developing and piloting new and innovative training pathways in electrotechnology.
- Identifying and promoting appropriate flexible training arrangements to overcome identified or perceived barriers to entry into training and to attract new entrants.
- Identifying new market areas and developing and implementing a marketing strategy aimed at increasing the opportunities for, and the uptake of, New Apprenticeships in electrotechnology in existing and in new market areas; and
- Promoting and facilitating new strategic networks to support the activities of Group Training Companies.

The Way Forward, Next Steps

For the Action Plan to be effectively implemented flexibility and pathway options must be formed otherwise the requirements for the pace of change in the technology and the market will not be met by the New Apprentice.

Objective 5
New Skill Sets

This objective involves the development of a streamlined response to the demand for new skill sets created by the changing technology. The Task Force has not yet initiated work on this objective. Whilst integral to the success of the project, any initiative would logically follow from significant progress on the other objectives. The Task Force will review this position later this year.

Appendix I
Task Force and Working Groups

The Electrotechnology Task Force

Representatives from Industry and Government participating in the Task Force are:

Simon Gerard (Chair), National Marketing Manager – Gerard Industries Pty Ltd

Peter Glynn, Chief Executive Officer – National Electrical and Communications Association (NECA)

David Madson – Stowe Australia Pty Ltd

Craig Somerville – The Somerville Group

Michael Graham – Automation and Control Electrics

Murray Baker – Anixter Australia

Neville Palmer – Gordyn and Palmer

Clinton Chin – Heyday Group Pty Ltd

Perelle Scales – Department of Education, Training and Youth Affairs (DETYA)

Steve Balzary – Australian Chamber of Commerce and Industry (ACCI)

Peter Hannigan – Australian National Training Authority (ANTA)

Chris Robinson – National Centre for Vocational Education Research (NCVER)

Jessie Borthwick – National Centre for Vocational Education Research (NCVER)

The Working Groups' objectives sometimes overlap, as the initiatives are often complementary. However, the application of the combined expertise from each Working Group becomes apparent as this report develops.

Task Force Working Groups were formed of the following people and organisations:

WG1 Careers

Frances Regan (Chair) - National Electrical and Communications Association

George Spirids – St Bede's College, Mentone

Brian Seymour – Electrical & Electronic Skills Centre

Juergen Scheider – Postal Automation, Siemens Ltd

Jeff Patchell – Connections Magazines

Suzanne Curyer – Career Education Section, DETYA

Simon Gerard – Gerard Industries Pty Ltd

Ellen Fleming – Career Education Assocation of Victoria (CEAV)

Glynn Baker – Apprentice, VICTEC

WG3 Marketing and Promotion

Simon Gerard (Chair) – Gerard Industries Pty Ltd

Murray Baker – Anixter Australia

Michael Graham – Automation and Control Electrics

Graeme Fear – MM Electrical Merchandising

Robin Norris – Hagemeyer Electrical Group

WG4 Regulatory, Legislative and Systemic Issues

Peter Glynn (Chair) – National Electrical and Communications Association

Tony Palladino – National Utilities Electrical Industry Training Advisory Board

Albert Koenig – Office of Energy (Western Australia Electrical Regulator)

John Coburn – State Training Authority (Victoria)

Peter Hannigan – Australian National Training Authority (ANTA)

WG 5 Policy

Steve Balzary (Chair) – Australian Chamber of Commerce and Industry

Peter Glynn – National Electrical and Communications Association

Perelle Scales – Department of Education, Training and Youth Affairs

WG 5 Implementation

Brian Seymour (Chair) – Electrical & Electronic Skills Centre

Tony Palladino – National Utilities Electrical Industry Training Advisory Board

Chris Robinson – National Centre for Vocational Education Research

WG 8 New Skills Sets

Frances Regan (Chair) – National Electrical and Communications Association

Perelle Scales – Department of Education, Training and Youth Affairs

Note:

The CEPU has participated in the Skill Shortage work of the peak committees and Working Groups through all phases of this project until their unexpected resignation on 8 February 2001. A letter has been written to the Union seeking a more detailed explanation of their reasons and policy position.