

Environment Jobs Scotland: Skills for Renewable Energy in Scotland

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Forward Scotland

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AvayL Engineering

Executive Summary





Background

The renewable energy sector is expanding at an unprecedented rate. Previous research carried out by Forward Scotland identified the potential employment opportunities this will create and the need for a 'fit for purpose' workforce.

This study is intended to contribute to the wider debate on issues and skills within renewable energy, through the work of the Forum for Renewable Energy Development in Scotland (FREDS) and other stakeholders.

Forward Scotland commissioned Avayl Engineering to review the skills and training issues facing the sector. The aim of this was to identify:

- Current and future skill sets
- Entry requirements
- Career paths
- Training requirements and training provision in renewable technologies
- Recommendations for future training provision

The Renewable Energy Sector

Renewable energy is used in several ways. These include large-scale electricity generation; heat production; small-scale generation; fuel production, and energy storage. Each renewable technology has specific skills requirements.

Until recently, growth in the Scottish renewables sector has been slower than in many European countries. Scotland has targets to produce 18% of electricity from renewable sources by 2010, and 40% by 2020.

The number of Scottish jobs required for the development, construction and operations of renewables depends on many factors. These include the political and regulatory context; the overall requirement for future power generation, and the mix of renewable and non-renewable technologies.

Concerns exist over the potentially high level of skills imported from overseas, both through manufactured goods and through the services required for installation and operations. Without positive support to establish a Scottish supply chain it is feasible that the bulk of equipment and services could be provided from outside Scotland, severely limiting job opportunities.

The Industry's Current and Anticipated Future Skill Base

The research demonstrates a wide range of activities in renewable energy jobs, at many levels. Most of these skill sets contain generic, transferable skills although each renewable technology has its own particular context, knowledge and activities.



There are opportunities for skills transfer from declining industries, e.g. offshore oil and gas, fishing and aquaculture, to the renewable energy sector.

Energy production is a technical activity so most jobs are at experienced craft, technician or graduate level. There is little evidence suggesting growth in 'entry level' jobs within the renewables sector for the unemployed, although manufacturing, biomass and biofuel sectors could offer this in the long term, given favourable economic conditions.

The main opportunities for 'new', long-term jobs are in:

- Establishing Scottish manufacturing capability to meet the demand for renewable energy devices and associated equipment
- Ensuring high local content in all aspects of development and construction
- Operation of new projects, including grid upgrades

The growth of any of these jobs, especially those within the emerging technologies, is dependent on Government targets and interventions and other regulatory changes such as modifications to building regulations.

Training Provision and Career Paths

Skills specific to renewable energy technology are likely to be learned 'on the job' or through manufacturers' courses and employer training.

Many jobs in large-scale technologies are tied to specific projects, so an individual's career path might not be within a single company. However, career paths will generally start at apprentice or graduate level.

A number of training initiatives have been identified that are supporting the development of skills within the sector. The Power Academy is a response to the lack of electrical power engineers. The Scottish Drivers Training Scheme hopes to alleviate the chronic shortage of LGV drivers. The New Deal Ambition: Energy, currently delivered in England only, could be developed in Scotland for cable jointing and pylon work.

Conclusion

Endemic skills and labour shortages will have an effect on the development of renewable energy. At present, there are few skills shortages in the renewable energy sector, but there are forecasted shortages in certain sectors.

There remains a lack of understanding of renewable energy technologies and what these mean in practice in terms of skills. This is apparent at many levels including: local authorities, further education and higher education, training providers, enterprise networks and community groups.



Recommendations

The following are required to support and encourage the renewable energy sector to grow and develop the skills and competence of its workforce:

- Production of clear information on renewable technologies, skills and qualifications, and potential employment opportunities in the renewable energy sector
- Establishment of 'conversion' training for oil and gas, maritime and aquaculture workers to work on offshore wind and marine technologies
- Encouragement of developers and demonstrators of new technologies, to think about skills needs and training at an early stage
- Provision of sufficient funds by the public sector and industry to support training
- Contribution of public sector procurement policy to growing demand for renewable energy
- Develop competence-based training for: small-scale wind; micro-hydro technologies; biomass boiler installation; wood fuel supply chain; the emerging bio-fuel supply chain ensuring that Photovoltaic, solar and eventually heat pump competence-based training is widely available
- Develop a renewable energy short course for communities, trainers and advisors. Courses could be made available in schools
- Improved cooperation between Sector Skills Councils involved in renewable energy



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