Skills
Development
Scotland

Skills Investment Plan for the Energy Sector

Foreword

As Scotland looks to drive forward economic growth it is critical that Government and its partners work together to support growth companies, in growth sectors, selling to growth markets. Scotland's energy sector falls firmly into this category. We have the resources and ambition to be a world leader in sustainable energy as well as continuing to take advantage of our oil and gas resources. With as much as a 25% of Europe's offshore wind and tidal potential, an estimated 10% of its capacity for wave power and its largest offshore CO2 storage potential, Scotland has the natural resources to become the green energy powerhouse of Europe.

To take full advantage of the opportunities before us we must continue to develop a highly skilled workforce. It is absolutely critical that we have the right people, with the right skills and expertise to continue attracting our share of the billions of pounds of investment in energy for Scotland.

Against this backdrop the Energy Advisory Board, which I co-chair, charged Skills Development Scotland with reviewing future skills and employment demands across the energy sector. This Skills Investment Plan has been developed in association with key skills delivery bodies and stakeholders and I am grateful to them all for their efforts.

The Plan identifies the potential for up to 95,000 job opportunities within the Energy Sector to 2020. This comprises a mixture of replacement demand to sustain more established energy sectors, such as oil and gas, as well as new jobs in emerging sectors, including offshore wind and CCS. It is critical we are able to deliver the skilled workforce identified in the Plan. We will now work together with partners across the sector, in our colleges and universities, in local government, and among the wider stakeholder community to strategically prioritise our efforts and investment to continue to deliver a world class energy workforce for Scotland.

The Right Honourable Alex Salmond MSP
First Minister of Scotland

Foreword

It gives me great pleasure to provide some commentary to this, the first edition of the Energy Skills Investment Plan, developed collaboratively with industry through the Energy Advisory Board. Like our work across the other Government Economic Strategy key sectors, we have found the support and insight from the Advisory Board invaluable and welcome the partnership that has enabled us to shape the future work programme and prioritise the investment of resources.

The task set by the Energy Advisory Board was to review future skills and employment demands across the sector and our work programme involved engagement with a comprehensive range of partners and stakeholders, working collaboratively with industry to review existing forecasts, analyse gaps and build future employment models. The work has been demanding, but also very rewarding, as we begin to evidence the scale of the opportunity and better understand the capacity that already exists to respond to and exploit future opportunities. Employers committed to comprehensive workforce development, world class training organisations such as OPITO and academic collaboration with Industry in the form of the Energy Technology Partnership all form part of our rich skills infrastructure. In addition to this we have an extensive network of Colleges and private training organisations, which support the sector through the delivery of valued vocational training including the Modern Apprenticeship programme.

Our plan articulates an initial set of actions to bring greater focus to our collective efforts and address areas where we need to build capacity in response to the development of what will be a very dynamic labour market, with strong regional and sectoral demands. Our work programme will be responsive and adaptive to market conditions and will continue to explore growth areas such as Power Networks and Energy Efficiency, continually informing our direction of travel. In doing so, we will seek to further develop the very positive relationship we have with the Energy Advisory Board and in particular Prof. Jim McDonald co-chair of the EAB and Principal of the University of Strathclyde, who has been very supportive throughout our development work.

We look forward to working with partners and industry to deliver a world class energy workforce for Scotland

John F McClelland, CBE,
Chair

Introduction

1. The energy sector is one of Scotland's key economic drivers. As we continue to benefit from the continued development and investment within the Oil and Gas sector, the Scottish Government's economic strategy also recognises that there are significant opportunities as the demand for renewable energy grows and new technologies emerge to support the Low Carbon Economy. Over the next 10 years investment is expected at a significant scale, for example £60bn in oil and gas, £30bn in offshore wind, together with the potential €100bn SuperGrid investment. To fully capitalise on these exciting developments, Scotland needs a workforce with the skills and capability to exploit the opportunities and deliver sustainable economic growth.

2. The vision articulated in the Scottish Government's Renewables Action Plan is to "ensure that employers across the renewables sector in Scotland have the skills they need now and in the future." In order to achieve Scotland's renewable energy potential, the Plan states that "it is important to get the right skills, in the right places, at the right time and in the right quantities." The same logic applies across the energy sector and it was agreed at the meeting of the Scottish Energy Advisory Board (EAB) in October 2009 that Skills Development Scotland (SDS) would lead on the development of a Skills Investment Plan to support the sector. In taking the work programme forward Skills Development Scotland engaged with the relevant Sector Skill Councils, the Scottish Funding Council (SFC), the STUC, Industry Bodies such as Scottish Renewables, Offshore Wind Industry Group, OPITO and the Enterprise Agencies. SQW were contracted to assist with the analysis of the labour market data and industry forecasts. This is the first edition of the Energy Skills Investment Plan. It will be a rolling programme and continuous liaison with Industry will see further analysis and forecasting of employment and skills.

3. This paper sets out the key components of the Energy Skill Investment Plan, covering:

- The scale of the opportunity
- The ways in which the existing supply infrastructure is already moving to meet the sector demand
- An analysis of the key gaps between supply and demand, and the risks if there is no intervention
- A series of intervention areas, with specific proposals to address the key areas.

The energy sector is one of Scotland's key economic drivers, with the potential to support significant numbers of new job

1 The GovernmentEconomicStrategy, The Scottish Government, 2007
2 Scottish Government (2009) Renewables Action Plan http://www.scotland.gov.uk/Publications/2009/07/06095830/0

The scale of opportunity

4. The initial development programme engaged with, drew evidence from, and supported development activity within the Scottish Energy Advisory Board's three Theme Groups:

- Oil and Gas
- Thermal Generation and Carbon Capture and Storage
- Renewables

Development activity has worked where possible from published estimates of jobs growth produced by and for other stakeholders. This approach has ensured that the plan recognises that skills are principally a derived demand, and so skill needs, will depend on how the sector as a whole develops. The estimates used and derived are set out in Table 1 and show the potential for between 52,000 and 95,000 opportunities to 2020, dominated by replacement demand for oil and gas and additional CCTS and offshore wind demand. The figures are fluid and will be subject to ongoing review and challenge with stakeholders as markets develop.

5. In total this suggests an average of 5,200-9,500 job opportunities per year to 2020. This combines replacement demand with new additional growth in emerging sectors. The two have been combined in anticipation that recruitment will take place amongst the same groups of the workforce to meet the overall needs of the sector.

6. In reviewing the current figures it is important to note that much of the projected demand for employment sits in a small number of sectors – oil and gas, offshore wind and carbon capture and storage (CCS). In all cases but especially around offshore wind and CCS there is uncertainty around the figures and when employment opportunities may be realised due to:

- The newness of much of the technology to be employed
- Financing and planning issues which always risk taking longer than expected
- The sensitivity of development to energy policy in Scotland and elsewhere which could change the development profile.
- The sensitivity of employment projections to the nature and timing of a relatively small number of very large scale investment decisions.
- The extent to which Scottish based employers further capitalise on the global market.

7. This uncertainty may mean that employment and development does not move ahead in the projected timescales. Even now, most employment growth is anticipated to occur beyond 2015. At present there is an expectation in terms of the three largest demand areas that:

- The demand in oil and gas is slightly front loaded, i.e. more need before 2015 than after
- Offshore wind will rise incrementally to 2015, but with a large step change around that point.[4]
- CCS is similarly expected to show steady growth to 2018, but with much greater potential beyond that point.

In total this suggests an average of 5,200-9,500 job opportunities per year to 2020

4 The Offshore Wind Routemap provides strong evidence of this step change.

Employment opportunities to 2020 – assumptions

Driver	Source	Opportunities to 2020	Notes
Replacement demand: oil and gas	SQW estimate, derived from Oil and Gas UK, 2010 Economic Report	20,000 to 30,000	Direct and indirect jobs. The figure does not itself imply a large change to skills demand. Covers direct and indirect employment. Including induced employment would boost the figures by about 25%.
Additional demand: oil and gas	Oil and Gas UK, Forthcoming Labour Market Survey report	10,000 to 2015	The industry is anticipating an increase in activity in the North Sea over the next few years. Preliminary figures from OPITO suggests 10 -15k jobs to 2015, with 2-3k induced jobs within the supply chain – at present no estimates available beyond 2015.
Replacement demand: conventional power generation, transmission and distribution	EUSkills SSA (Scotland), 2010	Up to 2,000	An update is expected from EUSkills (though the headline number is unlikely to vary by much). The figure does not itself imply any change to skills demand. Covers direct employment in the sector only
Additional demand: CCTS	Scottish CCTS Development Study Group/Industrial Power Association	13,000	CCS Skills Study 2010. Jobs in the UK will climb steadily from 2011-2018 then begin to increase more rapidly reaching 70,000 UK jobs by 2030, of which 20,000+ will be in Scotland.
Additional demand: renewables, offshore wind	Offshore Wind Industry Group, Offshore Wind Road Map, 2010	Up to 28,000	The scale of opportunities is dependant on (a) the amount of capacity installed in Scottish waters and (b) the development of a robust Scottish offshore wind industry, servicing the local and global markets.
Additional demand: renewables, marine	FREDS Marine Energy Group, 2009	Up to 5,300	The uncertainty relates to the level of capacity deployed in Scottish waters. Covers direct employment only.

3 Including indirect and induced employment brings the top scenario up to over 48,000 jobs.

Employment opportunities to 2020 – assumptions continued

Driver	Source	Opportunities to 2020	Notes
Additional demand: renewables, commercial onshore wind	SQW estimate	1,650+	Estimate derived by SQW from a number of sources. Covers direct employment only
Additional demand: renewable heat	Scottish Renewables, Renewable Heat in Scotland: 2020 Vision, 2009	1,350	Growth depends on the implementation of a robust UK renewable heat support mechanism. Covers direct employment only. Additional jobs are expected to arise in biomass fuel supply. More jobs could potentially be created if manufacturing capacity develops in Scotland.
Additional demand: renewables, hydro power	Scottish Government, The Employment Potential of Scotland's Hydro Resource, 2009	Up to 1,400	Mostly small-scale hydro (under 5 MW). Covers direct employment only.
Additional demand: other microgeneration	SQW estimate	~2,000	No authoritative, comprehensive microgeneration employment forecasts are available for Scotland. Jobs are likely to number in the low thousands, but difficult to be precise. Additional research is underway as part of the Energy Efficiency Action Plan. Covers direct employment only.

Source: SQW from various sources

The nature of employment and skills demand

8. The main skill requirements are widely recognised as engineers (especially civil, marine, engineering, structural and mechanical), leadership and management, project managers, welders, turbine technicians and divers. To quantify skills needs likely employment demand has been modelled at different qualification levels with an estimation of how those jobs might be filled (by graduates, apprentices, and people already in the labour market). This process has been informed by a review of the literature and stakeholder consultations. The feedback suggests that the majority of jobs will at technician level (SVQ Level 3, which can be supported through apprenticeships frameworks) and that firms' ability to absorb new graduates or apprentices is probably about 5-10% of their workforce per year. This leads to the following estimates of additional demand:

- Apprentices per year: 170-610
- Graduates per year: 40-150.[5]

9. Therefore, it is forecast that the vast majority of demand will be filled by people already in the labour force: the gap could be 3,900 to 6,800 places per year rising to around 13,000 in the peak (combining the best-case scenario forecast for each industry). This will include people changing jobs (both from within and outside Scotland) and movements from unemployment into employment. To facilitate this movement a range of skills provision will be required which are focused around issues of transition. This need is likely to require: postgraduate courses and individual modules; alongside technician-focused college and private sector courses.

The majority of jobs will be at technician level in areas such as engineering, diving and welding

5 These estimates are based on an assumed 80% of jobs at technician level (the mid point of the range) and using the low and high points of the employment estimates.

The nature of current supply

10. There is already much activity taking place which will support the development of the energy sector: Scotland's Universities have circa 8,000 undergraduate entrants each year in related subjects[6], along with around 3,000 postgraduates; Scotland's Colleges support 25,000 to 30,000 learners in similar subjects; and SDS has recorded around 3,000 starts on engineering and energy-related apprenticeships, each year over the last three years.

11. A number of other activities are also taking place:

- The Low Carbon Skills Fund, developed by SDS, with support from European Structural Funds, provides access to sector specific training to help improve business efficiency and the adoption and implementation of processes around low carbon technologies. The initial pathfinder fund of £585,000, launched in October 2010, aims to support over 650 employees undertake training in Low Carbon skills.

- A cluster of activity is emerging around the Tayside, Fife and Edinburgh colleges to support wind technologies and micro-generation – this includes the opening of the Whitlock Energy Collaboration Centre at Carnegie College and the launch of the Modern Apprenticeship Wind Turbine Technician framework.

- The award of £1.2m of Spirit funding by the Scottish Funding Council to Strathclyde University (on behalf of the Energy Technology Partnership) towards the development of the Scottish Energy Research Academy and its associated doctoral research programme to supply the very high level skills required by the sector.

There is already significant investment from the public sector in skills provision for the energy sector

6 The HE data is based on a calculation of relevant STEM subjects which includes engineering, physical sciences, maths and technologies. A similar approach has been taken to identify related college subjects.

Matching demand and supply

12. The current levels of mainstream supply give a context for the demand numbers presented above and suggest that:

- The increased demand for undergraduates appears relatively modest when set against current supply[7]. The key message here is to maintain the flow of good quality people into courses and to incrementally build supply in conjunction with the sector through increased collaboration. Further success in attracting increased R&D activity could place a significant additional demand on the Graduate and Post Graduate supply.

- The increase in apprenticeship numbers is potentially more significant in terms of current engineering provision, with an increase of 650 apprentices per annum equating to a 22% increase in sector activity. This increase in demand will require additional resource or a transfer from other sectors/ apprenticeship frameworks.

13. The current infrastructure around the above requirements is well established, but can be refined to provide an improved interface to employment within the sector. For new graduates it will take time for them to come through the system. This is also true for apprentices, although there is a much higher element of learning on the job. In addition to the resource requirements, the key challenge may be the extent to which firms in the sector can absorb and train new graduates / apprentices, and ideally to articulate and plan for this in advance of need.

14. If the absorption rate could be increased, it would reduce the extent to which workers will need to be drawn from other sectors. One way to achieve this could be through increased work experience in taught courses, as employers continually report a desire for sector experience. An increased absorption rate would both increase the capacity of the economy and reduce potential wage inflation pressures as demand for these skills rise.

15. The wider issue is how to attract and support mature workers who will change job to move in to the opportunities offered. These people are likely to come through a range of routes including people being made redundant from manufacturing and construction, seeing opportunities to enter a growth sector or simply wanting a change of job in the normal churn of the labour market. The recent Fraser of Allander projections show that while both manufacturing and construction are expected to recover from their recession low points there is still a possibility of net job losses due to the reductions in public spending. Similarly, the number of public sector workers is likely to reduce and may provide an opportunity to attract new people to the energy sector. Managed migration may also create a possible supply, especially to meet specialist skill shortages, assisted by TalentScotland / FreshTalent. However, the UKBA and Migration Advisory Committee have gathered together the results of the consultation on potential migration caps, and finalised recommendations, for implementation from April 2011.

The challenge will be in increasing numbers of apprentices, HE and FE graduates, and attracting experienced individuals.

7 This remains the case even when allowance is made for only around 60% of STEM graduates entering STEM careers three years after graduating. Source: The Demand for Science, Technology, Engineering and Mathematics Skills, Department for Innovation, Universities and Industry, 2009

Matching demand and supply

16. Taking all factors into account, it is difficult to estimate what scale of entrants will come through which channel due to the varied routes and uncertainties of the labour market. The uncertainties around the timing, scale and nature of demand all point towards a requirement for a very flexible response, informed by regular reviews.

17. Engineering sectors were more likely than average to report issues in attracting skilled staff.[8] Therefore, in attracting career changers and indeed young people into courses it will be important that the scale of opportunities in the sector is promoted actively. Moreover, given the scale of possible opportunities beyond 2020, encouraging young people now part way through the school system will be an important means to meet this longer term demand.

18. The nature of any response should also be conditioned by wider market conditions and the importance attached to the policy area. The importance of the policy area is apparent from The Climate Change (Scotland) Act 2009 which set challenging targets for the reduction in greenhouse gas emissions.

19. Alongside the environmental need is the economic opportunity. The Government's desire to capture this opportunity is expressed in the Renewables Action Plan[9]. However, to achieve this aspiration will require a well-skilled workforce, which, as demonstrated above, will mean significant numbers of new people entering the sector.

20. In many cases individuals and firms could be expected to make their own investments. Many firms in the sector would in essence be re-training their existing employees as they transfer from one job to another, and there is a history of people taking time out to invest in short courses (such as for divers) or indeed post gradate study to change career. There are also other public sector initiatives at our disposal to support and enable this, such as Adult Modern Apprenticeships, Training for Work and PACE.

21. However, there are several risks to investment of sufficient scale happening in the timescale required:

- The sector is expected to develop rapidly in a few years time by which time engineering and construction (the sectors with which there is likely to be most competition for labour) are expected to have emerged from recession.[10]
- The changing nature of the sector will create uncertainty for people considering re-training and could lead to them favouring more established and so perceived to be safer sectors such engineering, construction and in this context oil and gas.

22. In this scenario of increased competition for resources the delivery of renewables ambitions would be threatened. Therefore, it is important for the public sector partners to consider how they can create sufficient momentum to enable the sector to become established and so overcome the issues of change and uncertainty, that it will inevitably face until the sector and employment prospects are fully established

There is a degree of uncertainty around sector developments, and increasing competition for skills from other sectors

8 Science, Engineering and Manufacturing Technologies Scottish Sector Profile 2009, SEMTA; a similar trend is reported by EU Skills in its Labour Market Information – Scotland
9 Scottish Government (2009) Renewables Action Plan http://www.scotland.gov.uk/Publications/2009/07/06095830/0
10 See for example Fraser of Allander Institute, Economic Commentary, Vol 34, No.1, June 2010

Action Plan

23. The action plan set out in Appendix 1 outlines a series of proposed short and longer term actions to deliver a response to the issues set out above. In broad terms actions fall into the 5 strands of activity:

- Raising Awareness of the Sector, a unifying campaign with the Education Sector and Industry Partners
- Developing Skills for the Sector – increased investment in vocational training
- Influencing the Skills system and mainstream resource allocation
- Building capacity and flexibility to meet industry and regional labour market requirements
- Effective use of sector intelligence to inform decision making

The Action Plan identifies 5 key areas for action to address the skills issues identified

Next Steps

24. The development process consulted widely and a number of challenge sessions with stakeholders were undertaken, but further industry insight into assumptions made and proposed actions is obviously welcomed. A formal submission of this Plan was made to the Joint Skills Committee in January 2011, at which the Committee recommended that SDS and SFC Boards prioritise the energy sector when meeting future skills investment decisions to assist with the implementation of the Plan.

SDS and SFC will continue to support the ongoing programme of work.

Partners are fully committed to work with organisations from across the Energy sector to ensure that our collective effort is focused and channelled to maximise the employment and skill opportunities which the sector will generate and ensure continued business success both at home and overseas.

The Plan is fluid; planning assumptions, and action areas, will need to be regularly reviewed and updated

Appendix 1: Key actions

Raise awareness

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Make the sector attractive to young people, especially those considering career options as they move through the education sector	The increasing number of opportunities alongside the ageing workforce in traditional sectors will create a level of demand for younger skilled people. Moreover, the nature of these jobs should be attractive to young people, offering good career prospects in a growing sector with a good image. There is also concern that for many STEM graduates energy careers are not sufficiently attractive.	Ongoing investment in promoting STEM careers in general and renewables in particular, for example through the initiatives such as the Path is Green. Teacher CPD related to STEM such as through SERC and more generally in Curriculum for Excellence, and Science and Engineering 21. Initiate greater collaboration with Learning Teaching Scotland, SCDI, OPITO, Scottish Renewables, and other stakeholders to co-ordinate and support educational programmes.	Accelerate and co-ordinate national energy awareness programme, to include: • increased investment / development of the Path is Green and web-enabled services to include specific energy sector careers information, video clips, etc • Junior Saltire Green Energy Awards • Scope National Centre for Low carbon • Develop Energy Skills Gateway	SDS Sector Skills Councils Learning Teaching Scotland OPITO Scottish Renewables COSLA/Local Authorities	March 2011 - June 2011

Appendix 1: Key actions

Raise awareness continued

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Promote opportunities to those already in the workforce who may consider changing job /career	Firms will be limited in the number of new labour market entrants that they can recruit and support at any one point. Moreover, new entrants require skilled experienced people to learn from. Employers are already reporting issues around the recruitment of welders, divers, electricians and plumbers. In many cases they are looking for prior relevant experience which is difficult given the growth in parts of this sector. However, skills used in a different context may, with support, help to bridge this gap in expectation. The skills of many people working in construction and manufacturing sectors could be applied to energy related work with some adaption and enhancement.	Awareness raising activities and materials produced and made available through initiatives such as PACE and general careers fairs.	• Increased investment in the Path is Green and web-enabled developments targeted at career changers, etc • Advertising campaigns around employment opportunities in energy • Targeted promotional material for Jobcentre Plus • Development of Joint communication plan • Development of Regional Employment and Skills Partnerships	SDS and sector bodies Scottish Government Jobcentre Plus Employers and sector bodies Sector Skills Councils COSLA/Local Authorities	April 2001-April 2012

Appendix 1: Key actions

Developing skills for the Sector

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Increase the number of apprenticeships places available to enable new, technician level entrants	Replacement and expansion demand will create significant opportunities to offer good quality apprenticeships in occupations with good career prospects.	SDS to engage employers and training providers to increase the number of apprenticeship places on offer. Encourage established, larger firms to increase their recruitment of apprentices. To target new entrant and growth firms and promote apprenticeships to them.	Create capacity for an additional 1350 Modern Apprenticeships over next 3 years in engineering/ energy related subjects.	SDS Scottish Government Other training providers Industry	April 2011-March 2014

Appendix 1: Key actions

Developing skills for the Sector continued

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Ensure adequate higher education provision to meet the growing demand for STEM graduates	The expected increase in demand for STEM graduates across the sector is widely recognised. Other key sectors of the economy also anticipate growth in such occupations. Efforts to enhance sector attractiveness should lead to increased numbers of suitable graduates applying to courses.	Ensure that Universities across Scotland are aware of likely increases in demand from applicants and employers. Engage with the HE sector to ensure that in aggregate, appropriate decisions are taken around teaching provision, including the offer of work experience as part of courses Consider applications for additional funding, such as through the Horizon fund and SPIRIT grants, in light of this key government priority. Increase % of indigenous students, undertaking HE provision	• SFC to use strategic engagement with institutions to promote security and development of relevant STEM provision. • Further development of Energy Technology Partnership and Scottish Energy Research Academy to support postgraduate course developments • Increase postgraduate provision in relevant subject areas • Create stronger internship propositions and utilise Talent Scotland Graduate placement programme	SFC and institutions Talent Scotland SDS Energy Technology Partnership	February 2011-March 2014

Appendix 1: Key actions

Developing skills for the Sector continued

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Flexible training Framework – to provide short courses to enable those moving in to the energy sector to apply their existing skills in a new context	Where people wish to change career, their skills may need some adaptation. The focus should be on those who require fairly limited amounts of re-skilling, as this will be most economically efficient. Growing the low carbon sector is important for both economic and environmental objectives. Yet the uncertainty around future developments will discourage firms from investing in recruitment and training.	Establish a Skills Framework that can be used flexibly and at short notice to support short courses for mature workers changing sector. This can also be used to support inward investment activity (see below). Available for three years to: • provide a secure start to the market • provide an incentive to early movers • manage uncertainty over the timescale in which issues may emerge. Encourage collaborative development with groups of firms to work alongside training organisations to develop provision and co-ordinate recruitment on to these courses. The information gathered through this joint working should be fed back to the qualifications development work being undertaken elsewhere. Businesses should be asked to co-invest in the training, with their relative investment increasing over time as the model is established and uncertainty declines. Tailor existing leadership and management development products offered by the public sector to support the sector.	Prioritise resources to fund an additional 2,000 places on average over the three years by • Extend Flexible Training Opportunities/Low Carbon Skills Fund • Utilising European Structural Funds to develop transitional training programmes to retrain individuals in emerging energy sectors • Promoting the current leadership and management offers of Scottish Enterprise, Highlands and Islands Enterprise and others to the sector	SDS SFC Scottish Government SE/HIE	April 2011 onwards

Appendix 1: Key actions

Resources and infrastructure

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Ensure adequate facilities to provide specialist training	There is concern that there are inadequate specialist equipment and facilities available on which people can gain the appropriate skills in the right context. This need is thought to be particularly acute at College level. Development should be focussed around existing similar areas of expertise, and the likely locations growing renewables activities in particular those indicated in the National Renewables Infrastructure Plan (NRIP).	Establish capacity within specialist centres in a number of Scotland's Colleges to ensure appropriate supply to meet the increased apprenticeship and workforce development activity. In this arrangement the colleges would develop complementary provision and promote their collective offer to employers and investors.	Formalise College Partnership in line with Energy Technology Partnership and: • Align current investments taking place • Establish criteria based on commitment, expertise, proximity to future investment, and willingness to prioritise • Develop regional energy learning and teaching partnerships • Simplify and reduce range of qualifications • Seek to "brand" energy qualifications to ensure ease of access	SFC and Colleges SDS Sector Skill Councils Local Employability Partnerships HE to support ETP to support	April 2011 onwards
Engaging appropriately with employers to ensure requisite flow of intelligence from industry to inform ongoing skills developments?	New technologies, contractual opportunities and infrastructure investment will continue to influence skills demand and supply as job opportunities materialise to 2020. As employers are better able to articulate medium and long-term skills and recruitment needs, this information needs to be captured and analysed to ensure the ongoing responsiveness and flexibility of our public sector investments for the industries affected.	Facilitate employer support and guidance through the creation of an Energy Employers' Council and Strategy Group.	Work with EAB and existing advisory and development groups to identify appropriate leadership, membership and input to create a robust and inclusive employer engagement strategy to support and inform key public sector initiatives.	SDS with Employers and Sector Bodies Scottish Government SSCs SFC	April 2011 onwards

Appendix 1: Key actions

Resources and infrastructure continued

Theme	Rationale	Key actions	Actions	Responsibilities	Timescale
Have systems primed to support major expansion by existing business or inward investment opportunities	A number of firms have been considering growing or expanding their activities around the energy sector. This includes long standing energy firms looking to grow their renewables services and potential inward investors. Such expansion is attractive as it would build on the existing skills infrastructure, and so enable firms to take greater self responsibility for staff recruitment / development.	The other actions in this plan are key to meeting this need. The challenge is for the public partners to communicate effectively and at an early stage to ensure that: • SDS/SFC are aware of emerging needs, and given a realistic assessment of the likelihood of these occurring • SE/HIE and Scottish Development International (SCDI) have up to date knowledge of the skills related services that can be offered to businesses	• Establish formal partnerships between SDS, SE, HIE and SDI to appraise NRIF/Inward Investment/Indigenous company proposals • Prioritise skills investment around proximity of infrastructural developments	SDS SE HIE SDI	March 2011
Regularly update the projections and analysis in this report	The speed of development and the challenges faced in terms of policy, technology and planning mean that the future is fluid. However, it also means that lead in times may be fairly lengthy and in many cases quite public, and so can be tracked. There are a number of other studies on-going and these should generate good data from which to update planning assumptions. Harness Human Resource expertise within the Sector to inform development activity.	Regularly review and update the assumptions used to generate this action plan. Establish a monitoring system to track the future development of the sectors. Establish HR Practitioners Forum to gain industry insight and understand pressure points. Draw evidence from Sector Skills Councils (SSCs) and Industry Bodies to inform the review and analysis process Establish a robust Employer Engagement Strategy to increase industry insight	• Co-ordination of information from industry bodies/industry forums to: • Ensure continuous flow of updated information • Update future skills demands • Regular communication to employer forums and individual organisations	SFC/SDS Skills Committee OPITO SSCs Scottish Renewables Employers	