CASE FOR ENDORSEMENT FOR
UEE ELECTROTECHNOLOGY TRAINING PACKAGE
Release 1.0
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A. ADMINISTRATIVE INFORMATION

Industry Reference Committee submitting the Case for Endorsement

Electrotechnology Industry Reference Committee (IRC)

Skills Service Organisation responsible for preparing the Case for Endorsement

Australian Industry Standards Limited (AIS)

AIS is a Skills Service Organisation (SSO) that undertakes professional activities for the following IRCs:

- Aviation
- Corrections
- Electrotechnology
- ESI Generation
- ESI Transmission, Distribution and Rail
- Gas
- Maritime
- Public Safety
- Rail
- Transport and Logistics
- Water.

AIS also provides technical, operational and secretariat services to enable IRCs to undertake industry engagement and to develop training packages and other products.

This submission puts forward a Case for Endorsement for the UEE Electrotechnology Training Package Release 1.0. It includes the following two units of competency that have been developed in direct response to a request by the Clean Energy Council and the Australian Industry and Skills Committee (AISC).

Title and code for each of the training package components that are submitted for approval

<table>
<thead>
<tr>
<th>Unit of Competency code</th>
<th>Unit of competency title</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEEERE4001</td>
<td>Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems</td>
</tr>
<tr>
<td>UEEERE5001</td>
<td>Design battery storage systems for grid-connected photovoltaic systems</td>
</tr>
</tbody>
</table>

Relevant Case for Change details

Activity Order reference: AISL/TPD/2015–16/002

Activity Start Date: 30 May 2016       Activity Finish Date: 13 March 2017

The AISC requested the preparation and development of two new units of competency to be published in the new UEE Electrotechnology Training Package:

- UEEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems
- UEEERE5001 Design battery storage systems for grid-connected photovoltaic systems.
B. DESCRIPTION OF WORK AND REQUEST FOR APPROVAL

1. Description of work undertaken and why

On behalf of the Electrotechnology IRC, AIS has prepared and developed two new units of competency for the UEE Electrotechnology Training Package Release 1.0 based on two draft units received from the Department with the activity order:

- UEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems
- UEERE5001 Design battery storage systems for grid-connected photovoltaic systems.

These units of competency will be delivered prior to the transition of the UEE11 Electrotechnology Training Package Release 1.5 to the Standards for Training Packages 2012, consequently these two new units of competency will be the only endorsed components in the UEE Electrotechnology Training Package Release 1.0.

To the point that two units of competency are able, these draft endorsed components meet the Funding Agreement, in particular the:

- Standards for Training Packages 2012
- Training Package Development and Endorsement Process Policy
- Training Package Products Policy
- Training Product Development Programme Guidelines.

At the Council of Australian Governments (COAG) Energy Council December 2015 meeting, it was agreed to develop clear and consistent frameworks for the development of battery storage products and to identify and address inefficiencies in their uptake. Battery storage products are being marketed and installed in homes across Australia. Battery safety, including the lack of available training for battery installers, has been identified as a key risk to the successful installation of these products. It is anticipated that these new units will address some of these issues.

Consequently, the fact that the UEE Electrotechnology Training Package Release 1.0 only consists of units and competency and their assessment requirements is an anomaly, which will be addressed as soon as other material is transitioned from the UEE11 Electrotechnology Training Package to the UEE Electrotechnology Training Package.

2. Decision being sought from the AISC

The Case for Endorsement has been developed in accordance with the Training Package Products Policy and the Training Package Development and Endorsement Process Policy, and includes evidence of consultation with states and territories, and evidence that the views of all key stakeholders have been considered.

The Case for Endorsement, approved by the Electrotechnology IRC, is submitted to the AISC through the Department of Education and Training for AISC consideration.
C. EVIDENCE OF INDUSTRY SUPPORT

1. IRC written evidence of support

At the Electrotechnology IRC meeting on the 1st February 2017, the members endorsed the Technical Advisory Committee (TAC) recommendation to put the two battery storage units of competency to the AISC for endorsement. The IRC members support the draft units and anticipated impact of the change on the industry and the VET sector. A summary of the minutes of this meeting are located in the National Repository (VETNet).

2. Evidence of consultation with all relevant stakeholders

During development of the two battery storage units of competency, relevant stakeholders have been kept up to date through all AIS communication channels, including newsletters, emails and website project updates.

AIS implemented communications strategies to ensure relevant stakeholders were consulted by the following communication methods:

- Face-to-face meetings, phone, video/teleconference meetings, email, and stakeholder alerts to relevant electrotechnology industry stakeholders
- IRC member communications to their relevant industry networks using various methods
- Emails to STAs, ITABs and VET regulators providing project information
- Consultation with key stakeholders via face-to-face workshops, phone, email and AIS website
- Emails to stakeholders providing project information (commencement to completion)
- Information about the project, progress updates and draft materials posted on the AIS website
- Two TAC meetings.

See Attachment B: Stakeholder Consultation for a list of organisations and individuals consulted.

3. Evidence that states/territories have been actively engaged and provided advice

State and territory industry stakeholder views were sought and all feedback was presented to TAC members during the development of the two battery storage units of competency. All key stakeholder feedback was considered during the consultation periods and the draft materials were prominent on the AIS website project page for sector-wide consultation. As the subject matter experts in the development of these units of competency, TAC members discussed and considered state/territory constructive feedback received.

There is no component proposed for deletion from the National Register being submitted to the AISC.

4. Advice about alternative approaches explored

TAC members were aware of the minimum standard arrangements that IRCs are to adhere to. The members did discuss and consider future technology and technical ‘plug & play’ innovations. No alternate view or alternative arrangements were proposed to the TAC

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1 Managed as an out of session process. The Electrotechnology IRC will next meet on 14th March 2017.
members by industry stakeholders that would have better suited the needs of their industry or the project outcomes.

5. Report/s by exception

All State Training Authorities (STAs) were supportive of this Case for Endorsement except the Victorian STA who was unable to support the two units of competency proceeding to the AISC as, in this STA’s view, the submission did not meet Standard 1 of the Standards for Training Packages 2012 because the Training Package only consisted of units of competency and their assessment requirements.

It is noted earlier in this submission (Description of work undertaken and why) that submitting a Training Package for endorsement without qualifications (as required by Standard 1) is an anomaly.

Concerns were also raised around the issue of implementation with regards to prerequisite units. While this issue is not pertinent to this Case for Endorsement, it has been noted. Please see Attachment C for copies of the correspondence from the Victorian STA.

Following receipt of the Victorian STA’s response, a meeting was scheduled between AIS and the Victorian STA representatives to address the feedback provided. At this meeting AIS, on behalf of the Electrotechnology IRC, provided explanations to the issues raised.

Following the meeting, the Victorian STA requested an additional two days to further review their position and provide AIS with their final decision. At the end of this period the Victorian STA’s position did not change. The Victorian STA still did not support the Case for Endorsement.

The Electrotechnology IRC was made aware of the issues raised, however their position did not change from when the final two draft units of competency and the Case for Endorsement were presented to them for approval. The Electrotechnology industry requested this Training Package development work be given priority to address inefficiencies in the installation of battery storage products, due to the lack of available training for battery installers. This has been identified as a key risk to the successful installation of these products.

The Electrotechnology IRC therefore is still recommending the two units of competency be approved despite these divergent views.

6. Evidence that key stakeholders (including training providers) are aware of the expected impact of the changes

Key stakeholder views were sought and all feedback was presented to TAC members during the development of these two units of competency. All key stakeholder feedback was considered during the consultation periods and the draft material was prominent on the AIS website project page for broader industry-wide consultation. TAC members discussed and considered feedback received as the subject matter experts in the development of these two units of competency.

There is no training package component proposed for deletion from the National Register being submitted to the AISC.
D. INDUSTRY EXPECTATIONS ABOUT TRAINING DELIVERY

1. Advice about industry’s expectations of training delivery

Industry priorities and expectations

The proposed units have been structured to accommodate the current and future needs of the renewable and sustainable energy sector in the electrotechnology industry and other associated industry sectors.

The requirement for competent workers to work on and around battery storage technologies needs to be met. Industry’s expectations are that training provided by registered training organisations will address this need and individuals will attain skills that are relevant and transferable across industries and enterprises.

Industry’s imperatives and timelines for implementation of the components

Timelines for implementation of the two battery storage units are critical. Battery storage products are currently being marketed and installed in homes across Australia. Battery installer safety, including the lack of accredited training for battery installers, has been identified as a key risk to successful deployment of batteries and market development.

Overarching expectations of industry for the delivery/assessment of the components

The industry expectation is that graduates will be equipped to operate effectively and efficiently in the work environment, and that training providers will focus on providing quality training and assessment that is consistent and meets the outcomes identified in the units.

Reflection of contemporary work organisation and job profiles

Due to the high cost of electricity, the large number of households with solar panels and Australia’s excellent solar resources, Australia is expected to be one of the largest markets for battery storage in the future. According to a report by the Climate Council Australia (2015), coupling solar panels with battery storage could be the cheapest way to get electricity within three years.

The proposed battery storage units reflect the current and future demands for battery storage technology and were developed in response to the need for training in this new technology. Job roles that address energy efficiency at all levels of business are increasingly gaining recognition.

The units will enable workers to access additional skills required to deliver and promote energy-efficiency products and services, including the maintenance and installation of battery storage systems for grid-connected photovoltaic (PV) systems.

Driven by industry’s needs

Industry recognises that battery storage technology has the potential to provide numerous benefits to consumers and the electricity industry as a whole. If the roll-out is well managed, batteries have the potential to contribute to lower network and market pricing while also contributing to system stability.
The increasing costs of energy is a growing concern for micro and small business. The advantages of being energy efficient combined with benefits associated with improving the triple bottom line’s corporate social responsibilities are also seen as a growing need.

**Responding to government broad policy initiatives**

The Commonwealth, for the purposes of increasing compliance, managing incentive payments and monitoring the achievement of renewable and sustainable energy targets, has regulated activities in the renewable energy sector under the Renewable Energy (Electricity) Act 2000 and the Renewable Energy (Electricity) Amendment Act 2010.

At its meeting in December 2015, the COAG Energy Council agreed to develop clear and consistent frameworks for the development of battery storage products and to identify and address inefficiencies to their uptake. The lack of available training for battery installers has been identified as a key risk to the successful installation of these products.

**Supporting movement of skills within and across organisations and sectors**

The two units of competency have been developed to support the implementation of energy efficiencies. They have broad application across organisations and different workplace environments. Consequently, other industry sectors may find the two units applicable to their needs.

**Promoting national and international portability**

The proposed units of competency have national portability. They have been developed nationally and so when endorsed, will be recognised nationally.

**Credit arrangements existing between Training Package qualifications and higher education qualifications**

There is currently no credit transfer arrangement between the proposed units in the UEE Electrotechnology Training Package Release 1.0 and higher education qualifications.

**2. Traineeships and apprenticeships**

The case for endorsement has been developed for two ‘stand-alone’ units of competency, consequently these drafts endorsed components are not suitable for either traineeships or apprenticeships.

**Nominal duration of the traineeship or apprenticeship**

Not relevant.
E. IMPLEMENTATION OF THE NEW TRAINING PACKAGE

1. Advice about how Training Package components meet occupational and licensing requirements

Persons employed in the Electrotechnology industry need to fulfil competency and training requirements as detailed in the regulations relevant to their occupation and state/territory. Persons assessed as complying with these requirements are usually provided with some form of certification by the respective authority. These certificates are required by the relevant state/territory or before a person can work in the occupation covered under the legislation. These certificates are separate to national VET qualifications issued by Registered Training Organisations (RTOs).

Reflecting licensing and regulatory requirements

UEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems

Persons who are competent in this unit will hold an unrestricted electrical licence issued in an Australian State or Territory and be able to install, maintain and fault find battery storage systems for grid-connected photovoltaic systems in accordance with relevant industry standards and regulations.

UEERE5001 Design battery storage systems for grid-connected photovoltaic systems

No licensing, legislative or certification requirements apply to the proposed unit of competency at the time of publication.

2. Implementation issues of note and management strategy

Meeting the diversity of individual and enterprise needs

The two battery storage units outlined in this submission have been developed in consultation with organisations and individuals across a range of industry sectors.

Stakeholders consulted were associated with a range of organisations representing a wide variety of workplace environments. This included those engaged in implementing renewable and sustainable energy programs who provided specific advice and guidance in developing the final draft of the units.

Supporting equitable access and progression of learners

The Equity Review undertaken for the two battery storage units provides evidence that the draft endorsed components meet the requirements of flexibility and functionality. Access to training and mobility within and between industry sectors is supported by industry.

In each unit the assessment requirements state that ‘Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate’.

Supporting learner transition between education sectors

There are no formal transition arrangements between the vocational education and training sector and the higher education sector for the units being submitted to the AISC.
3. Advice about implementation

Implementation of the two battery storage units of competency is critical. Battery storage products are currently being marketed and installed in homes across Australia. Stakeholders support implementation of the two battery storage units to improve identified key risks for:

- Battery storage safety
- Consistent battery storage design
- Accredited training for battery installers.

Supporting implementation across a range of settings


The two battery storage units can be delivered and assessed in the workplace or in a simulated environment. They support implementation across a range of settings by providing guidance on assessment, which encourages assessment in a variety of contexts and applications. The units can be modified for distance-based learners and cultural appropriateness and are suitable for the level of communication, language, literacy and numeracy capabilities of the work being performed.

Supporting sound assessment practice

Industry is committed to sound assessment practice that ensures assessment is fair and reliable and is evidenced by knowledge, skills and work performance that meet the agreed industry standard. This imperative is reinforced by the need to respond to technological change and provide solutions to economy-wide issues.

As a minimum, assessors and assessment must satisfy applicable regulatory requirements, which include the Standards for Registered Training Organisations (current at the time of assessment).

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

The assessment requirements within the proposed units specify:

- Performance evidence
- Knowledge evidence
- Assessment conditions.

Evidence must demonstrate that the learner has successfully met the requirements of the elements and performance criteria in the units.

Public/private training and assessment services

There is currently a limited number of training providers with the capacity to deliver units of competency, skill sets and qualifications in this area.

Training providers wanting to deliver and/or assess against the proposed ‘stand alone’ battery storage units of competency will need to update their scope of registration accordingly. Training providers will be required to restructure training and assessment strategies in line with the new units.

The assessment requirements in the proposed units of competency have been written to assist training providers in assessing the units in a variety of environments and workplace contexts. This may incur additional administrative and compliance costs.
Enterprises
There is no known or identified negative impact.

By incorporating the battery storage units in the new UEE Electrotechnology Training Package Release 1.0, enterprises will have access to personnel with high level, transferable skills across the industry.

Policy environment
Training and VET policies have been addressed during the development process through consultation with State and Territory Training Authorities.

State and Territory Training Authorities, registration and accrediting bodies and training providers will need to ensure that processes implemented are valid and in line with government policy.

Systemic issues
Factors that will ensure the effective implementation of the two battery storage units include valid and reliable assessment by training providers, especially in relation to skills recognition.

Greater capacity in the VET sector to train and assess the two new battery storage units is required. This means that industry, government and VET must collaborate on the development of:
- Industry partnerships for training
- Improved industry training facilities, equipment and resources
- More skilled and experienced trainers and assessors.

There are no anticipated structural barriers to the implementation of the two new battery storage units.

Supporting implementation through compliance with National Register requirements
The endorsed components meet the requirements for the Standards for Training Packages and the National Register i.e. training.gov.au and therefore present no structural barriers at the systems implementation level.

Data on VET delivery and participation
As the proposed battery storage units are new units of competency, there is no current NCVER participant data available.
## F. QUALITY ASSURANCE REPORTS

### 1. Independent Quality Report

**SECTION 1 – DETAILS OF DRAFT TRAINING PACKAGE COMPONENTS**

<table>
<thead>
<tr>
<th>INFORMATION REQUIRED</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Package title and code</td>
<td>UEE Electrotechnology Training Package</td>
</tr>
<tr>
<td>Number of new or revised qualifications</td>
<td>0</td>
</tr>
<tr>
<td>Number of new or revised units</td>
<td>2 new units</td>
</tr>
<tr>
<td>Confirmation that the draft endorsed components</td>
<td>The draft endorsed components meet the Standards for Training Packages 2012.</td>
</tr>
<tr>
<td>Name of panel member completing Quality Report</td>
<td>Tina Berghella, Oggi Consulting Pty Ltd, Quality Assurance Panel Member.</td>
</tr>
<tr>
<td>Statement that the panel member is independent of</td>
<td>Tina Berghella is independent of the Training Package and its components, has not been involved in the development and validation of this Training Package and the Case for Endorsement and has not undertaken the Editorial and Equity Reports.</td>
</tr>
<tr>
<td>development and/or validation activities associated with</td>
<td></td>
</tr>
<tr>
<td>the Case for Endorsement</td>
<td></td>
</tr>
<tr>
<td>has not undertaken the Equity and/or Editorial Report</td>
<td></td>
</tr>
<tr>
<td>is independent of the Training Package or Training Package components being reviewed.</td>
<td></td>
</tr>
<tr>
<td>Date completed</td>
<td>7th February 2017</td>
</tr>
</tbody>
</table>
# SECTION 2 – COMPLIANCE WITH THE STANDARDS FOR TRAINING PACKAGES

<table>
<thead>
<tr>
<th>Standards for Training Packages</th>
<th>Standard met – yes or no</th>
<th>Comments (including any relevant comments from the Equity and Editorial Reports)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard 1</strong> Training Packages consist of the following:</td>
<td>Yes</td>
<td>UEE components for endorsement include 2 units of competency and one quality assured companion volume. The development of the training package was driven by a safety imperative and, to meet that safety imperative, the Activity Order included the development of units only. This development work has preceded the transition of the UEE11 Electrotechnology Training Package Release 1.5 and therefore the submission does not include qualifications or credit arrangements. While this is an anomaly, the circumstances are exceptional due to the safety imperative. Also, it is a temporary anomaly that will be resolved when the UEE11 Electrotechnology Training Package Release 1.5 is transitioned, work that is identified in the National Register. This finding is supported by the Editorial Report, the Equity Report and the Case for Endorsement:</td>
</tr>
<tr>
<td>1. AISC endorsed components:</td>
<td></td>
<td>• The Editorial Report found standard 1 was met stating ‘AIS has advised that the UEE Electrotechnology Training Package only consisting of two units of competency is an anomaly, due to the Commonwealth Government requiring these two units of competency to be fast-tracked as a result of a Council of Australian Governments (COAG) Energy Council December 2015 meeting decision.’</td>
</tr>
<tr>
<td>• units of competency</td>
<td></td>
<td>• In the Equity Report the developer states ‘As the current training package is in the process of transition the Department has agreed to allow the following battery storage units to be progressed and that they will remain as</td>
</tr>
<tr>
<td>• assessment requirements (associated with each unit of competency)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• credit arrangements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. One or more quality assured companion volumes.</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>
standalone units within the newly transitioned training package. This decision has been reached after discussions between the Department and AIS over the last 6 months.  

- The Case for Endorsement also states ‘These units of competency will be delivered prior to the transition of the UEE11 Electrotechnology Training Package Release 1.5 to the Standards for Training Packages 2012, consequently these two new units of competency will be the only endorsed components in the UEE Electrotechnology Training Package Release 1.0.’

| Standard 2 | Training Package developers comply with the AISC Training Package Products Policy. | Yes | UEE components for endorsement comply with policy. This is supported by the Equity Report. |
| Standard 3 | Training Package developers comply with the AISC Training Package Development and Endorsement Process Policy. | Yes | The processes described in the Case for Endorsement are consistent with policy. This is supported by the Equity Report. |
| Standard 4 | Units of competency specify the standards of performance required in the workplace. | Yes | The units clearly specify the standards pf performance required in the workplace. |
| Standard 5 | The structure of units of competency complies with the unit of competency template. | Yes | The structure of the UEE units complies with the template. This is supported by the Editorial Report. |
| Standard 6 | Assessment requirements specify the evidence and required conditions for assessment. | Yes | The assessment requirements clearly specify the performance and knowledge evidence and the conditions of assessment. |
| Standard 7 | Every unit of competency has associated assessment requirements. The structure of assessment requirements complies with the assessment requirements template. | Yes | Each unit has associated assessment requirements and the structure complies with the template. This is supported by the Editorial Report. |
| Standard 8  | Qualifications comply with the Australian Qualifications Framework specification for that qualification type. | NA | No qualifications are included in this submission. |
| Standard 9  | The structure of the information for the Australian Qualifications Framework qualification complies with the qualification template. | NA | No qualifications are included in this submission. |
| Standard 10 | Credit arrangements existing between Training Package qualifications and Higher Education qualifications are listed in a format that complies with the credit arrangements template. | NA | No qualifications are included in this submission. |
| Standard 11 | A quality assured Companion Volume Implementation Guide produced by the Training Package developer is available at the time of endorsement and complies with the Companion Volume Implementation Guide template. | Yes | The companion volume complies with the companion volume implementation guide template. The quality assurance process is documented within the companion volume implementation guide. |
| Standard 12 | Training Package developers produce other quality assured companion volumes to meet the needs of their stakeholders as required. | NA | No additional companion volumes are included in this submission. |
## SECTION 3 – COMMENTS ON HOW THE DRAFT TRAINING PACKAGE COMPONENTS MEET THE QUALITY PRINCIPLES

<table>
<thead>
<tr>
<th>TRAINING PACKAGE QUALITY PRINCIPLES</th>
<th>KEY FEATURES</th>
<th>EXAMPLES OF EVIDENCE</th>
<th>MET YES/NO</th>
<th>COMMENTS/ OTHER EVIDENCE DEMONSTRATED</th>
</tr>
</thead>
</table>
| **1. Reflect identified workforce outcomes** | 1. Driven by industry’s needs | • Changes demonstrate a clear link back to relevant AISC decisions commissioning the work, the IRC Skills Forecast and Proposed Schedule of Work, the National Review Schedule and/or Case for Change, or demonstrate other evidence of industry needs | Yes | The changes demonstrate a clear link back to the AISC’s request to Australian Industry Standards Limited (AIS) to develop two new units of competency for the UEE Electrotechnology Training Package (Activity Order reference: AISL/TPD/2015 – 16/002). The National Register describes this activity as ‘the Electrotechnology IRC will oversee the development of two new battery storage systems units, including the industry consultation and validation necessary to prepare a Case for Endorsement outlining the case for change’ driven by ‘emerging skills need due to rapid technological change’.

2. Compliant and respond to broad government policy initiatives | • Evidence that the training package components respond to Ministers’ policy initiatives, in particular the 2015 training package reforms | Yes | The training package components are responsive to Ministers’ policy initiatives, including the move to the contestable model for the development and maintenance of training packages. This is demonstrated in the Case for Endorsement through adherence to the Training Package Development and Endorsement Process Policy approved by the AISC in November 2016. UEE is also responsive to other broad VET policy initiatives including an industry-led training system, |
3. Reflect contemporary work organisation and job profiles incorporating a future orientation

- Open and inclusive consultation and validation commensurate with scope and impact has been conducted

Yes

The consultation and validation processes described in the Case for Endorsement reflect the scope and impact of the changes.

Stakeholders consulted included the members of the Electrotechnology Industry Reference Committee and the members of the Electrotechnology Advisory Committee. Representatives included enterprises, industry associations, unions, regulators, training providers, and state and territory training authorities.

The developer confirmed that consideration was given to metropolitan, regional and remote geographical areas, small and large employers and organisations with limited representation and that the list of stakeholders provided in the Case for Endorsement is representative of this.

The developer also confirmed that issues raised by industry were recorded in IRC meeting summaries, issues papers and the workplans. Issues identified were recorded in an issue register and the developer is currently in the processes of placing this on their website to conform with process policy.

National communication, consultation and validation mechanisms included a mix of methods commensurate with the complexity of the work. These included face to
<table>
<thead>
<tr>
<th>2. Support portability of skills and competencies including reflecting licensing and regulatory requirements</th>
<th>4. Support movement of skills within and across organisations and sectors</th>
<th>Pathways support movement within and across sectors</th>
<th>Yes</th>
<th>The submission does not include qualifications and therefore the pathways advice in the companion volume is limited to future plans for the training package. No skill sets are included with this submission.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Support portability of skills and competencies including reflecting licensing and regulatory requirements</td>
<td>5. Promote national and international portability</td>
<td>Other national and international standards for skills are considered</td>
<td>Yes</td>
<td>UEE is designed to support portability across Australian jurisdictions.</td>
</tr>
</tbody>
</table>
| 2. Support portability of skills and competencies including reflecting licensing and regulatory requirements | 6. Reflect regulatory requirements and licencing | Solutions to incorporate licensing and regulatory requirements are brokered and there is clear evidence of support from licensing and industry regulatory bodies | Yes | Licensing and regulatory requirements are specified in the application field and the assessment requirements. The unit UEEERE4001 identifies in the application field that, for example, the unit is subject to electrical licensing requirements and there may be variations across jurisdictions. This is supported by advice provided in the companion volume implementation guide with a link to the Essential Performance Capability Requirements for Licensed Electricians. National standards, such as AS/NZS 3000 Electrical Installations, are identified as mandatory resources for assessment in the assessment conditions. The developer confirmed that the following licensing and regulatory bodies were consulted in the development and validation of the draft components:  
  - Clean Energy Council  
  - Energy Safe Victoria |
<p>| 3. Reflect national agreement about the core | 7. Reflect national consensus | Active engagement across industry has sought to achieve a | Yes | The Case for Endorsement confirms that the Electrotechnology Industry Reference Committee agreed to the submission of the draft components for face, telephone and video-conferencing meetings, IRC initiated communications with their networks, emails and website postings. |</p>
<table>
<thead>
<tr>
<th>transferable skills and core job-specific skills required for job roles as identified by industry</th>
<th>national consensus about the advice being provided to the AISC.</th>
<th>endorsement at a meeting held on the 1st February 2017. A link to the minutes from this meeting are provided in the case for endorsement. There was one report by exception submitted by the Victorian STA stating that they cannot support the Case for Endorsement because, in their view, it does not meet Standard 1. The reviewer sighted the correspondence provided in Appendix C of the Case for Endorsement and notes that while it is an anomaly, it is an exceptional circumstance driven by safety imperatives and supported by industry, the editorial review, the equity review and the other states and territories, and was allowed by the Department. Please refer to Standard 1 in this report for more detail.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Recognise convergence and connectivity of skills</td>
<td>• Best use is made of cross-industry and work and participation bank units</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Be flexible to meet the diversity of individual and employer needs, including the capacity to adapt to changing job roles and workplaces</td>
<td>9. Meet the diversity of individual and employer needs</td>
<td>• Provide flexible qualifications that enable application in different contexts</td>
</tr>
<tr>
<td>10. Support equitable access and progression of learners</td>
<td>• Provide multiple entry and exit points</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>• Pre-requisite units of competency are used only when required</td>
<td></td>
</tr>
</tbody>
</table>
5. Facilitate recognition of an individual’s skills and knowledge and support movement between the school, vocational education and higher education sectors

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Support learner transition between education sectors</td>
<td>Provide pathways from entry and preparatory level as appropriate to facilitate movement between schools and VET, from entry level into work, and between VET and higher education qualifications</td>
<td>NA</td>
</tr>
<tr>
<td>12. Support implementation across a range of settings</td>
<td>Industry advice about delivery is provided via a Companion Volume Implementation Guide ready for publication at the same time as the Training Package</td>
<td>Yes</td>
</tr>
</tbody>
</table>

6. Support interpretation by training providers and others through the use of simple, concise language and clear articulation of assessment requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Support sound assessment practice</td>
<td>Units of competency and their associated assessment requirements are clearly written and have consistent breadth and depth</td>
<td>Yes</td>
</tr>
</tbody>
</table>

No qualifications are included in this submission and therefore pathways and credit arrangements are not relevant to this submission.

The units and associated assessment requirements though highly technical are clearly written with consistent breadth and depth. The content is logically sequenced and there are clear links between each unit and its associated assessment requirements. This is supported by the Equity Report.

Several minor queries were raised with the developer during this review, mainly editorial in nature.
| 14. Support implementation | • Compliance with the TGA/National Register requirements for publication  
• Implementation advice is provided in a Companion Volume Implementation Guide that is ready for publication at the same time as the Training Package | Yes | The draft components are consistent with the required templates. This is supported by the Editorial Report. The developer has advised that the updated companion volume implementation guide will be available at the same time as the Training Package. |
2. AIS Declaration

AIS declares that the draft endorsed components meet the requirements of the:

- Standards for Training Packages 2012
- Training Package Development and Endorsement Process Policy
- Training Package Products Policy
- Training Product Development Programme Guidelines.

3. Companion Volume Implementation Guide

AIS and the Electrotechnology IRC confirm that the Companion Volume Implementation Guide is available and has been quality assured.

4. Statement of evidence against the Training Package Quality Principles

The Electrotechnology IRC confirms that evidence against the following quality principles has been obtained as part of the development of training package components listed in this Case for Endorsement:

1. Reflect identified workforce outcomes
2. Support national (and international) portability of skills and competencies, including reflecting licensing and regulatory requirements
3. Reflect national agreement about the core transferable skills and core job-specific skills required for job roles as identified by industry
4. Be flexible to meet the diversity of individual and employer needs, including the capacity to adapt to changing job roles and workplaces
5. Facilitate recognition of an individual’s skills and knowledge, and support movement between the school, vocational education and higher education sectors
6. Support interpretation by training providers and others through the use of simple, concise language and clear articulation of assessment requirements.
G. IMPLEMENTATION OF THE COAG INDUSTRY SKILLS COUNCIL REFORMS TO TRAINING PACKAGES

1. How the decision being sought from the AISC would support the COAG Industry and Skills Council reforms to training packages

Completion of the training package development work and extensive industry consultation with relevant stakeholders confirms that the new draft endorsed units of competency:

- do not duplicate existing unit outcomes from within the VET system
- include information about industry’s expectations in this case for endorsement
- improve unit of competency design to enable individuals to upskill and move easily from one related occupation to another
- improve the efficiency of the training system through the creation of units of competence that can be used by multiple industry sectors.

2. Evidence of completion of the training package development work assigned by the AISC in the Case for Change

At the Electrotechnology IRC meeting on the 1st February 2017, the members endorsed the TAC recommendation to put the two battery storage units of competency to the AISC for endorsement.

3. Evidence that training package component/s are prepared for publication

The Quality Report detailed in Section F provides confirmation that the draft endorsed components meet the Standards for Training Packages 2012. Final draft products can be viewed on the AIS website or VETNet.

See Attachment A: Modification History for Mapping Summary: Units of Competency and Training Package Modification History.

H. A COPY OF THE FULL CONTENT OF THE PROPOSED TRAINING PACKAGE COMPONENTS

The draft endorsed battery storage units to be approved under this Case for Endorsement are:

- UEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems
- UEERE5001 Design battery storage systems for grid-connected photovoltaic systems

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2 Managed as an out of session process. The Electrotechnology IRC will meet on 14th March 2017.
ATTACHMENT A: MODIFICATION HISTORY

The Modification History table is included as an attachment. Reference is made to this information in the Training Package Development and Endorsement Process Policy.

Mapping Summary: Units of Competency

Key: E = equivalent, N = not equivalent, NA = not applicable

Equivalent means the outcomes of old and new units are equivalent.

<table>
<thead>
<tr>
<th>UEE11 Electrotechnology Training Package Release 1.5</th>
<th>UEE Electrotechnology Training Package Release 1.0</th>
<th>Comments</th>
<th>E/N/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>UEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems</td>
<td>New unit of competency</td>
<td>NA</td>
</tr>
<tr>
<td>NA</td>
<td>UEERE5001 Design battery storage systems for grid-connected photovoltaic systems</td>
<td>New unit of competency</td>
<td>NA</td>
</tr>
</tbody>
</table>

Training Package Modification History

<table>
<thead>
<tr>
<th>Release Number</th>
<th>Release Date</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>TBA</td>
<td>This is the first release of this Training Package.</td>
</tr>
</tbody>
</table>
## ATTACHMENT B: STAKEHOLDER CONSULTATION

### Members of the Electrotechnology Industry Reference Committee

<table>
<thead>
<tr>
<th>Representative</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl Copeland</td>
<td>College of Electrical Training</td>
</tr>
<tr>
<td>Kevin O’Shea</td>
<td>Refrigeration Air-conditioning Contractors Association</td>
</tr>
<tr>
<td>Larry Moore</td>
<td>National Electrical &amp; Communications Association</td>
</tr>
<tr>
<td>Malcolm Richards</td>
<td>Master Electricians Australia</td>
</tr>
<tr>
<td>Mark Burgess</td>
<td>Electrical Trades Union</td>
</tr>
<tr>
<td>Maurice Graham</td>
<td>Communications Electrical Plumbing Union</td>
</tr>
<tr>
<td>Neil Fraser</td>
<td>Energy Safe Victoria</td>
</tr>
<tr>
<td>Noel Munkman</td>
<td>Australian Refrigeration Council</td>
</tr>
<tr>
<td>Paul Lowe</td>
<td>NSW TAFE</td>
</tr>
<tr>
<td>Peter Beveridge</td>
<td>Utilities Engineering Electrical Automotive Training Council</td>
</tr>
<tr>
<td>Richard Wawrzon</td>
<td>Institute of Instrumentation Control &amp; Automation</td>
</tr>
<tr>
<td>Sandy Atkins</td>
<td>Clean Energy Council</td>
</tr>
<tr>
<td>Sarah Loveday</td>
<td>Loveday Electrical</td>
</tr>
<tr>
<td>Trevor Moore</td>
<td>Australian Rail Track Corporation</td>
</tr>
</tbody>
</table>

### Members of the Electrotechnology Technical Advisory Committee

<table>
<thead>
<tr>
<th>Representative</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruce McMahon</td>
<td>Ergon Energy</td>
</tr>
<tr>
<td>David Tolliday</td>
<td>Homesglen Institute of TAFE</td>
</tr>
<tr>
<td>Geoff Stapleton</td>
<td>Global Sustainable Energy Solutions</td>
</tr>
<tr>
<td>Glen Morris</td>
<td>Australian Solar Council</td>
</tr>
<tr>
<td>Larry Moore</td>
<td>National Electrical &amp; Communications Association</td>
</tr>
<tr>
<td>Neil Fraser</td>
<td>Electrical Regulatory Authorities Council</td>
</tr>
</tbody>
</table>
### State/Territory Training Authority (STA) contacts

<table>
<thead>
<tr>
<th>Representative</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guy Valentine</td>
<td>Department of Education, Training and Employment Skills Investment and Market Strategy (QLD)</td>
</tr>
<tr>
<td>Liam White</td>
<td>Education &amp; Training, ACT Government (ACT)</td>
</tr>
<tr>
<td>Lisa Barron</td>
<td>Department of Training and Workforce Development (WA)</td>
</tr>
<tr>
<td>Lucinda Pita</td>
<td>Department of Training and Workforce Development (WA)</td>
</tr>
<tr>
<td>Dianne Fong</td>
<td>Department of Trade, Business and Innovation (NT)</td>
</tr>
<tr>
<td>Marina Borrello</td>
<td>Skills SA - Department of State Development (SA)</td>
</tr>
<tr>
<td>Lee Carter</td>
<td>Department of Education and Training (VIC)</td>
</tr>
<tr>
<td>Susan Bayly-Stark</td>
<td>Skills Tasmania, Department of State Growth (TAS)</td>
</tr>
<tr>
<td>Vera Kostadinovska</td>
<td>Department of Industry/State Training Services (NSW)</td>
</tr>
</tbody>
</table>

In addition to the above list, approximately 200 Electrotechnology and VET stakeholders were also contacted, informed about the project, and invited to comment on draft units at various stages of the project via AIS targeted email alerts and phone enquiries.
Hi Jason,

Further to our initial response sent on 28 February 2017, I would like to confirm our position. Jess in my team has already provided feedback on the content of the units, which despite some areas that could be improved, are by and large suitable for AISC consideration. In any other circumstance, I would offer my support for these units.

However, and as we have discussed via teleconference, it is our view that this Case for Endorsement does not meet Standard 1 of the Standards for Training Packages 2012. As a result, I cannot support this Case for Endorsement.

The fundamental issue is that AIS (at the direction of the Commonwealth) is seeking to start a new Training Package (UEE) with two orphan units. In our view this does not satisfy Standard 1 which states:

**Standard 1:** Training Packages consist of the following:

1. NSSC endorsed components:
   - units of competency;
   - assessment requirements (associated with each unit of competency);
   - qualifications; and
   - credit arrangements.
2. One or more quality assured companion volumes.

I do not believe this Standard allows a new Training Package to be initiated with individual units or Skill Sets. This was certainly the position of the former NSSC, as I recall IBSA was advised that it could not initiate either FSK or TAE Training Packages without at least 1 qualification.

Aside from the compliance question, there are a number of implementation issues posed by this CfE.

1. The units are unlikely to meet the packaging rules of other qualifications. If other qualifications state that electives must be selected where they were “first packaged at” a particular AQF level, then a strict reading of this means that these units are unable to be selected because they have not been packaged at all.
2. In addition, I believe there is question here as to how VET regulators will treat these units, given the issue raised above, and the dubious compliance with Standard 1. This is something that should be discussed with the three VET regulators.
3. Releasing these units as orphan units is likely to prevent Victoria (and possibly other jurisdictions) from being able to immediately fund delivery because the units are not packaged into a qualification until such time as they meet the packaging rules of another qualifications and can be imported. The units can be delivered via fee-for-service once RTOs have them on scope, but surely the preference is for public funding to be made available.

Finally, there is a further question around Standard 5, as the units do not list all the pre-requisite units (i.e. the full pre-requisite chain) in which the candidate must be deemed competent prior to the determination of competency in this unit. I accept that this aspect is
more open to interpretation in terms of its compliance, however it does create a situation where students are not readily able to see the extent of training required prior to entry into these units.

I understand you intend to submit this Case for Endorsement to the Commonwealth today, so I would appreciate you conveying our concerns as described above.

Regards,
Lee

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E: carter.lee.r@edumail.vic.gov.au
W: www.education.vic.gov.au
Good afternoon Jason,

Thank you for the opportunity to provide feedback on the Battery Storage Units of Competency, Case for Endorsement & Companion Volume. The Curriculum Maintenance Manager, George Adda, and the TPU team have reviewed the documentation in order to provide the below comments. We also note that this feedback extends on the comments we supplied last year (attached).

At this point, with the information available to us, unfortunately we are unable to support these 2 units proceeding via a Case for Endorsement to the AISC. This is due to the following reasons:

• Rationale is absent around which qualification/s or skills set these 2 UoCs will be packaged into, noting that skill sets must contribute to a qualification.
• The reason for their orphan status has not been made available.
• It is our understanding that 2 orphan units should not form the basis of the new UEE TP.
• The pre-requisite chain for both Units that is not properly addressed or transparent.
• It is apparent that one of the pre-requisite chains of 15 units is an entry requirement but has not been properly addressed.
• Issues relating to Foundation Skills not being explicit within the PCs as stated; and, in some instances, Performance Evidence is not properly reflected in the Knowledge Evidence.

Please see additional comments below.

**Overarching comments**

It should be noted from a subsidy perspective, that these units of competency will not attract funding in Victoria until such a time they are packaged into an endorsed qualification that is deemed eligible on the *Skills First* funded course list.

**Case for Endorsement**

It is noted that these units are yet to have been packaged into a qualification/s and are proposed at this stage for stand-alone delivery. As indicated above we are interested to know in which qualification/s these units may be packaged and at what AQF level. For the implementation of these units, the challenge anticipated for Victorian RTOs and learners alike is that under *Skills First*, subsidies are attributed to eligible qualifications which means, unit delivery would come under fee for service. As each of these units require 60-80 hours of training, in addition to respective pre-requisite requirements (in particular for UEEE5001), the time commitment and costs associated with these units are likely to impact uptake of these products in Victoria.

Victoria at this point is not inclined to support a new Training Package, UEE, that consists of 2 orphan units. To consider this action, further advice would be required around the reasons and benefits for the proposed activity.

**Knowledge Evidence**
The Performance Evidence requires that learners document their activities, however the type of documentation required appears to be absent from the unit content. It is suggested that this criteria be clarified in the Knowledge Evidence of each unit.

**Foundation Skills**

As these units are angled toward learners with relevant industry experience, it is suggested that context be included in the foundation skills to specify employment skills that are not explicit in the performance criteria. This would provide for clarity in assessing learner suitability and reduce the scope of interpretation that exists in the current context statement.

**Specific unit feedback**

**UEERE5001 - Design battery storage systems for grid- connected photovoltaic systems**

**Performance Evidence**

The performance evidence indicates that the learner is to be assessed twice on two separate designs. In practice, it is viewed that this will require a substantial amount of assessment given the nature of this type of design. If the intent is to have the candidate complete at least two designs during the course, it is suggested that this statement be placed in the Knowledge Evidence rather than the Performance Evidence. This could then be used as part of the evidence in the overall assessment where one final design will be assessed and would sufficiently evaluate learner competence in this context.

**Pre-requisites**

The prerequisite chains that exist are not displayed in the unit descriptor. From the declared prerequisite unit UEENEEK135A, our analysis has identified up to 280 hours of training required prior to commence this unit. Bearing in mind the additional 60-80 hours for completion of UEERE5001, this would appear a substantial consideration for learners that one would expect be made clear in the unit documentation. It may also support implementation to highlight specific qualification/s that could satisfy the prerequisite requirements of this unit, if applicable.

To illustrate, UEERE5001 consists of the following prerequisite chain of 9 units, totalling 280 hours:

- **UEENEEK135A (60hrs)** - declared in the document. This unit consists of the following prerequisite:
  - UEENEEK125A which consists of the following prerequisites:
    1. UEENEEE104A*
    2. UEENEEE137A*
    3. UEENEEE108A*
    - **UEENEEE101A**

**UEERE4001 Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems**

**Elements and performance criteria (PC)**
There are a few instances throughout the elements and PC that state ‘...installation, maintenance or fault finding’. We believe this should be ‘and’ not ‘or’, given the unit covers equips the learner for all three scenarios and is consistent with the unit title.

**Pre-requisites**

As with UEEE5001, the prerequisite chain is not complete in the unit descriptor. Noting that the Application section prescribes for the learner to hold ‘an unrestricted electrical licence’ and our analysis indicates that attainment of UEE30811 Certificate III Electrotechnology Electrician satisfies the 15 prerequisite units, for clarity, it is recommended that the true extent of the requirements to undertake this unit be listed in the unit content.

We hope that these issues can be addressed so that we can support the progression of this important work.

Should you have any questions regarding above, please don’t hesitate to advise.

Kind regards,

Jess

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Good afternoon Jason,

Thank you for the opportunity to provide feedback on the Battery Storage Systems units of competency UEERE4008X and UEERE5006X.

Overall the content of these proposed units is supported by Victoria as it is our view that the elements, performance criteria and unit outcomes meet industry requirements. However, there are some key elements of the unit composition and titling covered below, with changes tracked in the attached documents, that we suggest be considered for inclusion in the final review of each unit. You will note that these recommendations are mainly aimed to support end user application of the product by synthesising similar criteria and simplifying elements and performance criteria.

Key areas of feedback:

- Refinements to the unit titles are suggested i.e. removal of ‘fault find’ which is implied throughout and duplicated ‘systems’ in UEERT5006X and capitalisation conventions.
- Element titles could be more succinct i.e. UEERE4008X Element 1- Plan for the installation and maintenance of battery storage systems for grid connect PV arrangements. Remove - for grid connect PV arrangements in each statement. It is stated in the title, the application of the unit and referred throughout the PCs.
- Combine similar performance criteria through abbreviation for the below PCs:
  - UEERE4008X:
    - PCs 2.2, 2.3 and 2.4 to Battery storage components, inverters and charge controllers are installed in accordance with system design documentation, relevant industry standards, regulations and manufacturers’ specifications.
    - PCs 2.8 and 2.9 to Maintenance is performed by servicing or replacing items using the relevant maintenance checklist.
  - UEERE5006X
    - PCs 1.8 and 1.9 to Relevant electricity tariffs and solar resource data are incorporated in the design of the system

As a broader comment concerning the UEE Training Package, we note the majority of the elements in the qualifications consist of plan the task, do the task and complete the task. To promote creativity and innovation amongst learners, it is suggested that the use of verbs in the elements such as specify, implement, troubleshoot be considered as part of revisions to the product which will also emphasise the employability skills inherent to each competency.

A few suggested edits are provided in the attachments for your consideration.

Happy to discuss.

Regards,

Lee

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W: www.education.vic.gov.au