INDUSTRY SECTOR

Renewable Energy

Overview

The Scottish Government has set 2045 as the target for achieving a net zero carbon economy. The energy sector is at the forefront of this aim, with opportunities in the renewable sector expanding rapidly. A shift towards renewable energy sources and a greater reliance on digital technology has transformed the energy industry, with a greater demand for workers with technical skills and an awareness of environmental factors.

What's the job market like?

The invasion of Ukraine by the Russian State is having a profound effect on global energy markets, driving up the cost of resources such as oil and gas. Energy security is now at the top of the priority list for global leaders as they look to reduce their dependence on other nations for their energy resources. Energy independence will be an essential capability and the UK government understands that renewable energy is the key to reaching this goal.

Recent studies have highlighted how COVID-19 lockdowns temporarily reduced global emissions of CO2 and other pollutants, and with the net zero target looming, 'green jobs' are at the forefront of the government's plans for recovery.

According to the Skills Sector Assessment, between 2022 and 2025, 5,800 people will be needed to fill job openings across the sector. Longer term, it's estimated that 21,000 new jobs will be created in renewables by 2050.

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Types of renewables

Wind

Offshore wind power is the energy created from the force of the winds out at sea, before being transformed into electricity. It is a renewable and infinite energy source that is relatively cost-effective to exploit. The UK is already a world leader in offshore wind power production and has committed to funding and resourcing further growth in the industry. Onshore wind energy is the power that's produced by wind turbines situated on land and driven by the natural movement of the air. Wind farms are often located in rural areas where buildings and obstacles don't disrupt the air flow.

Solar

Solar PV technology uses solar panels to capture sunlight and convert it into electrical energy. The technology can be used on both an industrial and local scale. Industrial projects such as solar farms are the most common method for utilising the power of the sun due to their extensive coverage and therefore mass energy production. On a smaller scale, many construction and planning projects such as new build homes include solar panels as standard.

Hydro/Marine Power

Hydropower is made up of energy produced by four different energy sources: run-of-river, water storage, pumped water storage, and offshore hydropower (wave and tidal). Hydropower is based on the theory of employing the kinetic energy from moving water to turn turbines. The only exception to this is wave power, which employs the vertical movement of waves to move magnets within generator coils, producing electricity.

Ground Sourced Heat & Geothermal Power

Ground sourced heat is designed to exploit energy from the top layers of the earth's surface which can be used to both heat and cool our homes depending on the time of year. This technology has been expanding across the UK, and it is now becoming commonplace for ground source heat pumps to be installed in new property developments. Geothermal energy is a type of renewable energy taken from the Earth's core. It comes from heat generated during the original formation of the planet and the radioactive decay of materials. The underground geothermal reservoirs of steam and heated water can be used for electricity generation and other heating and cooling applications.

Bioenergy

Biomass power is created by burning plant-based fuels to turn turbines and generate electricity. This can include wood pellets and wood chips, bioenergy crops or even agricultural and domestic excess which would normally be wasted. There are ongoing debates on the sustainability of biomass power; however, it provides an energy source that is not dependent on the weather. This flexibility makes it a viable alternative to fossil fuels, and it will be a key technology as the UK government strives for net zero.

Nuclear Power

Nuclear energy comes from the binding energy that is stored in the centre of an atom. To release this energy, the atom must be split into smaller atoms in a process called fission. This process is carbon-free and doesn't contribute greenhouse gases into the atmosphere. The energy that is produced by nuclear power plants is renewable, however the fuel that is required as part of the process is not renewable. The by-products of nuclear power are radioactive material and radioactive waste which can be harmful to humans, wildlife and the environment. Despite this, nuclear energy is the world's second-largest source of low-carbon power.

Hydrogen

Hydrogen is a clean fuel source, that when consumed in a hydrogen fuel cell produces energy. Hydrogen can be extracted through several different processes, the most common being thermal extraction and electrolysis. Hydrogen is increasingly being utilised across the globe as a lightweight fuel option for road, air and shipping transportation. In the UK, the government plans to replace natural gas boilers with hydrogen gas; hydrogen is so promising as a low-carbon fuel that the government sees it as an essential way of reaching our goal of being net zero as a country by 2050.

Scottish Military Employers

The energy sector demands individuals with the right level of skills, expertise and work ethic to drive forward developments in the industry. Service leavers and veterans have a wealth of experience and talent which puts them in pole position for a new career in the energy sector. There are a broad range of roles on offer from project managers and engineers to divers, analysts and operations managers.

Military Transferable Skills and Attributes

Service leavers possess soft skills such as effective communication, problem-solving, and the ability to work in teams. Therefore, with specific trade training, service leavers can offer the energy sector a well-rounded package that few other candidates will be able to match.

- Project Management
- Teamwork / Collaboration
- Procurement
- Stakeholder Management
- Problem solving
- Analytical skills
- Flexibility
- Team player
- Communication skills

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