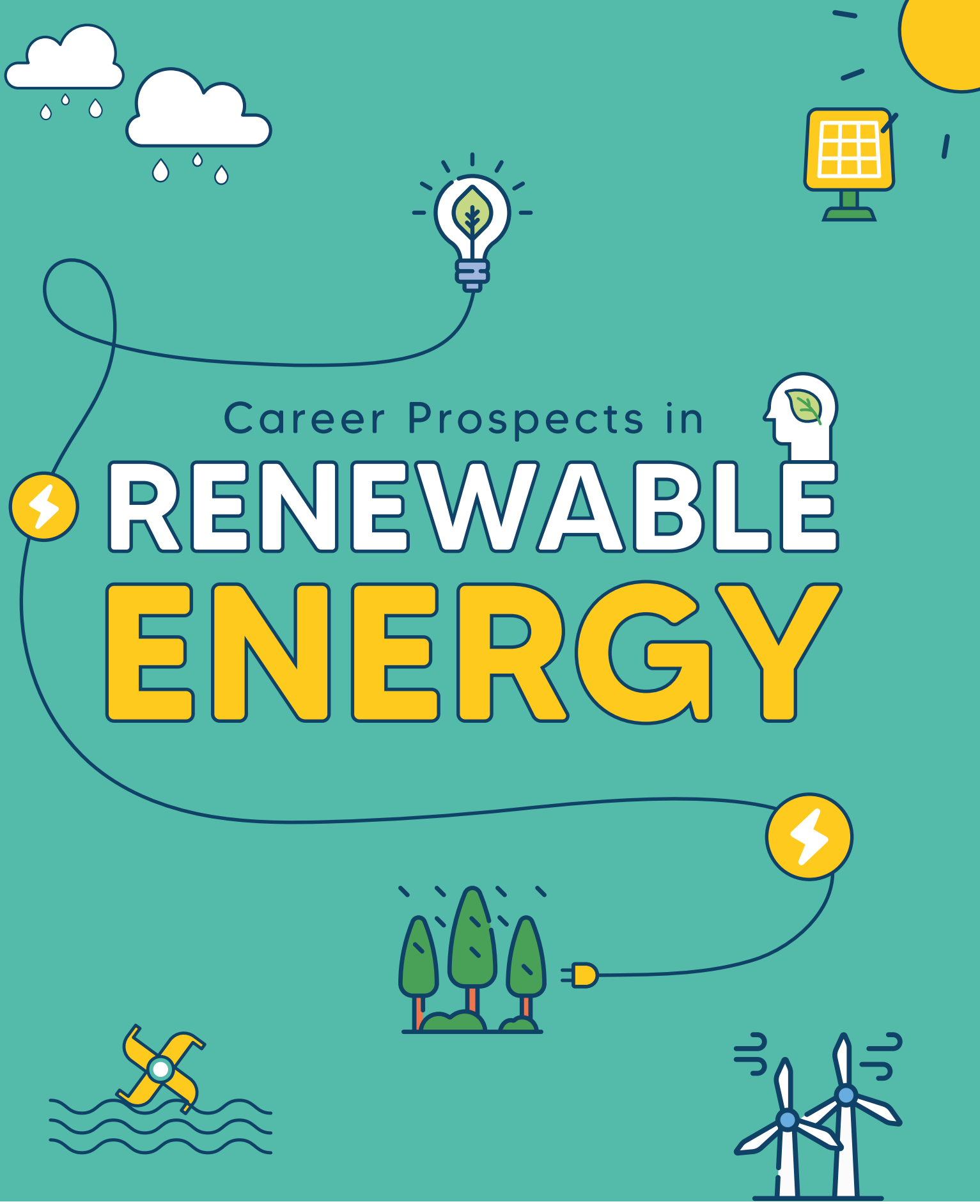
Career Prospects in

RENEWABLE ENERGY



UNIVERSITY OF HULL

HOP
HUMBER OUTREACH PROGRAMME

OfS Uni Connect Programme

The renewable energy industry focuses on renewable energy technologies including fuel sources such as biomass, hydro, marine, solar, wave and wind and plays a crucial role in the strategy to reduce carbon emissions.

The sector is one of the fastest growing industries with around 40% of all the UKs electricity currently being generated using renewable fuel sources and this is likely to continue to grow in the future. Although the sector is relatively new, it is seeing considerable investments and developments and the current labour market is starting to see this with more and more jobs becoming available.

DID YOU KNOW?

5x Renewable Energy create five times as many jobs as fossil fuels

A single wind turbine can power up to **1,400** homes

By 2050, Europe and North Africa could run on **100%** renewable energy

From apprenticeships to more senior roles, there is a wide range of different job opportunities within renewable energy, many of the roles you might never have thought of before. Initially the job roles consisted of a majority of specialised engineers and scientists, however as the industry has grown, it now requires a wider range of different skill sets in order to develop. **Salaries within in the sector range from £18,000 to anything over £60,000** depending on experience and technical level.

Within the Humber region...

There are over **19,000**  people employed in this sector!

Three of the world's largest wind farms are on the East coast, forming some of the largest engineering projects globally.

The renewable energy sector is **closely linked with engineering, ports and logistics and manufacturing**.

The Humber region is number  for the production of biofuel in the UK used in power stations to produce 17% of the UKs electricity.

TYPES OF JOBS IN RENEWABLE ENERGY

Although the renewable energy sector was initially made of specialised engineers and scientists, as the industry has grown, it requires a wide range of different skill sets in order to continue and develop.

Engineer

An engineer within the renewable energy sector will work on the production of energy through sources such as wind, solar or hydro.

As part of the job, you could be:

- Carrying out site and ground condition inspections for a new site
- Help prepare project plans and working out the cost estimates
- Writing and presenting technical reports

Project Manager

A project manager would be fully responsible for a project and any of the activity going on. You could manage the project from securing the land to delivering the project and seeing it come to life!

As part of the job, you could be responsible for:

- Raising/procuring finances in order to pay for the project
- Securing all the necessary consents needed to go ahead with the project
- Manage a team of people to ensure that the project is completed on time and within budget

Analyst

An analyst within the renewable energy industry will collect and analyse data around energy usage to help inform a range of different activities, such as implementing new solutions, reducing waste and educating others about improving energy efficiency.

As part of the job, your duties might include:

- Measure the energy efficiency of renewable energy sources in homes and businesses
- Use models to help make recommendations to improve energy efficiency
- Provide technical support before and during installations

MYTH BUSTING

MYTH

The Renewable Energy sector has low employment opportunities

FACT

This sector is seeing a big increase in the amount of opportunities available in a wide variety of different roles

This will continue to increase as it becomes more important that we reduce our carbon emissions. Worldwide, renewable energy jobs have grown to 11.5 million! The UK Government have invested £160 million into upgrading facilities to increase our offshore wind capacity and it has been estimated that this will **support up to 60,000 jobs directly and indirectly by 2030 within the ports, factories and supply chains.**

MYTH

The renewable sector only employs men

FACT

Both men and women work across all roles within the renewable energy sector

In fact, when looking at the energy sector as a whole (this includes industries such as oil and gas), renewables has one of the highest percentages of women, accounting for 32% of the work force. Having diversity in genders working within **the renewable energy sector is crucial for creating more innovative and inclusive energy solutions.**

MYTH

Renewable energy is so expensive so the sector won't be around for long

FACT

Renewable energy is not always the most expensive

It is getting cheaper to produce as we see technological advances with in the sector and in some countries, renewable energy sources such as solar have become cheaper than non-renewable. As the world pushes to have less of an impact on the environment, renewable energy will become ever more popular, and with those advances prices will reduce further. Currently in the UK it is more expensive to produce than non-renewable sources such as coal or fossil fuels, however they have a much lower impact, a factor that is just as important as the cost. The UK has plans to become the world leaders in renewable energy and aims to have zero emissions by 2050. The UK Government has said that £160 million has been made available to upgrade and develop ports and infrastructure to be able to **increase our offshore wind capacity, meaning renewable energy is here to stay.**

YEAR 9

What GCSE's are important for a career in RENEWABLE ENERGY

In year 9 you will have to make some important decisions about what to study over the next couple of years. You will have to continue with some subjects such as Maths, English and potentially science but you will have some choice for the others.

Engineer

To become an engineer, you'll need at least **five GCSE's grades 9-4 which include Maths, English and Science** (if you have the option, duel or triple science would be useful, although not crucial). Because of the nature of the role, you might want to pick subjects which also incorporate elements of an engineering career, such as **design and technology, IT, economics or business**.

Project Manager

To become a project manager, you're likely need to need previous experience in the sector. However, your GCSE choices can help you get an insight to some of the key responsibilities of a project manager. To progress onto your future choices, you'll need **five GCSEs grades 9-4 including English, Maths and a Science**. Business skills are often a requirement of the role, therefore you might want to **consider taking business or an economics GCSE**.

Analyst

The role of an analyst will require you to be good at problem solving and be highly IT literate. It's important that you have **five GCSE's grade 9-4 including Maths, English and at least one science** to enable you to progress onto your future options and pathways. It would also be good to consider GCSE options which included **analytical, numerical and IT skills, for example, IT, business or economics**.

OPTIONS

Once you've done your GCSE's, you'll be able to choose your level 3 pathway.
You have the option of three different routes:
1 A-Levels,
2 Vocational Qualifications or
3 Apprenticeships

1 A-Levels

A-Levels are the most similar option to what your GCSEs were like. You study each subject over two years and are assessed mainly through exams. If you have a specific career path in mind, you need to make sure you pick the subjects that are required for you to get there, whether that be going onto a higher education course or straight into employment. At A-Level you would usually have the option to pick three different subjects. If you're wanting to become an engineer within the renewable energy sector, to be able to progress onto a degree course or higher apprenticeship, you'll need at least one science subject and potentially Maths as well.

2 Vocational Courses

Vocational courses are designed to help you learn practically within a specific job area. A level 3 course will provide you with the skills and knowledge to start a career in the sector or go onto study at higher education. You'll be assessed through exams, projects and practical assignments. Level 3 vocational courses include: BTEC level 3 Extended Diploma in Engineering

T Levels: T Levels are a type of vocation qualification which have designed in partnership with employers themselves to give you the skills and knowledge to get on in the workplace. They combine classroom learning with a placement (minimum of 9 weeks with an employer) to help prepare you for work or higher study including university and higher apprenticeships. One T Level is the equivalent of three A-Levels. You'll be assessed similarly to other vocational qualification, mainly thought practical assessments and course work. T Levels are new to the education system therefore their availability may be limited.

3 Apprenticeships

Apprenticeships combine work with learning. You'll get to start working in your chosen area of health and care, learning the necessary skills on the job while you study for your qualification. If you've completed your GCSEs with grades 9-5, you want to be looking for a level 3 advanced apprenticeship. Apprenticeships are incredibly competitive as there's often only a limited number of vacancies so make sure to start looking for opportunities early and consider having a backup plan if you don't manage to secure a position. Examples of some apprenticeships which may help your progress onto a job within the renewable energy sector include: engineering, surveying or accountancy.

POST 18

OPTIONS

There are a lot of options to choose from at 18. What's right for you will depend on your situation and the career or job you have in mind and your preferred method of learning.

University

Depending on what subject you study at university, it will take you between three and five years to complete an undergraduate degree. This is where you can really focus your time on the subject and topics necessary for you to get you onto your desired career path. Examples of available degrees are: renewable energy engineering, naval architecture with ocean engineering, computer, data analyst. Once you've completed your undergraduate degree, you have the option to either seek employment within a company or go onto further post graduate study, specializing your expertise even further.

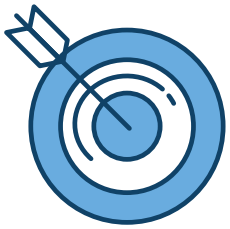
Employment

A lot of roles within the renewable energy sector will require some form of higher education (level 4) qualification or training, whether this be through an apprenticeship or getting a degree at a university. To get onto these higher education options, you will need level 3 qualifications which include A-Level or an equivalent vocational qualification.

Apprenticeships

Higher Apprenticeships (level 4): To start at this level, you should ideally have 2 A-Levels (or equivalent) or have completed an advanced level apprenticeship. Higher level apprentices follow work-based learning towards levels 4 and 5- equivalent to a foundation degree and above. Examples of higher apprenticeships include: business, mathematics and engineering.

Degree Apprenticeships (level 6+): You're likely to need evidence of any work experience in the sector, English and Maths GCSE to at least a level 4/C standard and relevant A-Levels (or equivalent) qualification. Degree level apprentices follow work-based learning towards levels 6 and 7 - equivalent to a full bachelor's or master's degree. Degree apprenticeships include: surveying, management, engineering and financial services.



Important skills needed for RENEWABLE ENERGY

Numerical Skills

Having good numeracy and maths is one of the core skills for almost all roles within the renewable energy sector, whether you are an analyst, engineer, or finance accountant. Depending on the role, it also may be helpful to have a good understanding of algebra, geometry, trigonometry and statistics.

Attention to detail

Not matter what you do within the renewable energy sector, you're likely to be working on some complex project which require good attention to detail. Financially, making mistakes could cost the project thousands of pounds. Making a mistake could also comprise the health and safety standards, which could put you and your colleagues in danger.

Commitment to Learning

The renewable energy section is constantly adapting and changing therefore it's important that you're committed to continued learning throughout your career. This might be needing to gain extra formal qualifications or just staying engaged with the latest news and technical developments within your sector.

IT/Computer Skills

Almost all pathways within the sector will require working with different pieces of software therefore its necessary that you have good and competent IT skills. Depending on your role, you may even need good knowledge of programming and coding skills.

Problem Solving

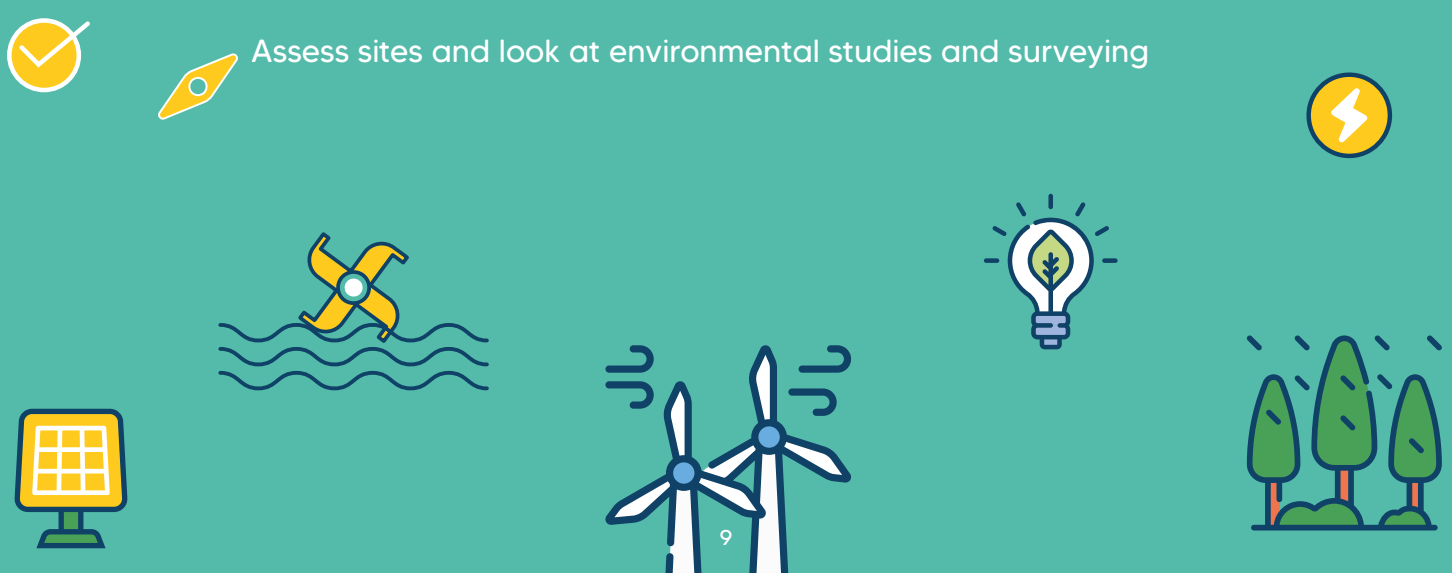
As with all new and advanced technology, it's not always going to go to plan and you're likely to come up against a few problems from time to time. As an engineer on site, you may need to use your initiative in order to fix a problem therefore you'll need to be quick thinking and confident with your own abilities.

A DAY IN THE LIFE OF
Wind Energy Project Manager

A wind energy project manager is there to manage or lead the development and evaluation of the wind energy project and any business opportunities surrounding it.

Here's some tasks a wind energy project manager is likely to carry out in a typical working day:

- Creation of wind energy project plans which include the scope of the project, tasks, resources, schedules, contingencies and costs
- Manage the project to make sure it stays within the budget
- Prepare or assist in submitting applications for any permits required
- Coordinate a group of people in related to the development of a project, energy assessments, engineering and any other activities to ensure that the project needs and objective are met
- Assess sites and look at environmental studies and surveying



Signposting

Key websites

www.lmihumber.co.uk/energy/

www.prospects.ac.uk/jobs-and-work-experience/job-sectors/energy-and-utilities/renewable-energy-careers

www.bmrsolutions.co.uk/a-beginners-guide-to-careers-in-renewable-energy/

www.jobs.gecareers.com/renewableenergy/global/en/

www.greenmatch.co.uk/blog/2015/04/pursuing-career-in-renewable-energy-sector

Key employers

- Orsted
- Pavegen
- VerdErg Renewable Energy
- Gev Wind Power
- SMartWind
- Siemens Gamesa
- British Gas
- RES
- Ecotrcity
- EDF Energy
- Greenport

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