



Australian Government

MEM23148 Develop energy management solutions

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23148A Develop energy management solutions.

Application

This unit of competency defines the skills and knowledge required to develop energy management solutions and includes performing a complete energy audit of a large commercial or industrial building and making recommendations on reducing energy usage.

It applies to heating, ventilation, air conditioning and refrigeration (HVACR) technicians, who are required to investigate, advise and report on energy management solutions. As part of this work the technician can be required to conduct complete energy audits and model and validate solutions to improve energy use.

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

Pre-requisite Unit

MEM23004 Apply technical mathematics

MEM23006 Apply fluid and thermodynamics principles in engineering

MEM23142 Determine psychrometric processes and system performance

MEM23143 Apply energy management principles

MEM23154 Analyse and service HVACR systems

Competency Field

Engineering science

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for an energy audit	1.1 Obtain and implement work health and safety (WHS) and environmental requirements for the work area 1.2 Determine procedure for completing an effective building energy audit 1.3 Collect data from building distribution diagrams and metering

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	equipment 1.4 Ensure appropriate test equipment is maintained and is used in a correct manner 1.5 Consult with appropriate personnel to ensure that work is coordinated effectively with others 1.6 Obtain equipment and resources needed for the task in accordance with organisational procedures
2. Analyse data and prepare energy use profiles	2.1 Select suitable energy simulation program for energy audit analysis using appropriate resources 2.2 Analyse test data taking into consideration seasonal effects 2.3 Prepare building energy use profiles using appropriate equipment 2.4 Identify major energy consuming components, their likely profiles and total consumption using organisational procedures
3. Model solutions	3.1 Determine significant inputs of the simulated results 3.2 Model alternate energy profiles using appropriate equipment to evaluate various components of a building 3.3 Provide solutions to unplanned situations consistent with organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

WHS requirements	• legislation • protective equipment
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include:	• material safety management systems • hazardous substances and dangerous goods code • local safe operation procedures • awards provisions.
Environmental requirements include:	• relevant legislation, regulations and codes • correct handling and disposal of liquid and solid waste • elimination or minimisation of gas, fume, vapour and smoke emissions, including fugitive emissions • dust elimination, minimisation and control • minimisation of energy and water use • elimination or control of excessive noise • use and recycling of refrigerants.
Appropriate personnel include:	• supervisor, leading hand, foreman or manager • engineer • technician • trainer or mentor • team member • customer.
Resources include:	• energy management software • data from suitable building energy management systems • seasonal variation data.
Organisational procedures include:	• the use of tools and equipment • instructions, including job sheets, plans, drawings and designs • reporting and communication • manufacturer specifications • operational procedures • industry standards.
Equipment includes:	• computer workstation and software, either stand alone or networked • test apparatus • appropriate tools of trade, equipment and materials.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM23148A Develop energy management solutions.

Links

Companion Volume Implementation Guides are available on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>