

WM9SC-15 De-commissioning and Energy Storage

26/27

Department

WMG

Level

Taught Postgraduate Level

Module leader

Muhammad Rashid

Credit value

15

Module duration

4 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module will provide students with an advanced and comprehensive knowledge and understanding of the primary renewable energy sector technologies specifically de-commissioning and energy storage within global energy system. In addition to a theoretical perspective, topics will also be covered from a practical, and sector relevant, viewpoint, enabling graduates of the programme to have the necessary skills set to rapidly be able to contribute effectively to the design, development, and adoption of decommissioning processes and energy storage technologies. Providing the opportunity to accelerate their professional development as experts in this sector.

Module aims

The principal aim of this module is to provide students with sufficient knowledge, understanding and analytical skills to underpin their professional development as they progress towards becoming an expert professional in one or more of the current core technology disciplines of renewable energy and in this module specifically decommissioning and energy storage. This module will typically focus on the current technologies available but will also explore emerging technologies under development.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Health and safety requirements for decommissioning an energy related facility

Legal requirements for Health and Safety:

Safe System of Work,

Health and Safety at Work Act 1974,

Site specific rules:

Risk Assessment,

As Low As Reasonably Practicable, method statements,

Lift Plans,

Manual handling assessments,

Safety cases,

Hazard analysis.

Planning and optimisation of the support services required for the dismantling and decommissioning of plant:

Plan procedures including operating plan and contingency plans for failure in any of the support services.

Roles and responsibilities associated with plant decommissioning:

Contractors Techniques used to dismantle and decommission industrial plant:

Procedures used for plant decontamination:

Procedures used for land decontamination:

Processes and procedures related to Chemical Energy Storage

Processes and procedures related to Potential Energy Storage

Processes and procedures related to Mechanical Energy Storage

Learning outcomes

By the end of the module, students should be able to:

- Critically analyse the philosophy and operations of decommissioning as a process within the energy sector both on a micro and macro scale.
- Review the planning, health & safety requirements and management processes to undertake a decommissioning programme including relevant Health and Safety Legislation.
- Critically analyse the philosophy and operations of energy storage as a resource within the energy sector both on a micro and macro scale.
- Propose a relevant synthesised solution to an energy challenge providing a relevant

application for energy storage

- Critically evaluate the strengths, weaknesses, opportunities and threats of implementing comprehensive decommissioning processes

Indicative reading list

[Reading lists can be found in Talis](#)

[Specific reading list for the module](#)

Subject specific skills

Interpretation of energy engineering data
Energy performance calculations
Decommissioning processes and procedures
Health and Safety processes
Analysis of Legislation and regulations
Analysis of various energy storage systems
Energy storage technology selection
Energy Storage efficiency and effectiveness

Transferable skills

Evaluation and judgement
Communication
Critical thinking
Decision making
Systems thinking
Evaluation and judgement
Problem solving
Presentation of highly complex technical data.

Study

Study time

Type	Required
Lectures	15 sessions of 1 hour (10%)
Tutorials	15 sessions of 1 hour (10%)
Online learning (independent)	15 sessions of 1 hour (10%)
Private study	45 hours (30%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

Students receive additional readings and workbooks to support their learning in the module. This enables students to build their foundational knowledge or go deeper into the application and evaluation of knowledge presented in the module.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Assessment component			
Individual Written Report	70%	42 hours	Yes (extension)
Individual report exploring the concepts and applications of a facility de-commissioning process.			
Reassessment component			
Individual Written Report			No
Individual report exploring the concepts and applications of a facility de-commissioning process.			
Assessment component			
Assessment 2 - Individual Presentation	30%	18 hours	No
An Individual Presentation exploring the principles and applications of various formats of energy storage			
Reassessment component			
Assessment 2 - Resubmission - Written Report			No

**Weighting Study time Eligible for self-
certification**

An Individual Report exploring the principles and applications of various formats of energy storage

Feedback on assessment

Students will be provided individual and class feedback and feed-forward on their assessments.

Availability

There is currently no information about the courses for which this module is core or optional.