



Australian Government

Department of Education, Employment and Workplace Relations

CPPHSA5006A Promote low and zero carbon energy technologies in residential buildings

Release: 1

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Modification History

Version	Comments
1	This version first released with CPP07 Property Services Training Package Version 11.

Unit Descriptor

This unit of competency specifies the outcomes required to promote the use of low and zero carbon energy technologies in residential buildings. It includes assessing the potential for use, and advising on the selection of low and zero carbon energy technologies.

Application of the Unit

This unit of competency supports the work of Nationwide House Energy Rating Scheme (NatHERS) assessors engaged in assessing, and making recommendations for improving, the thermal performance of planned and existing residential buildings.

Licensing/Regulatory Information

In some jurisdictions, this unit of competency may form part of the accreditation, licensing, legislative, regulatory or certification requirements for NatHERS assessors.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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| 1 | Assess potential for use of low and zero carbon technologies. | 1.1 | Needs, circumstances and motivations of client regarding the use of <i>low and zero carbon energy technologies</i> are identified in line with organisational procedures. |
| | | 1.2 | Site inspection is planned to determine viability of using low and zero carbon energy technologies in line with organisational procedures. |
| | | 1.3 | Potential <i>hazards</i> associated with conducting a site inspection are identified to ensure risks are suitably managed. |
| | | 1.4 | <i>Tools, equipment and other requirements</i> for site inspection are identified and arrangements are made to ensure their availability on day of inspection. |
| | | 1.5 | <i>Information required from client</i> prior to conducting site inspection is obtained in line with organisational requirements. |
| | | 1.6 | <i>Details of site inspection</i> are agreed with client prior to inspection being conducted. |
| | | 1.7 | Site inspection is conducted and information required for determining viability of using low and zero carbon energy technologies is gathered in line with organisational procedures. |
| | | 1.8 | Potential low and zero carbon energy technologies are identified taking into account client's needs and outcomes of site inspection. |

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| 2 | Advise client on selection of low and zero carbon technologies. | 2.1 | Potential <i>opportunities and constraints</i> regarding the use of low and zero carbon energy technologies are identified. |
| | | 2.2 | Relevant low and zero carbon energy technologies are assessed to determine which is likely to meet client requirements and property characteristics. |
| | | 2.3 | Objective and impartial recommendations regarding appropriate low and zero carbon energy technologies are provided to client in line with organisational procedures. |
| | | 2.4 | Clients are referred to other sources of information, advice and expertise, where necessary, in line with organisational procedures. |
| | | 2.5 | Referral fees or other benefits from product and service suppliers are disclosed to client in line with legislative and organisational requirements. |
| | | 2.6 | Recommendations are discussed with client and opportunities are provided for client to ask questions and seek clarification, where necessary, in line with organisational requirements. |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to interact with clients, staff and other stakeholders from diverse social, economic and cultural backgrounds in an ethical manner
- data analysis skills to interpret data relating to energy use and carbon emissions of different technologies
- decision-making and problem-solving skills to advise clients on appropriateness of different low and zero carbon energy technologies
- learning skills to maintain and update own knowledge of low and zero carbon energy technologies through catalogues and other industry information
- literacy skills to read and interpret a variety of texts, including legislation, regulations and product information
- numeracy skills to interpret data relating to the cost, energy and carbon emissions of low and zero carbon energy technologies
- planning, organising and scheduling skills to organise site and property inspections to assess viability of use of low and zero carbon energy technologies
- research skills to identify, locate and evaluate reports on low and zero carbon energy technologies
- technology skills to:
 - operate computer equipment and peripherals
 - use relevant software, hardware and equipment to conduct online research and access catalogues and other information on low and zero carbon energy technologies
- time-management skills to efficiently and effectively plan and implement meetings with clients and other work activities

Required knowledge

- purpose and key features relating to thermal performance and energy efficiency in the National Construction Code
- commonwealth, state and territory, and local government legislation and regulations impacting on identifying, using and providing advice on energy using appliances and equipment relating to:
 - building and construction
 - building thermal performance
 - consumer protection, fair trading and trade practices
 - environment protection
 - installation of appliances and equipment

- occupational licensing
- public health and safety
- work health and safety
- energy and power:
 - terminology:
 - energy
 - energy efficiency
 - kilowatt hours
 - joules
 - megajoules
 - power
 - primary energy source
 - watts
 - units of measurement
 - uses, cost and environmental impact of energy in residential buildings
- greenhouse gas emissions:
 - relationship between building design, selection of technologies, energy consumption and greenhouse gas emissions
 - ways of reducing greenhouse gas emissions through use of zero and low carbon technologies
- installation standards for energy technologies
- low and zero carbon energy technologies:
 - biomass
 - ground cooling
 - ground source heat pumps
 - mini hydro systems
 - passive solar design
 - small combined heat and power systems
 - solar photovoltaics
 - solar thermal
 - wind power
- passive energy design:
 - benefits of passive design
 - principles of passive design
 - relationship between passive design, energy consumption and greenhouse gas emissions
- risk and hazard identification procedures
- zero carbon and carbon neutral technologies

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency could be assessed by demonstrating the promotion to clients of low and zero carbon energy technologies in residential buildings by assessing the potential for use and advising on the selection of low and zero carbon energy technologies.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person should demonstrate the ability to: • assess the potential for use of low and zero carbon energy technologies in residential buildings • conduct a site inspection as part of assessing the potential for the use of low and zero carbon energy technologies in residential buildings • identify potential opportunities and constraints regarding the use of low and zero carbon energy technologies in residential buildings • advise clients on the selection and use of low and zero carbon energy technologies.
Context of and specific resources for assessment	Assessment of this unit: • must be in the context of the work environment • may be conducted in an off-site context, provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills • must meet relevant compliance requirements. Resource implications for assessment include: • relevant codes, standards and government regulations. • technical reference library with current publications on low and zero carbon energy technologies.
Method of assessment	Assessment for this unit must verify the practical application of the required skills and knowledge, using one or more of the following methods: • written and/or oral assessment • observed, documented and/or first-hand testimonial evidence of the candidate demonstrating the promotion to clients of low and zero carbon energy technologies in residential buildings by: • assessing the potential for use • advising on the selection of low and zero carbon energy technologies.

Guidance information for assessment	This unit could be assessed on its own or in combination with other units relevant to the job function. Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support. Assessment processes and techniques should, as far as is practical, take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.
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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Low and zero carbon energy technologies</i> may include:	• biomass • ground cooling • ground source heat pumps • mini hydro systems • passive solar design • small combined heat and power systems • solar photovoltaics • solar thermal • wind power.
<i>Hazards</i> may include:	• confined spaces • electricity • fire • harassment, bullying and/or violence involving co-workers or customers • hazardous substances: • asbestos • biological products • blood products • broken metal • chemicals • electrical wiring • fibres • fumes

	• gases • glass • insulation • leaking containers • oil and petrol • heat: • burns • scalds • manual handling: • carrying • lifting • pulling • pushing • machinery, including powered and non-powered equipment • skin penetrating injuries: • knives • sharps • syringes and needles • unaccompanied minors • waste • work environment: • access • animals • dust • floor surfaces • lighting • noise • passive smoking • temperature extremes • trips and falls • ventilation • working alone • working at heights.
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Tools, equipment and other requirements may include:	• calculator • clipboard • collection containers • commercial ladder • compass • digital camera • personal protective equipment (PPE): • dust masks • eye protection • gloves • headwear • overalls • safety shoes and workboots • portable computer equipment • reference manuals • tape measure • thermometer • timer • torch.
Information required from client may include:	• house construction details: • age • floor area • insulation • materials • number of storeys • household member: • age • number.
Details of site inspection may include:	• address and postcode of residence • assessor name and contact details • date and time of inspection • duration of inspection • responsible adult to be at site during inspection.
Opportunities and constraints may include:	• design and siting of building • grants and incentives • grid connection • planning policy • regulations: • building • electrical

	• gas • planning • plumbing • utilities • suitability of technology to client needs and energy use.
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Unit Sector(s)

Home sustainability assessment

Custom Content Section

Not applicable.