

# Green Skills, Green Jobs: Opportunities for the South West Low Carbon Economy

## Introduction

From Chris Evans, Director, SLIM



Well, as 'green' is definitely the new black as far as skills are concerned, it was not difficult to choose a topic for our forthcoming Learning Theme. Green jobs and green skills are part and parcel of the low carbon agenda and also at the heart of discussions about economic recovery.

Indeed, as a recent ARUP report commissioned for the South West Regional Development Agency (SWRDA) states, "there are compelling reasons and drivers for a green economic recovery. Confronting the mounting energy and climate change crises represents an extraordinary opportunity to reinvigorate the economy through investment in clean, sustainable, low carbon initiatives".

The drive towards green jobs and green skills is coming from a range of directions, including: legislation to reduce carbon emissions; public sector investment into, and promotion of, more sustainable technologies, material and ways of living; companies adopting environmental policies and potential market opportunities afforded by renewable energy.

As our lead article will highlight, the issue of green skills is a complex one, yet one which, as a region, we need to understand if we are to make the most of the opportunities that may come our way. In this Bulletin we look at the emerging policy agenda in this area and the plethora of recent developments.

Our Learning Theme supports the work of the South West Regional Employment and Skills Partnership (SWRESP) and the delivery of European Social Fund (ESF). National Guidance states that ESF should have a 'special focus on training for the new jobs that will be created as the economy recovers, especially 'green jobs' in a low carbon economy.' Regional ESF Frameworks must include a commitment to this and set out specific sectors and skills that will be targeted with ESF Funding. This Learning Theme will therefore bring together policy-makers and practitioners to understand better the issue of green jobs and green skills and how these can be supported in the region.

The Learning Theme will produce up-to-date research reviews, and a workshop. Through this you'll be able to share ideas, develop recommendations, and of course indulge in a good dose of networking.

So, if you have views about green jobs and green skills, then please do take this opportunity to get involved, have your say and influence policy in the region. Just complete the attached form and send it back to us. I hope you will be joining us for what promises to be a stimulating and timely discussion.

The Learning Theme workshop will be held at the Sandy Park Conference Centre, Exeter, on Friday, 27 November 2009.

*Chris*

Our latest SLIM Learning Theme tackles the timely and complex issue of Green Skills and Jobs and their likely potential for the South West Low Carbon Economy. Do they present a route to economic recovery or simply further regulation? We explore the latest strategies below.

## What are green jobs?

There are widely varying views as to what precisely is covered by green jobs or skills. According to the United Nations Environment Programme (UNEP<sup>1</sup>), 'green jobs' are:

*work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality ... this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.*

With a new central policy focus on a 'low carbon' future, there has been much recent activity in the 'green' agenda by government departments, industry bodies, skills advisers, researchers, environmental agencies and special interest groupings. Many of these note a lack of clarity in terminology, particularly when identifying existing jobs or skills with green dimensions as compared with those newer areas anticipated for a greener economy.

In April 2009 the House of Commons Environmental Audit Committee announced an Inquiry into green jobs and skills policies. It aimed to encourage low carbon investment and boost employment in environmental industries, with a focus on tackling the recession. The Inquiry also sought to identify the nature of the jobs that might be created in green industries as a result of the green fiscal stimulus; the skills base for the UK environmental industries; and the effectiveness of government policies.

The Inquiry gathered evidence from a range of public and private stakeholders, including large employers, industry skills bodies, governmental agencies, environmental and energy organisations, policy research institutes, trades unions and others. All agreed that harmonising terms of reference for green jobs and skills was an urgent priority, as at the moment:

*there is no accepted definition of what 'green jobs' actually are. The term has variously been used to refer to jobs in environmental services, new renewable energy plant and other low carbon energy sources, production of low carbon or environmentally-friendly products, installation of energy efficiency measures, environmental consulting and low carbon finance ... there is no single, generic 'green' skillset.*

- Institute for Public Policy Research (ippr): Evidence to House of Commons Environmental Audit Inquiry

The ippr spoke for many others<sup>2</sup> in recommending that a policy framework for creating quality new low carbon jobs be focused in strategic sectors, stimulate the domestic market and provide support. Strategic and well coordinated skills supply needs to be linked to evidence of specific skills shortages. The development of the low carbon economy should include central oversight of skills provision to train people for new and emerging jobs, forecast and target skills provision to meet future demand.

A number of Sector Skills Councils (SSCs) responded to the Inquiry, including ConstructionSkills and Summit Skills. The SSCs reflected the majority view of those submitting evidence: that they themselves would be much involved in defining a 'green skills' framework, in conjunction with employers. Not all of these would be in new industries, as ConstructionSkills noted:

*it is clear that the terms 'green jobs' and 'green industries' create some confusion within the business community. As with 'environmental skills' and 'environmental industries' this is open to misinterpretation, as a number of relevant jobs already exist in the construction industry in areas such as insulation. In order to*

<sup>1</sup> UNEP. Green Jobs: Towards decent work in a sustainable, low-carbon world. <http://www.unep.org>

<sup>2</sup> eg Learning and Skills Council. Skills for a low carbon, sustainable and resource efficient economy. March 2009.

*maximise employment and employer engagement it will be necessary to 'translate' these terms into language that business understands - Sector Skills Councils have a part to play here.*

In support of future green skills, evidence was also received by a cross-sector Renewable Skills Group of SSCs<sup>3</sup>. For them the environmental agenda was overarching and included low carbon, renewables technology and energy efficiency targets, which should be integrated into mainstream national and local government activities. They pointed out the strategic value of skills transferability between existing and new industries and acknowledged the strong presence of STEM skills in energy sectors. However, they cautioned that the freeze in lending between banks during economic recession was likely to hinder investment in a renewables infrastructure which would in turn delay new green job creation.

## National policy on green skills and employment

The 2006 Stern review<sup>4</sup> examining the implications of global climate change on the UK and world economies was followed up by further studies and consultations which aimed to identify new low carbon measures that would be required<sup>5</sup>. As part of its former environmental lead, Defra was one of the first government departments to look at the jobs and skills implications of shifting to a low carbon economy in its 2008 response to the Commission on Environmental Markets and Economic Performance<sup>6</sup>.

Since spring 2009 there has been a raft of national policy papers issued by central government aiming to boost awareness of the low carbon economy

<sup>3</sup> Cross Sector Renewable Skills Group: Energy & Utility Skills, AssetSkills, Cogent, Construction Skills, ECITB, Lantra, SEMTA and SummitSkills

<sup>4</sup> Stern Review: the Economics of Climate Change. Oct 2006.

<sup>5</sup> Building a low-carbon economy: the UK's contribution to tackling climate change – the first report of the Committee on Climate Change. CCC, December 2008.

<sup>6</sup> Defra. Building a low-carbon economy: Unlocking innovation and skills. Response to Commission on Environmental Markets and Economic Performance (CEMEP) recommendations. 2008.

and how it will develop green industries and skills. The recent reorganisation of departments that now includes a Department of Energy and Climate Change (DECC) has also signalled a major shift in policy.

The Department of Business, Economics and Regulatory Reform (now Business, Innovation and Skills (BIS)) published its views on new industries and skills<sup>7</sup> that anticipated changes needed to Britain's green economy. The report advocated an active approach to ensure that the UK's skills capabilities and ability to secure jobs underpinned the UK's global competitiveness.

In the same period a cross-departmental report<sup>8</sup> identified key industry sectors where investment in low carbon initiatives would drive innovation. These include: carbon capture and storage, offshore wind generation, marine energy, nuclear energy and low carbon vehicles. Other green sectors with significant potential for growth include solar, biomass, hydro, waste management, geothermal, recovery and recycling, hydrogen and fuel cells, carbon finance and other environmental industries.

In July 2009 BIS set out its position<sup>9</sup> on opportunities for wider growth and competitiveness as the European Union (EU) enters a phase of economic recovery. It noted that an EU-wide skills audit – in conjunction with CEDEFOP, the European Centre for Vocational Education and Training - would help to identify skills required to support key sectors with the potential to exploit future demand or competitive advantages. The growth of the low carbon economy with the development of green jobs is recognised as being important for future planning and forecasting. Understanding the skills required to enable the economy to respond effectively to climate change will underpin Member States' commitments to lower carbon emissions and the growth of new environmental industries.

BIS acknowledged the ongoing contribution towards skills investment and economic recovery made by targeted use of the ESF. It proposed that further simplification of EU regulations would help to unlock

<sup>7</sup> BERR. Building Britain's Future: new industries, new jobs. April 2009.

<sup>8</sup> BERR/DECC/DIUS. Investing in a low carbon Britain. April 2009.

<sup>9</sup> BIS. The Future of EU Competitiveness: from economic recovery to sustainable growth. July 2009.

and focus ESF support, enabling it to complement analytical research on European skills needs. BIS recommended that existing ESF resources for skills/adaptability priority could expand skills delivery and strengthen investment in the jobs of the future, particularly the green jobs needed in a low carbon economy. ESF could also influence the green skills agenda by encouraging the exchange of best practice, business-to-business mentoring and mutual recognition of European qualifications. Specific use could be made of ESF to add value to national schemes to boost 'green' jobs and develop the concept of green apprenticeships.

The parallel release by BIS of the UK Low Carbon Industrial Strategy<sup>10</sup> identified drivers of fundamental change in four key areas: energy efficiency; boosting the low carbon energy infrastructure; low carbon vehicle development and production; and international recognition of skills, infrastructure, procurement, research and development, demonstration and deployment policies. It recommended that skills for low carbon goods and services be embedded into all professional training. The Strategy also recognised the key role of government to work with leading employers and key strategic partners to stimulate demand, support business innovation and create the framework for developing low carbon skills in the UK workforce.

The Industrial Strategy defined a Low Carbon and Environmental Goods and Services sector (LCEGS) that can be broken down into three key areas of economic activity:

- ◆ *Environmental sector, including energy, carbon and broader environmental consultancy, air pollution control, environmental monitoring and management, marine pollution control, waste management, recovery and recycling.*
- ◆ *Renewable energy sector, including wind, wave and tidal, biomass, geothermal, hydro and photovoltaic energy generation and renewables consultancy.*

- ◆ *Emerging low carbon sector, including alternative fuels such as nuclear, and alternative fuels for vehicles, carbon capture and storage, building technologies, energy management and carbon finance.*

Most significantly for the regions, the Industrial Strategy also announced the immediate development of Low Carbon Economic Areas (LCEAs) to accelerate low carbon economic activity in areas where Britain's existing geographic and industrial assets give a location clear strengths. LCEAs comprise a partnership of regional and sub-regional bodies, led by RDAs in conjunction with relevant local authorities and Local Strategic Partnerships. They will strategically coordinate local, regional and national policy levers including infrastructure development, planning policies, skills provision and inward investment.

In parallel with the Industrial Strategy, DECC published a Strategy for Climate and Energy<sup>11</sup> and a Renewable Energy Strategy<sup>12</sup>. These publications shifted the policy focus onto the renewable energy industries and supply chain although they also called for the development and transfer into new areas of existing STEM skills, including those presently utilised by the offshore oil industry. DECC noted that the UK renewables industry does not yet have a coherent approach to training, with its skills footprint covered by at least nine different SSCs.

To improve coordination, the EU Skills SSC<sup>13</sup> has already begun to work with other SSCs to develop a skills strategy for renewable energy.

DECC has also set up the Office for Renewable Energy Deployment (ORED) to work with local authorities and RDAs, Government Offices, planning authorities, statutory advisers, SSCs, National Skills Academies, industry stakeholders and planning bodies. ORED will develop UK manufacturing, skills and jobs across renewable electricity and heat technologies and fund support for regions to assess their capacity for energy projects. Working with EU Skills, ORED will support a comprehensive review of the renewables sector skills across the UK and develop the National Skills Academy for Power.

<sup>11</sup> DECC. The UK Low Carbon Transition Plan: national strategy for climate and energy. July 2009.

<sup>12</sup> DECC. The UK Renewable Energy Strategy. July 2009.

<sup>13</sup> Energy & Utility Skills, the Sector Skills Council for the gas, power, waste management and water industries

<sup>10</sup> BIS/DECC. The UK low carbon industrial strategy. July 2009.

## Skills research

Alongside policy activities, intensive skills research has been underway to identify the low carbon skillsets needed for existing and future green jobs and industries. The Institute for Employment Studies has classed 'green' skills initiatives as those which cover<sup>14</sup>: 1) energy efficiency jobs in existing production sectors, 2) higher level skills in energy efficient industrial process design, and 3) new skills for advanced energy technologies.

In a study for Defra, Pro Enviro<sup>15</sup> developed a detailed 'checklist' for the green skills required by low carbon initiatives, industries and occupations (see end of Bulletin). Its recommendations highlighted a 'latent demand' for what it called LCREE (Low Carbon and Resource Efficient Economy) skills, for which:

*demand is not currently being articulated by employers and as a result the current skills delivery framework is ill equipped to anticipate and respond. Organisations do not have the right levels of understanding of the skills requirements and implications of a LCREE and consequently of the importance and potential benefits of integration of LCREE skills into their businesses. Only when these links and a clear business case are made will businesses demand LCREE training.*

## Role of the regions

In its Renewable Energy Strategy, DECC noted that the nine English RDAs are well placed to contribute to national and regional renewable energy priorities by:

- ◆ *providing regional leadership in preparing and delivering single integrated regional strategies;*
- ◆ *maximising business opportunities through support for the energy and environment*

*technologies sector, skills and supply chain development, inward investment and critical energy infrastructure;*

- ◆ *supporting low carbon innovation through research and demonstration for new and emerging technologies;*
- ◆ *supporting businesses through Business Link and related services; and*
- ◆ *developing the market for renewable technologies through sustainable investment and procurement activities.*

DECC also endorsed the influential role of local government in the promotion and deployment of renewable technologies and greater energy efficiency. For example, planning proposals may offer development opportunities for sustainable construction, an infrastructure to supply and deliver renewable energy, or low carbon transport options.

The first new LCEA is located in the South West of England. Led by SWRDA, it will focus on the development of marine energy demonstration, servicing and manufacture. The South West LCEA will develop low carbon economic opportunities through the creation of new demonstration facilities for wave and tidal power (eg the Wave Hub project in Cornwall); investment in world class academic and research strengths (eg the PRIMarE marine research institute); a new network of science parks and businesses; new port infrastructure; and the creation of an industry forum based in the region.

The South West Regional Economic Task Group (SWRETTG) has identified 'green recovery' as a key priority in terms of the opportunities it brings for jobs and people, and the transformation towards a low carbon, resource efficient economy. Recent research<sup>16</sup> has helped SWRDA, GOSW and the Defra agencies to: ensure the region is able to respond quickly to new government initiatives for a low carbon economy; consider the environmental impact of the economic downturn; and identify green measures that could contribute to a recovery, stimulate the economy and maximise business opportunities.

<sup>14</sup> Institute of Employment Studies. Public Policy Research Newsletter. July 2009

<sup>15</sup> Pro Enviro. Skills for a low carbon and resource efficient economy (LCREE). Report for Defra. 2009.

<sup>16</sup> ARUP. Achieving a green economic recovery: discussion document. May 2009.

Four green economic recovery priorities were identified as part of a broader response to the recession and a contribution to a low carbon economy: domestic energy efficiency, business resource efficiency advice, financial support for marine technologies, and the potential of new nuclear energy. The ARUP report recommendations suggested that RETG should encourage higher-level vocational skills development to match the needs of the low carbon economy and ensure that regional skills objectives are clearly embedded in the regional priorities established for Higher Education.

On behalf of SWRDA, RegenSW<sup>17</sup> surveyed development and deployment options for renewable energy and energy efficiency measures in the region and the implications of central government targets and timelines to 2020. Its study also encompassed onshore bulk electricity, transport, built environment and heat, and offshore wind, wave and tidal technologies.

Further detailed research has also taken place at sub-regional level. In 2008 Devon County Council commissioned a study<sup>18</sup> into the potential contribution of seven renewable energy sub-sectors of interest to the Devon economy: wind power, photovoltaic, hydro, biomass, solar thermal, heat pump, and anaerobic digestion. There was found to be a significant need for renewable energy training courses around the county, which was followed up with a pilot training programme and subsequent impact assessment.

In Cornwall, mapping of renewable energy companies has been carried out by RegenSW and the Cornish Sustainable Energy Partnership<sup>19</sup> to inform their development needs under the EU Convergence Programme. Key areas of support for surveyed companies included marketing, R&D, business strategy planning, access to finance, infrastructure (both IT and office/storage facilities), increasing management capabilities, market

research for products/services, improving access to national/international markets, and intellectual property management and protection.

Beyond the South West, activities are increasing both in anticipation of future LCEA designations in the regions and also in the devolved administrations. Following on from its sustainable development policy, Wales has developed its own green jobs strategy<sup>20</sup> which prioritises business support, fostering innovation and technology and investing in a more sustainable economy. British Gas has subsequently announced the opening of a new green skills training centre in the Welsh Valleys to roll out widely domestic energy efficiency measures, and also drive regeneration in deprived communities.

## Abstracts

### Investing in a Low Carbon Britain

This cross-departmental report lays out the Government's green investment plans. It builds on the vision of Britain's Low Carbon Industrial Strategy published on 6 March by setting out targeted investment announced in the 2009 Budget. The document announces a range of policies and investments which will form a central part of the Government's overall strategy for the UK economy and for meeting its energy and climate change goals. [http://www.decc.gov.uk/en/content/cms/news/090423\\_low\\_car/090423\\_low\\_car.aspx](http://www.decc.gov.uk/en/content/cms/news/090423_low_car/090423_low_car.aspx)

### Skills for Sustainable Low Carbon and Resource Efficient Economy, LSC 2009

A Report of the round table meeting hosted by the Learning and Skills Council which brought together a group of stakeholders from across the skills system to act as a reference group offering support and challenge to a high level cross-government forum on skills for a low carbon and resource efficient economy. The report makes a number of recommendations on a range of topics including: culture change; learner engagement/learner voice; public sector leadership; regulation and legislation; role of government and agencies; next practice and best practice; and the role of professional bodies (including for teachers/trainers). [http://readingroom.lsc.gov.uk/lsc/National/Skills\\_for\\_Sustainable\\_Economy.pdf](http://readingroom.lsc.gov.uk/lsc/National/Skills_for_Sustainable_Economy.pdf)

<sup>17</sup> RegenSW. The road to 2020: an analysis of renewable energy options in the South West of England. September 2008.

<sup>18</sup> Step Ahead Research. Devon Renewable Energy Skills and Training Project (DREST) final report. On behalf of Devon County Council. March 2008.

<sup>19</sup> RegenSW. Briefing: the Cornish Renewable Energy Industry. May 2007.

<sup>20</sup> Welsh Assembly. Capturing the potential: a green jobs strategy for Wales. July 2009.

### **How to Green your workplace, a TUC Guide, TUC 2007**

The booklet is divided into two sections: the first outlines some of the workplace issues where environmental improvements may be needed. The second summarises some of the key actions that union members can take to address these issues. [www.unison.org.uk/acrobat/G201207.pdf](http://www.unison.org.uk/acrobat/G201207.pdf)

### **The UK Low Carbon Transition Plan: National Strategy for Climate and Energy**

This White Paper sets out the UK's first comprehensive low carbon transition plan to 2020. This plan will deliver emission cuts of 18% on 2008 levels by 2020 (and more than a one-third reduction on 1990 levels). The document sets out the Government's five point plan to tackle climate change. The White Paper covers issues such as: transforming the power sector; homes and communities; workplaces and jobs and transport. [http://www.decc.gov.uk/en/content/cms/publications/lc\\_trans\\_plan/lc\\_trans\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx)

### **New Industry, New Jobs, April 2009**

This paper frames a national discussion which the Budget will take forward and which the Government will follow with further detailed statements of policy in the coming weeks and months. Over the course of 2009, these will build into a picture of how we can now pull together to come through more strongly and secure Britain's future economic success.

At the heart of the Low Carbon Industrial Strategy are drivers of fundamental change in four key areas:

- Energy efficiency to save businesses, consumers and the public services money
- Putting in place the energy infrastructure for the UK's low carbon future – in renewables, nuclear, Carbon Capture and Storage and a 'smart' grid
- Making the UK a global leader in the development and production of low carbon vehicles
- Ensuring our skills, infrastructure, procurement, research and development, demonstration and deployment policies make the UK the best place to locate and develop a low carbon business and

make sure international business recognises that. [www.berr.gov.uk/files/file51023.pdf](http://www.berr.gov.uk/files/file51023.pdf)

### **Green Jobs: Towards decent work in a sustainable, low-carbon world. Policy messages and main findings for decision-makers**

The present overview draws on evidence and findings presented in the report "Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World". While the overview is consistent with the report, it also includes reflections emerging from the exchanges among the partners of the Green Jobs Initiative not contained in the original report. The original report was commissioned and funded by the United Nations Environment Programme (UNEP), as part of the Green Jobs Initiative jointly mounted by UNEP, the International Labour Organization (ILO), the International Organisation of Employers (IOE) and the International Trade Union Confederation (ITUC). It is produced by the Worldwatch Institute, with technical assistance from the Cornell University Global Labour Institute, for UNEP.

[http://www.unep.org/labour\\_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf](http://www.unep.org/labour_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf)

### **The UK Renewable Energy Strategy, July 2009**

The UK needs to increase radically its use of renewable electricity, heat and transport. This Strategy explains how and why we will do so. It sets out the path for us to meet our legally-binding target to ensure 15% of our energy comes from renewable sources by 2020: almost a seven-fold increase in the share of renewables in scarcely more than a decade. [http://www.decc.gov.uk/en/content/cms/publications/lc\\_trans\\_plan/lc\\_trans\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx)

**Green Skills Checklist<sup>21</sup>**

Tier 1	Tier 2
Design Skills	Eco-Design Green Manufacturing Materials Specification Life Cycle Assessment/Costing
Waste Skills	Waste Quantification and Monitoring Waste Process Studies Waste Management Systems Waste Minimisation Waste Technologies
Energy Skills	Energy Minimisation Energy Management Systems Energy Quantification and Monitoring Energy Costs and Trading Renewable Energy Technologies Non-Renewable Technologies
Water Skills	Water Minimisation and Re-Use Water Management Systems Water Quantification and Monitoring
Buildings Skills	Building Energy Management Integration of Renewable Energy Energy Efficient Construction Facilities Management Calculating Building Energy Efficiency and Carbon Ratings
Transport Skills	Transport Impact Minimisation Technologies Transport Impact Minimisation Processes Transport Management in Business

<sup>21</sup> Pro Enviro for Defra – Skills for a Low Carbon and Resource Efficient Economy

<p>Materials Skills</p>	<p>Sourcing Procurement and Selection Material Use and Impact Quantification Management Systems Impact and Use Minimisation</p>
<p>Financial Skills</p>	<p>Investment Models New/Alternative Financial Models Quantification of Climate Change Impacts Principles of Low Carbon and Resource Efficient Economies Tools of Low Carbon and Resource Efficient Economies</p>
<p>Management Skills</p>	<p>Impact Assessment Business Planning Awareness Raising Opportunities Management Risk Management Day-to-Day Management</p>
<p>Policy and Planning Skills</p>	<p>Built Environment Master Planning and Implementation Strategy Development Strategy Implementation</p>