

POSTGRADUATE DIPLOMA IN ENERGY INNOVATION FOR ZERO CARBON

Overview

NFQ Level 9, Major Award

The Postgraduate Diploma in Energy Innovation for Zero Carbon is a full-time programme delivered in a blended format over a period of 12 months from the date of registration, across Semesters 1 (September to December), 2 (January to May) and 3 (June to August).

Each module includes a number of lectures that students are recommended to attend. However, all lectures will be recorded for flexibility to enable students to view at any time on Canvas.

There are two modules that require in-class attendance and cannot be done by following recordings (MG6901 Developing an Entrepreneurial Mindshift in Semester 1 and NE6214 Architectural Design for Renewable Energy Projects in Semester 2), both requiring attendance to 3-hour workshops during 8 of the 12 weeks of term.

Postgraduate Certificate in Offshore Renewable Energy

A student who successfully completes and is awarded the **Postgraduate Certificate in Offshore Renewable Energy** and Innovation may apply for the Postgraduate Diploma in Energy Innovation for Zero Carbon.

Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

Programme Requirements

Code	Title	Credits
Students take 60 credits as follows:		
<i>Core Modules</i>		
MG6901	Developing an Entrepreneurial Mindshift	
NE6201	Wind Energy	
NE6202	Energy Innovation	
NE6204	Photovoltaic Systems	
NE6205	Data Analysis for Energy Engineering Projects	
NE6211	Offshore Wind Energy	
NE6212	Clean Energy Futures	
NE6213	Transportation and Energy	
NE6214	Architectural Design for Renewable Energy Projects	
NE6215	Progressing Toward Sustainable Industry	
NE6216	Sustainability, Bioenergy and Circular Economy Systems	
NE6221	Work Based Integrated Learning in Energy Engineering	
Total Credits		0

Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

Programme Learning Outcomes

Programme Learning Outcomes for Postgraduate Diploma in Energy Innovation for Zero Carbon (NFQ Level 9, Major Award)

On successful completion of this programme, students should be able to:

- Demonstrate an in-depth understanding of what zero carbon means for the entire energy system (electricity, industry, transport, buildings).
- Demonstrate knowledge of a range of analytical methodologies used to quantify renewable energy potential for different economic sectors, regions and countries.
- Describe the challenges, opportunities and research frontier for energy innovation (sector, system and technology) in achieving a zero carbon energy system.
- Outline recent scientific and engineering developments relevant to onshore wind, offshore wind energy generation and photovoltaic energy systems.
- Analyse, calculate and design the transport requirements for a specific situation based on minimisation of energy use.
- Apply a range of energy systems modelling and data analysis techniques to solve energy system problems.
- Describe the 10 Rs of circular economy thinking and apply the 10 Rs to identify measures to reduce GHG emissions from industry considering each Scope (1, 2, 3).
- Demonstrate knowledge and understanding of the role, mindset and potential for entrepreneurship in advancing energy innovation for zero carbon.
- Describe the role of policy, planning and design in accelerating renewable energy deployment for a zero carbon energy system.