



Australian Government

UEERE5001 Design battery storage systems for grid-connected photovoltaic systems

Release: 1

UEERE5001 Design battery storage systems for grid-connected photovoltaic systems

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to design battery storage systems for grid-connected photovoltaic (PV) systems.

This unit applies to a person with a sound knowledge of the components and different system configurations of battery storage systems for grid-connected PV systems and suitable energy management strategies that can be applied to the site where a system can be installed.

A person competent in this unit will be able to design a system, which includes calculating and selecting the correct sized equipment so the system output performance meets the client specific requirements within the guidelines of relevant industry standards, regulations and manufacturer requirements.

The unit involves designing a system taking into consideration all necessary work health and safety requirements relevant for the selected system and documenting the design including all calculations, equipment specifications and layouts.

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

Pre-requisite Unit

UEENEEK135A Design grid connected photovoltaic power supply systems

Competency Field

Renewable and Sustainable Energy

Unit Sector

Electrotechnology

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | |
|---|-------------|--|
| 1 Plan the design of battery storage systems for grid-connected photovoltaic systems | 1.1 | Available components are identified and the different system configurations are applied to system design planning |
| | 1.2 | Hazards associated with battery storage systems for grid-connected PV systems are determined and appropriate risk control measures are developed |
| | 1.3 | Electrical load/s to be supplied from the battery storage system are identified |
| | 1.4 | Energy assessments are undertaken using appropriate tools including data logging tools and/or energy assessment forms |
| | 1.5 | Site is assessed to determine feasibility, equipment location and any required switchboard modification |
| | 1.6 | Energy management strategies are applied to produce an energy management plan |
| | 1.7 | Relevant industry standards, building codes, regulations and manufacturer requirements are applied to system design planning |
| | 1.8 | Relevant electricity tariffs are incorporated in the system design |
| | 1.9 | Solar resource data is applied in the system design |
| | 1.10 | Client situation, budget and desired outcomes are incorporated in the system design |
| 2 Design battery storage systems for grid-connected photovoltaic systems | 2.1 | Suitable system configurations are selected to meet client requirements |
| | 2.2 | System efficiencies are applied to system designs and overall system yield for different system configurations is determined |
| | 2.3 | Type and capacity of inverter/s to meet performance requirements are determined |
| | 2.4 | Type and capacity of battery storage to meet performance requirements are determined |
| | 2.5 | Type and capacity of charge controller/s to meet performance requirements are determined |

- | | | |
|---|------------|---|
| | 2.6 | Capacity of PV array to meet performance requirements is determined |
| | 2.7 | Merits of alternate configurations including maintenance requirements are analysed and the most appropriate system design is selected |
| | 2.8 | Location of each item of equipment is determined |
| | 2.9 | Size of cables and ratings of protection and isolations devices are determined |
| 3 Document the design of battery storage systems for grid-connected photovoltaic systems | 3.1 | Identified hazards are listed and appropriate risk control methods are specified |
| | 3.2 | Required items of equipment and system components are identified and listed |
| | 3.3 | System operating parameters are specified |
| | 3.4 | Electrical systems schematic/s and equipment location plan/s, inclusive of signage, are produced |
| | 3.5 | System cost and performance are documented |
| | 3.6 | Maintenance, client and installer documentation are produced |

Foundation Skills

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

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This is a new unit – no equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>