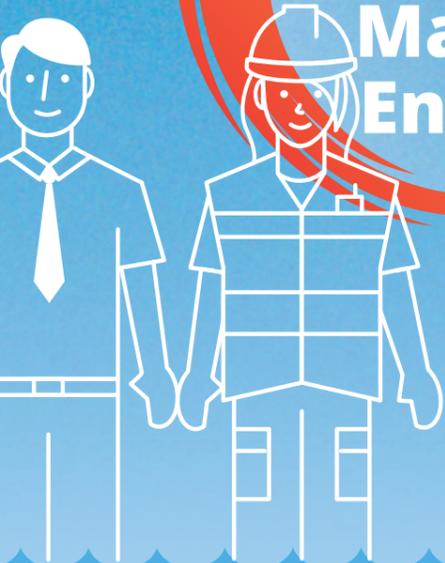


An ocean of opportunity

Your Guide to Careers in Marine Energy



The waters around Pembrokeshire offer a powerful and consistent environment for testing these designs, with companies specialising in wave, tide and floating wind energy increasingly drawn to Milford Haven Waterway specifically to develop these devices.

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Marine energy is poised to become a major part of the renewables revolution, and you could be part of it.

Marine renewables refers to the energy that can be generated in, on and above the world's oceans, seas and rivers and converted into reliable, sustainable and affordable electricity that can be used to power homes, transport and industries. It's taken huge steps in the last decade with a wide variety of devices in development. The industry is growing fast and will be reliant on continual innovation, and this is **where you come in**. The industry will need people with **Science, Technology, Engineering and Maths (STEM)** skills to help them move forward.

With **your help**, the full benefit of reliable, renewable energy is **within reach**. It has huge knock on effects such as helping to meet our **climate change targets**, strengthening UK energy security, **creating jobs** and contributing to the UK economy.

There are lots of **exciting and innovative roles** in the industry, and not just in STEM! Developments in the sector will provide a **wide range of opportunities** and routes into the industry including vocational roles and apprenticeships. A single renewable energy project requires the contribution of people from a **range of backgrounds and skillsets**, from planners and project managers to engineers, tethering technicians, ROV operators, communications professionals, business developers, ecologists and even drone pilots. Take a look at some of the possible roles overleaf.

As the industry matures the skill base will increase. You could work outdoors, on land or at sea, in an office or in a laboratory. Many roles provide opportunities to **travel and work across the globe**. Working in marine renewables offers the chance to be **part of an exciting, growing industry** as well as playing a part in the protection of the environment. Marine energy is still a young industry, providing a setting where **innovative thinking flourishes**. Just think, your input and bright ideas could break ground on tomorrow's cutting-edge projects!

Marine energy offers a wide range of career paths. Here are a few examples to get you thinking – but, if you can't see one you like, look overleaf for some other ideas:

Mechanical/Electrical Engineer

What they do

A Mechanical/Electrical Engineer will design and develop a device. They are responsible for ensuring the device and its parts withstand its operating environment and, ultimately, produce energy as efficiently as possible.

How to get started?

- 2 or 3 A levels including maths and physics, or relevant Extended Diploma* for a degree
- 4 or 5 GCSE's (A* to C) and A levels for an apprenticeship
- Internships and work placements

Would it suit you?

You'll need analytical thinking skills and attention to detail. IT, maths, science, technology and design ability will help you to think outside of the box.

Possible career path

- Apprentice ↓
- Mechanical/Electrical/ Instrument Technician ↓
- Mechanical Engineer ↓
- Project Management ↓
- Engineering Consultant

Design Engineer

What they do

A Design Engineer will work closely with the mechanical engineer to create the technical drawings and models based on the mechanical engineer's specifications.

How to get started?

- An apprenticeship, likely requiring 4 or 5 GCSE's (A* to C) including Maths, English and a science subject
- 2 to 3 A levels, or relevant Extended Diploma* for a degree

Would it suit you?

You'll need to have a flair for design as well as being IT literate. Good numeracy skills are also important.

Possible career path

- CAD Apprentice ↓
- CAD Technician ↓
- CAD Engineer ↓
- Head of Engineering Services

* The Extended Diploma is equivalent to three A-Levels and attracts UCAS points for entry to university. Pre-university courses and HNC/HND courses, accredited by UWTSO are available to study at Pembrokeshire College for the above careers.

Marine Scientist

(across a range of specialisms)

What they do

Marine Scientists are critical, e.g. measuring and mapping the environment where the device will be installed. This helps with the engineering of the project and environmental statements to ensure the devices do not harm their operating environment.

How to get started?

- 2 or 3 A levels, including a science. Maths and Geography are good (although not essential – there are many routes into marine science), or Extended Diploma in Applied Science* for a degree
- A degree in a relevant subject for postgraduate study
- Internships and work placements

Would it suit you?

You'll need IT, presentation, numerical and statistics skills to help with your research. Problem solving and observation skills will compliment practical fieldwork skills. As a Consultant, self-motivation, attention to detail and a real passion for your specialism will keep you in demand.

Possible career path

You could find yourself working for a developer, but perhaps most likely your career path will be with a survey company collecting field data. You may work in marine consultancy advising developers, or with regulatory agencies such as the Crown Estate or Natural Resources Wales.

Project Managers

(across a range of specialisms)

What they do

A Project Manager is responsible for the scope and quality of a project ensuring it is delivered in time and to budget. They will typically be the connecting point between all delivery disciplines.

How to get started?

Project Managers come from varied backgrounds. Formal project management usually involves gaining Project Management accreditations or relevant degrees but it's common to move into Project Management from other disciplines.

Would it suit you?

You'll need to be highly organised and goal oriented. Excellent communication skills are necessary as well as IT literacy and good numeracy skills. Leadership skills are required to lead on a project and motivate different teams to deliver the plan.

Possible career path

- Project Officer/assistant ↓
- Junior Project Manager ↓
- Project Manager ↓
- Senior Project Manager ↓
- Head of Project Management ↓
- Chief Operating Officer

A word from the CEO of Pembrokeshire Coastal Forum, David Jones

Marine energy is still a young industry but it's at an exceptionally exciting stage. STEM skills are at the heart of everything; you can specialise in technology development, remain in academia, move into consenting and planning, be part of engineering or marine operations or bring any number of business support skills from finance to marketing. It's a real mixed bag! My job has taken me all over the world and I can see the opportunity for Wales at a global level. Join the industry now and you'll be at the vanguard of a new wave (pardon the pun) of innovation and growth. Plus, you'll be helping find ways to decarbonise energy and manage the impact we have on the planet. What more could you want?

Technical

- Software Developers/IT
- Data Analyst
- GIS Technician
- Environmental Analyst
- Marine Scientist
- Marine Mammal Observer
- Consents Management

Design

- Design & Development Engineer
- 3D Modelling
- CAD Designers
- Prototype Engineers

An alternative route into industry...

As well as academia there are many different ways to becoming a professional within the marine industry, one of which is the Apprenticeship pathway. Mainstay Marine and many other marine and energy companies in Pembrokeshire offer opportunities to learn and work; current apprenticeships for this sector include; Marine Engineering, Electrical, Fabrication, Welding, Business Administration, Computing and Social Media.

If you are interested in this pathway please email admissions@pembrokeshire.ac.uk or visit pembrokeshire.ac.uk

Operations & Maintenance

- Marine Operatives
- Marine Consultants
- Divers
- Health, Safety & Environment Managers
- Pilots
- Crane Operators
- Drone Operators
- Asset Engineers
- Work Boat Builders

Construction & Fabrication

- Mechanical Engineer
- Electrical Engineer
- Environmental Engineer
- Geophysicists
- Welders & Fabricators
- Shipwrights
- Apprentices
- Painters

Which careers are possible in Marine Energy?

Business Development & Commercial

- Project Managers
- Business Managers
- Financial Analyst
- Funding Specialist
- Patent Adviser/Lawyer

Project Services

- Finance
- Office Management
- HR
- Marketing & PR/Comms
- Administrators
- Personal Assistants

