SUBMISSION FROM THE ALLIANCE OF SECTOR SKILLS COUNCILS IN SCOTLAND

About Alliance Scotland

The Alliance of Sector Skills Councils in Scotland is tasked with representing, promoting and supporting the work of licensed Sector Skills Councils (SSCs) in Scotland. Together, SSCs articulate the voice of the employers on skills issues and they are key partners in the delivery of a world class skills base for Scotland.

The Alliance in Scotland’s core purpose is to:

- Act as the collective voice of the SSCs;
- Promote understanding of the role of SSCs within the skills system across Scotland;
- Co-ordinate policy positions and strategic work on skills with stakeholders; and
- Help build the performance capability of the SSCs to ensure they continue to work effectively on the employer-driven skills agenda.

Background

The Alliance in Scotland is grateful for the opportunity to submit evidence to the Economy, Energy and Tourism Committee’s inquiry into the Scottish Government’s renewable energy targets. In view of its remit, the Alliance will restrict its submission to the skills-related issues arising from the target.

In previous evidence to the Scottish Government and Scottish Parliament, the Alliance has emphasised the huge potential the renewable energy sector offers for future job creation and skills development in Scotland. Recent research for Scottish Renewables has identified the potential for more than 28,000 full-time equivalent jobs to be created in the offshore wind sector alone, with indirect and induced effects generating an additional 20,000 jobs by 2020.

We have also highlighted the crucial role Government has to play in ‘ramping up’ demand in this sector of the economy through its own procurement activities as well as through the legislation and regulations it creates and the targets it sets itself. To realise the potentially considerable employment and economic development benefits of renewable energy, we think it is right that the Scottish Government should set itself suitably ambitious targets to expand Scotland’s capacity for generating electricity from renewable sources.

At the same time, we have also emphasised the importance of committing up-front investment in skills and training to ensure Scotland has an appropriately skilled workforce to be able to take full advantage of these benefits and to maximise the number of jobs that could potentially be created by the growth of the renewable energy sector. Anticipating the precise scale of future growth in the renewable energy sector remains a challenge and requires an act of faith by government to invest in skills...
development right now on the understanding that emerging sectors such as offshore
wind will only really start to take off in around 2014/15.

**Key issues**

Up-front skills investment should have a focus on addressing some specific existing and
emerging skills-related issues that, if not addressed, could seriously hamper future
growth in the renewable energy industry.

**Ageing workforce**

Many of those existing industries that will contribute towards providing the skills to
enable growth of the renewable energy sector in Scotland appear to be experiencing an
ageing workforce, notably the power generation sector, which is forecasting large
percentages of its workforce will retire over the course of the next 10-15 years. The
causes of these demographic problems are many and varied but include: the long-term
consequences of the de-layering and downsizing that occurred following the
privatisation of former public sector industries; the retirement of 1960's baby-boomers;
the relatively low level of female employment across much of this sector; and the
difficulties many employers have found in recruiting young people because of the
perceived unattractiveness of many jobs in the industry.

It is also important to address this issue now, since there is currently an important
window of opportunity for younger workers entering the industry to gain valuable skills
and knowledge based on the extensive experience of more senior members of the
workforce.

With large numbers of skilled people forecast to leave the power generation industry
over the course of the next decade, there is a pressing need to identify new sources of
recruits to fill the looming gaps, with a particular focus on engaging with under-
represented groups, such as women and ethnic minorities.

**Existing skills gaps and shortages**

The wind industry is already suffering from a shortage of suitably skilled workers.
Specifically, employers in the industry are currently facing difficulties in filling vacancies
for project managers, electrical engineers and turbine technicians.

Furthermore, the Institute for Public Policy Research (IPPR) report ‘The Future’s Green:
Jobs and the UK Low-Carbon Transition’ summarises a selection of evidence on skills
gaps and shortages in the large-scale renewables industry, notably:

- Wind and marine technologies require ‘new combinations of old skills’ which are
  in much shorter supply, leading to poaching of staff and therefore high levels of
  churn;
- Employers are often compelled to train on the job, as ready-made combinations
  of skills are not currently available in the market place;
- There is a shortage of experienced trainers, both for Science, Technology,
  Engineering and Mathematics generally, and renewables specifically;
Recruitment for remote sites (such as the north of Scotland, where many renewable assets will be based) is particularly difficult.

Quantifying existing and emerging skills gaps and skills shortages in the renewable energy sector is a key priority, as well as working with providers and others to address them.

**Uptake of Science, Technology, Engineering and Maths (STEM) subjects**

As the call for evidence recognises, the take-up of STEM subjects at school and university is vital if we are to ensure the future workforce is large enough and can provide the necessary skills to meet the particular requirements of the renewable energy sector.

Although the supply of STEM graduates and postgraduates has increased in recent years, with demand for specific skills expected to increase greatly over the next decade or so, the supply of STEM skills is not predicted to increase at the same rate, meaning that the number of new engineering graduates entering the wind industry is unlikely to be sufficient to support the growth demands of the industry.

The picture is particularly concerning in the disciplines of electronic/electrical engineering and production/manufacturing engineering, both of which are important to the development and deployment of renewable energy technologies.

Although some of the historical issues driving the low percentage of engineering graduates entering the renewable energy sector have been addressed, such as unclear industry prospects, concerns about career path progression, and salary levels, there is evidence to suggest that more needs to be done to address this problem and to encourage greater numbers of young people to study all engineering-related subjects at HE level.

An adequate supply of Science, Technology, Engineering and Mathematics (STEM) qualified individuals is both a critical short and long-term issue for the renewable energy sector. In the short term action needs to be taken now to ensure that renewable energy firms have access to sufficiently qualified staff. This could be through incentives to retain engineers and other STEM qualified individuals in the labour market for longer, or working with the immigration system with a view to giving priority to would-be immigrants with those specific skills the country needs.

In the longer term more needs to be done with young people (including at an early age) to change attitudes about the attractiveness of STEM subjects and the career opportunities they can lead to.

Europe-wide research indicates that children appear to form strong attitudes towards occupations at an early age which will influence their later choice of study. Evidence suggests that pre-school intervention is critical in creating more positive attitudes towards Science and Technology, and other associated subjects. If we are to increase interest in Engineering and Technology as a career in the long-term, government, employers, institutions, policy-makers, funders and other stakeholders need a greater
recognition of the need for interventions designed to interest and enthuse young people at a much younger age.

Evidence in Scotland suggests that giving younger children direct experience of low carbon industries through educational visits is an important way of developing their enthusiasm for STEM subjects at an early age and encouraging them to pursue these subjects at a later stage, by giving them direct exposure to the interesting careers this would ultimately allow them to take up.

Given that fresh graduates will not satisfy the demand for specific skills, firms must also look inward and make significant investments in training and Human Resource (HR) processes to generate in-house capabilities and experience.

**Oil and gas – skills transfer**

There is clearly a major opportunity for people currently employed in the oil and gas sector to transfer their skills into the renewable energy industry. However, since demand for skilled workers and associated career opportunities in the oil and gas sector remain relatively buoyant, there is currently limited evidence of large numbers of people leaving the oil and gas industry to pursue a career in renewables.

That said, the latest Labour Market Intelligence report for the oil and gas industry, commissioned by Opito and Skills Development Scotland, suggests an increasing awareness amongst the oil and gas industry workforce of growing opportunities for future career development in the renewable energy sector, and the need to upskill and to reskill to be able to take advantage of these opportunities.

As the renewable energy industry matures and long-term career opportunities become more certain, it is reasonable to expect that an increasing number of workers currently employed in the oil and gas sector will seek out those opportunities and will transfer their skills into the renewables sector.

**Learning provision**

While broadly in balance at present, available learning provision is likely to be inadequate to meet the level of demand generated by the renewable energy sector in the future. One of the downsides of a demand-led skills system is that for emerging sectors (such as renewable energy), a lag is likely to occur between when employers actually start to demand specific skills and when education providers can respond. Action to mitigate such a lag between demand and supply is vital if Scotland is to gain a competitive advantage globally with respect to renewable energy.

Teachers are an obvious key path in motivating young people to learn and to take a strong interest in a particular subject or career path. Therefore, continuing to invest in quality teaching staff and in attracting young scientists into the teaching profession will offer high quality role models to young people – role models that they can relate to and who are able to ignite young peoples’ enthusiasm for STEM learning and careers.
Offering incentives to schools to recruit teachers with a STEM background would do much to raise the profile of STEM-related subjects in schools. This could also work to promote STEM degree courses in teacher training colleges. Incentives/support could also be offered to schools to encourage them to set up STEM/low carbon clubs. Incentives for individuals to study STEM subjects at Higher level onwards would also be likely to increase participation.

**Manufacturing capacity**

The development and growth of greater manufacturing capacity in areas such as wind turbines is essential for the successful development of renewable energy. Understanding these supply chain linkages, identifying and addressing any associated skills issues, and providing effective support across the supply chain will be another essential prerequisite for the development of a strong and vibrant renewable energy sector.

**Careers advice**

Positive, high quality careers advice delivered in schools which is based on accurate and appropriate information and delivered in an impartial manner is absolutely crucial to encouraging more people in STEM-related careers. The importance of overcoming the misconception that engineering (and the industries that employ engineers and scientists) is a dirty, out-moded and declining career option cannot be over-estimated.

The development and integration of vocationally based subject courses is an important element to increasing access to STEM-related career opportunities for all those with the desire to succeed in the low carbon industry, whatever their preferred learning route. On this subject, the merit of vocationally-based courses should not be under-sold by any educational institution.

Employers, in collaboration with their Sector Skills Council, are already undertaking work to improve the availability of clear, concise and accessible information on the career pathways and opportunities open to young people in renewable energy sector both now and in the future (e.g. job profiles, case studies, etc.). Innovative methods of getting this information to young people are also being actively explored, including the internet, social networking sites, sporting/entertainment events, etc.

**Education-industry exchange**

Schools should do more to encourage stronger representation of STEM-related industries and experience on school governing bodies. STEM and/or low carbon committees of school governing bodies would also be able to offer advice on appropriate learning activities and promote links with industry.

There is also a need for greater encouragement of young people to enter STEM studies by employers through increased access to, and promotion of, bursary and employer sponsorship schemes. This creates a closer relationship between the young person and the employer – increasing the likelihood that (i) the young person will go on to pursue a career in a STEM area and (ii) increasing the likelihood that the young person will
actually want to work for the employer supporting them (a win-win situation for both the young person and the employer). It is widely recognised that fostering these kinds of relationships between a student and those that are able to offer appropriate (in this case industry-specific) mentoring and other forms of pastoral support are key to delivering successful outcomes to young people. A sense of feeling one step removed from industry will not benefit the young person and may discourage them from entering the industry.

At post-graduate level, STEM-related education would benefit from a reinforced focus on closer collaboration with industry and involvement in community-related projects.

More active support and encouragement for STEM graduates thinking about starting a career in low carbon sectors would also be beneficial.

**Incentivising local employment and skills development**

Experience from other countries suggests that it should be possible to introduce specific provisions to ensure that the growth of the renewable energy in Scotland directly benefits Scotland’s economy and job market. For instance, it would be worth exploring whether firms looking to take advantage of Scotland’s significant renewable energy resources could be contractually obliged to source a fixed proportion of their workforce from the local jobs market or to make a defined commitment to local skills development.

**Conclusion**

From a skills perspective, the Alliance is strongly supportive of the Scottish Government’s renewable energy targets as a key driver for the future development of the renewable energy industry in Scotland with potentially significant associated opportunities for employment and economic development.

The level of ambition for the industry expressed by the target must be matched by a similarly ambitious programme of up-front support to enable the development of those skills needed for Scotland to take full advantage of the associated employment opportunities.

There is good evidence to suggest the Scottish Government is rising to these challenges and that the Scottish workforce is adapting to take advantage of the benefits of a growing renewable energy sector.

We strongly welcome the Scottish Government’s commitment to deliver 25,000 apprenticeships a year, which includes a commitment to fund 500 Modern Apprenticeship starts in the energy and low carbon sectors each year until 2014. We also particularly welcome the more recent commitment to invest an additional £2 million in the creation of an extra 1,000 flexible training places for Scotland’s energy and low carbon sector.

We are encouraged by figures showing around 8,000 undergraduate entrants and 3,000 post graduates in renewable energy related subjects, and a further 25,000 to 30,000 college learners in similar subjects.
The challenges outlined above are also being actively addressed by the emergence of a cluster of activity around Tayside, Fife and Edinburgh colleges to support wind technologies - including the opening of the Whitlock Energy Collaboration Centre at Carnegie College and the launch of the Modern Apprenticeship wind turbine technician framework.

In support of continuing initiatives in these areas, we would re-emphasise the crucial importance of having in place a suitably skilled workforce to be able to realise the full economic benefits associated with the Scottish Government’s ambitious renewable energy targets. In what is a globally competitive industry, the extent to which Scotland can realise the full potential offered by renewable energy will be determined by the scale of its ambition and the extent to which it is willing to support this ambition with a robust, properly funded, and well-targeted skills policy. Continued concerted support for skills development and ongoing action to address the specific issues outlined above will be a prerequisite for success.

Alliance of Sector Skills Councils in Scotland
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