Green Work

Employment and skills – the climate change challenge

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JEAN LAMBERT MEP is the Green Party Member of the European Parliament for London - a position she has held since 1999. Jean works on a range of social and environmental concerns, to build a more just and sustainable future, and has focused on how these issues are connected. For many years she has championed the green skills agenda at EU level, and, working with Green Party colleagues on the London Assembly, has pushed for action and investment in London. A member of the European Parliament's Employment and Social Affairs Committee, Jean has published reports on work-life balance, workers rights, climate change and housing, environmental refugees, energy and waste, and social inclusion. In 2005 Jean won the award for MEP of the year for her work on justice and human rights.

Foreword

The need to respond to climate change with urgency is now, thankfully, an established consensus, and I don't need to make that argument here. However, doing so in a joined-up way, reaching deep into economic, industrial and training policies, remains the challenge. This is true at local, national and European Union levels.

Many people will think of green work in terms of recycling, and this is indeed part of the picture. However, the greening of work, and of industry, goes much broader and deeper than waste management. There can be no adequate response to climate change without a fundamental greening of work, a greening of industry, and a greening of skills.

This report recommends greater action, greater focus, and a more joined-up approach to integrate these issues into climate change objectives and action plans. There must also be a greater commitment in terms of public funding. As London's Green Party Member of the European Parliament, I have argued for this approach at London, UK and European levels.

In the current economic climate, the response to climate change can also be a positive response for jobs and training. In many ways it has to be. Quite simply, no other approach will meet this challenge.

Introduction

A lot of time is spent arguing about the targets for the reduction of greenhouse gas emissions and the necessary legislation to set the quality standards for air, water, car emissions and so on. Implementation measures are given much less public attention and thus we see contradictory proposals and an inconsistency of approach: a call to reduce emissions while supporting the expansion of coal-fired power stations or for ambitious targets on innovation in the private sector and renewable energy technologies, while going for nuclear power with state support.

For far too long, however, these debates have ignored the blindingly obvious: if we don't have a sufficient number of skilled workers able to deliver change on the necessary scale, we cannot meet our targets.

I have met trainees, trainers both vocational and academic, business people and employees – all of whom say that the challenge is not being met.

There are some signs of movement. I have managed to get a mention of skills and training in to the EU's **Sustainable Development Strategy** and some research is going on at EU level into the work potential of a more Green agenda. The British Government is looking to the role of new technology and business opportunities. The Greens on the GLA had helped to persuade the former Mayor of London to provide LDA funding for a green jobs initiative: the resulting skills audit commissioned by the London Energy partnership should provide a valuable base for action. The Trade Union Confederations at both EU and UK level are pushing for change. The CBI has now spoken out on the green skills agenda.

But progress is far too slow. It is not enough to expect change to be 'employer-led'. This is an abdication of political responsibility. We know we are

effectively facing a green industrial revolution – where we have to transform our society to take account of the needs of our environment as well as our social and economic needs.[1] Both the EU and national governments have a role to play in ensuring people have the education and skills necessary to make successful change possible.

This report examines some of the possibilities and makes proposals as to how we can make progress on green work. We need more rapid action.

What is Green Work?

There are different facets to green work.

There are the new job sectors, such as renewable energy, which aim to maximise the earth's own resources but not deplete them and we look at wind energy in particular as an example.

The number of people working in green industries or doing 'green jobs' is extremely hard to estimate. Difficulties arise from different definitions and a lack of standardised data.

The European Commission estimates that the European Union's eco-industry is 'one of Europe's biggest industrial sectors', with an annual turnover of €227 billion or about 2.2% of the EU's total gross domestic product.[2] However,

'Member States could develop education for sustainable development and targeted training for professions in key sectors such as construction, energy and transport. Special attention should be devoted to teacher training.'

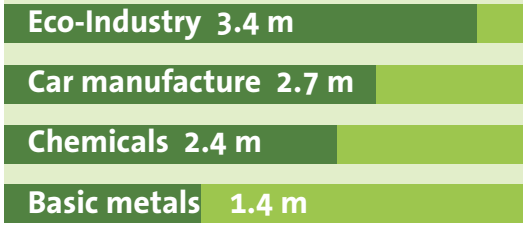
Revised EU Sustainable Development Strategy 2006, paragraph 17.

1 Other aspects of this transformation, in terms of policies to respond to the 'triple crunch of the credit crisis, climate change and high oil prices' are dealt with in the first report of the Green New Deal Group, July 2008, **A Green New Deal,** which includes my colleague, Caroline Lucas MEP. The **Green New Deal** proposals would require investment in green jobs and training, as advocated in this report.

2 DG Environment, 2007, **Facts and Figures: the links between EU's economy and environment**, p1.

eco-industry is defined in very broad terms, and includes pollution management (mostly air pollution control, waste treatment and environmental administration) and resource management (renewable energy plants and water supplies) as the main areas. According to the Commission, this eco-industry accounts for 3.4 million full time jobs – more than either the car manufacturing or pharmaceuticals industry.[3]

EU jobs in eco-industries compared to other industrial sectors



Source: DG Environment, 2007, **Facts and Figures: the links between EU's economy and environment**, p4-5, quoting Ernst & Young research.

Many of these jobs, however, are a product of a high-waste, high-pollution society. It is therefore necessary to question how many are truly green, that is to say, jobs emerging from a shift to a society becoming greener and more sustainable. Mapping and managing this change, and indeed accelerating it, must be key political priorities of our time.

For many businesses, however, we shall see a shift in emphasis as they adapt to change. Transport systems, for example, will shift towards more public transport and away from individual car use. Additional jobs in public transport services and manufacturing of the equipment will more than compensate for the relative decline in the car industry.

There is the impact of the work itself. Green work aims to be as resource and energy efficient as possible; to minimise its impact on the environment through reducing its waste and pollution effects as far as technically possible. It carries this approach through its entire procurement and supply chain wherever the business is sited. It applies to its own internal operation as well as to its product. Green travel plans, recycling, ethical company pension investment are part of that.

Good working conditions are also part of green job creation. So issues such as fair pay, high standards of health and safety (including working time limitations), and work-life balance are also important and I have dealt with these in earlier reports.[4]

We know that tough targets can drive green change and innovation and so can high eco-standards. Implementation of EU environmental legislation in the UK, and in other members states, combined with national and local strategies for a low-carbon economy, will generate a huge number of jobs in emerging green industries, as well as transforming many existing jobs and the sectors of which they are part.

But green work is also people-driven and workforce involvement and customer expectations are as crucial as management decisions.

The rapid pace of change necessary to combat climate change presents a challenge for investment and training as well.

3 These are full time equivalent jobs, meaning some will be part-time. Ibid., p5.

4 Jean Lambert MEP, 2006, **I Must Work Harder? – Britain and the Working Time Directive**; Jean Lambert MEP, 2004, **Flexible Working: A work-life balance or a balancing act?**

5 European Commission, January 2008, **20 20 by 2020 – Europe's Climate Change Opportunity,** *www.eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0030:FIN:EN:PDF.*

New green jobs

Development in environment, climate and energy policy, frequently at European level, provides opportunities for the 'greening of work'. The latest EU climate change package, which is due to be finalised late 2008/early 2009, is of particular importance.[5] This is both in terms of creating new green jobs and transforming existing industries and sectors.

Energy savings and efficiency

EU policy on energy efficiency includes a commitment to reduce energy consumption by 20% by 2020.[6] This will only be achieved by energy savings derived from increased energy efficiency of products, energy reduction in domestic and other buildings and in transport.

It has been estimated that an energy efficiency increase of 1% a year, sustained over a 10-year period, creates 2 million man-years of employment – ie 200,000 additional (EU) jobs sustained over 10 years.[7]

Training to be an Energy Assessor – Energy Performance of Buildings Directive

The EU Directive on Energy Performance of Buildings[8] requires all UK homes which are to be sold or rented to have an energy assessment leading to an Energy Certificate. Rented accommodation is included from 1 October 2008. These certificates give each property one A-G rating for energy efficiency and a second A-G rating for environmental impact, as well as indicating possible improvements in each case. The assessments and the production of the certificates must be carried out by qualified assessors.

The main qualification to become a Domestic Energy Assessor (DEA) is the Level 3 Diploma in Domestic Energy Assessment (Dip. DEA). (Other routes and qualifications may be necessary for non-domestic Energy Assessor training.)

According to Asset Skills, the Sector Skills Council for the Property, Facilities Management, Housing and Cleaning industries, there is currently no public funding available for training to be an

Investments in cost-effective energy efficiency improvements almost always have a positive impact on employment ...

Improvements in energy efficiency create three or four times the number of jobs created by investments in additional energy supply.

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6 This target uses a baseline of 2020 'business as usual'. See Council of European Union, Presidency Conclusions 8/9 March 2007, Annex 1, **Energy Policy for Europe**, p20. *www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ec/93135.pdf*. This target is also included in the Commission's **Europe's Climate Change Opportunity.**

7 DG Internal Policies of the Union, Economic and Scientific Policy Dept, Briefing Note on the employment potential of renewable forms of energy and increased efficiency of energy use, p13, referencing European Commission, 2005, **Doing More With Less** – Green Paper on energy efficiency.

8 Directive 2002/91/EC.

Energy Assessor, though this may change.[9]

According to their website, G-lec Skills Academy offers the Dip. DEA 6020 Level 3 City and Guilds qualification for £2,500+vat, which involves 5 days training plus 100 hours of distance learning materials.[10]

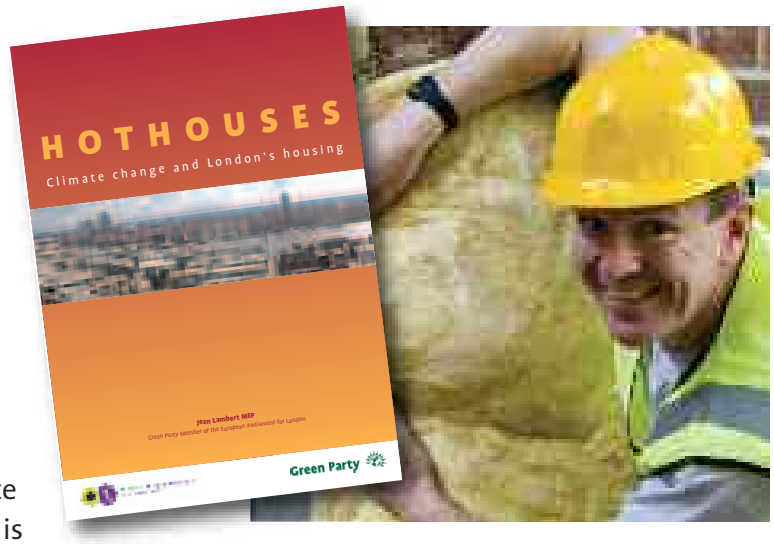
Limited funding for training in new green skills is a very real issue, and if not adequately addressed by the Government, this will impede progress on closing the green skills gap. The assumption that companies or individuals will invest in training effectively narrows the pool of potential candidates and is therefore likely to be discriminatory in its effect.

Jobs in home insulation

As I argued in my previous report **Hothouses: Climate change and London's Housing,** accelerating home insulation is one of the most cost effective and sensible ways of reducing climate change emissions. This is especially the case for London, where housing accounts for a much larger proportion of total carbon emissions than in other areas of the UK. Nearly one million London homes remain in need of cavity wall insulation. With £1 in every £3 spent on fuel bills being wasted due to poor insulation, this is also a social justice issue. As I argued in **Hothouses,** an accelerated home insulation program is needed, which includes the roll-out of free insulation, prioritising vulnerable groups who are likely to suffer the most from the effects of fuel poverty.[11]

Kirklees council has led the way on this issue, and is offering every home the opportunity of free cavity wall and loft insulation.[12]

The Local Government Association (LGA) is calling on the Government to establish a national home insulation program to provide free insulation to every home in the country. With UK housing stock woefully uninsulated, this would mean providing nine million homes with cavity wall insulation and 12 million homes with loft insulation. The LGA estimates that this could be delivered over a 10 year period, based on a total cost of £5 billion, which would be met by energy suppliers contributing £500 million each year over that period. These payments would partly be met by the windfall profits currently enjoyed by the energy companies, and would be part of a significantly scaled-up version of Carbon Emissions Reduction Target (CERT).[13]



For London, this would mean a program to insulate around 940,000 cavity walls and over 1.5 million lofts. It would also require the start of a program to bring insulation to London's 1.7 million solid wall homes.[14]

At European level, 40% of the EU's energy is used in buildings. EURIMA, the European Insulation Manufacturers Association, estimates that a concerted effort to improve energy efficiency in buildings would lead to the creation of the equivalent of up to 530,000 full time jobs across the EU 25. This would also translate into huge energy and emissions savings.[15]

9 See *www.energy-assessors.org.uk/site/Home/tabid/587/ctl/Edit/mid/1110/site/NationalOccupationalStandardsNOS/tabid/737/Default.aspx.*

10 See *www.g-lecskills.com/energy/energyassessment.php.*

11 Jean Lambert MEP, 2006, **Hothouses: Climate change and London's housing.**

12 See *www.kirklees.gov.uk/community/environment/grants.shtml* and *http://www.kirklees greenparty.org.uk.*

13 LGA, March 2008, **Switch off, switched on: how to cut every household's carbon footprint and energy bill**, especially p8-10.

14 Jean Lambert MEP, 2006, **Hothouses: Climate change and London's housing,** p8, p13; **Energy Use in Homes:** A series of reports on domestic energy use in England: Thermal Insulation (based on 2001 data), BRE/Defra/Energy Savings Trust, 2005, tables 1.5, 2.5, 3.6. Figures for lofts is based on unconverted lofts with no or low levels of insulation.

15 EURIMA press release, 8.3.2008, **Buildings – a wasted opportunity to secure Europe's energy?**

16 See European Commission, 23.1.2008, 2008/0016(COD), Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, *www.ec.europa.eu/energy/climate_actions/doc/2008_res_directive_en.pdf.* This is part of the EU climate change package.

17 BERR, June 2008, UK Renewable Energy Strategy: Consultation, Executive Summary, p3. The 15% target relates to total energy use, not just electricity.

18 Douglas-Westwood/BERR, June 2008, **Supply Chain Constraints on the Deployment of Renewable Electricity Technologies**, p15.

An ambitious revision of the Energy Performance of Buildings Directive could drive further possibilities – both in the UK and across Europe.

Such developments would also involve a revolution in the provision of insulation services and a massive expansion of green jobs in this sector at a variety of skill levels.

Renewable Energy

What the UK's 15% renewables target means for green jobs

The European Commission's proposed renewable energy directive is set to commit the European Union to producing 20% of its energy from renewable sources by 2020. As part of these proposals, each member state is allocated a specific target.[16] The UK has been allocated a target of 15%, which the UK Government describes as 'very challenging' although many other member states have been given much higher targets.[17] Clearly this EU-derived target has the potential to give a much-needed impetus to investment in renewables in the UK, and, as a result, investment in green jobs in the renewable energy sector and related industries.

According to a Douglas-Westwood report for BERR, **the UK's current renewable energy production accounts for 16-26,000 jobs in total.** The higher figure takes into account jobs across the supply chain, from development through to operation.[18]

The report identifies 'major practical constraints' both within and beyond the supply chain which will undermine Government ambitions in terms of renewable investments.[19]

The Renewable Advisory Board has established a target of 38.5 GW of renewable electricity capacity by 2020, as part of the UK's 15% total renewable energy target, including 18GW offshore wind and 13 GW onshore wind.[20]

The Douglas-Westwood report calculates that this level of renewable capacity would require '122-133,000 jobs to manufacture, construct and operate'.[21] However, it remains to be seen whether these jobs will accrue to the UK, given the current free-market framework.

There is also significant potential from investment in solar. According to David Matthews, Chief Executive of the Solar Trade Association, *"The opportunities solar provides for the UK economy are massive with a huge potential for job creation – in excess of 100,000 people could be employed in the installation of solar across the country. Today, we are already witnessing these size industries in our European neighbours. Solar benefits both the homeowner and the economy."*[25]

The UK currently generates just under 5% of its electricity from renewable sources.[22]

In Germany there are currently 250,000 jobs in renewable energy.[23] In the UK there are 26,000, at best.[24]

"Of the 25 EU member states, the UK ranks as 23rd in terms of the percentage of renewable energy we use, just ahead of Luxembourg and Malta. ... If we don't get this right now, we are in danger of being left so far behind our European counterparts in developing sustainable energy systems that we never catch up."

Bridget Woodman, Sustainable Energy Policy Lecturer, Parliamentary Brief, July 2008.

19 Ibid., p5.

20 Renewable Advisory Board, June 2008, **2020 VISION – How the UK Can Meet its Target of 15% Renewable Energy.**

21 Douglas-Westwood/BERR, op. cit. p6.

22 BERR, July 2008, **UK Energy in Brief**, p29.

23 RenewableEnergyWorld.com, news release, 8.4.08, **Renewable Energy Jobs Soar in Germany.**

24 Douglas-Westwood/BERR, op. cit. p15.

25 Solar Trade Association, press release, 26.6.08.

UK underperformance
UK: 40% of EU's total wind resources
UK: 4.2% of EU's total installed wind power

"There is still considerable uncertainty about government attitudes to the renewable sector going forward and there is an argument that the development of a strong renewable energy sector and moves to build a new generation of nuclear power stations are mutually exclusive as both would rely heavily on the provision of public finance."

Prof. Anthony Thomas, South Bank University.

26 See *www.reports.eea.europa.eu/eea_report_2006_8/en/factsheets/EN34_EU-25_Energy_ Subsidies.pdf.*

27 28 30 European Wind Energy Association, **Strategic Overview of the Wind Energy Sector** – *www.ewea.org/index.php?id=194, consulted 28/05/08.*

29 31 EWEA, *www.ewea.org/fileadmin/ ewea_documents /mailing/windmap-08g.pdf,* 2007 figures.

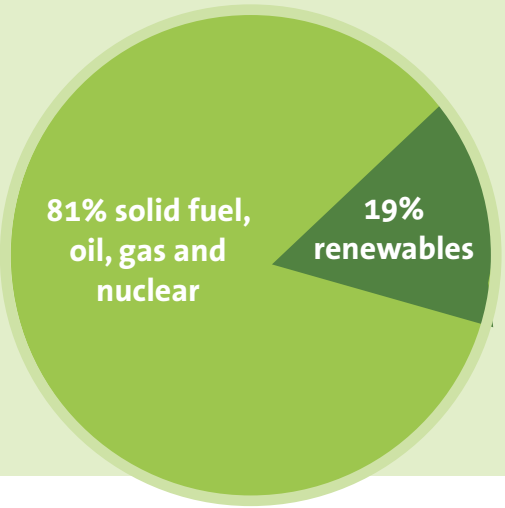
32 Goldemberg, J., 2004, **The Case for Renewable Energies**, International Conference for Renewable Energies, Bonn, quoted in NEF, 2005, **Mirage and Oasis**, p41.

33 **Meeting the Targets & Putting Renewables To Work**, MITRE Monitoring and Modelling Initiative on the Targets for Renewable Energy, UK Country report for European Commission, undated – *www.mitre.energyprojects.net/links/MITRE_United%20Kingdom.zip,* tables 2,3, 11, and p14.

Barriers to progress: fossil fuel and nuclear subsidies

Contrary to common perception, the solid fuel, oil and gas and nuclear industries remain heavily subsidised across the EU. According to the European Environment Agency, 81% of EU15's energy subsidies go to solid fuel, oil and gas and nuclear, with only 19% going to renewables. [26]

EU15 energy subsidies



For many years Greens and other environmental campaigners have been calling for an end to subsidies for fossil fuels and nuclear, and for enhanced subsidies for renewables. Without a shift in this extremely uneven playing field, we will not see the level of investments in renewables that is so urgently needed. Even though the renewables sector is expanding, it is doing so far too slowly. This much-needed shift in investment subsidies in favour of renewables would accelerate the number of green energy jobs.

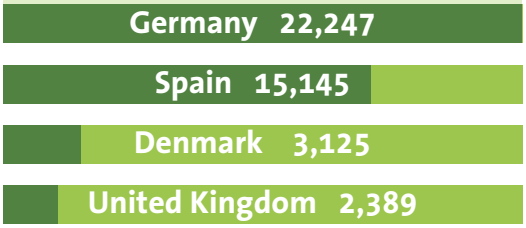
The Wind Sector

According to the European Wind Energy Association, '3.3% of the EU's electricity consumption is met by wind power (2007), but this share could increase to almost one quarter by 2030, provided that the right framework is introduced and current distortions in the EU energy markets are removed. If combined with serious energy efficiency measures, the share of wind energy could reach 30% by 2030'. [27]

Indeed, wind already represents 30% of all new electricity generating capacity installed in the EU in the past five years.

19% of Denmark's electricity needs were met by wind power in 2005. [28]

Wind energy production in MW [29]



Compared to the EU's lead wind-energy producing countries, the UK's current wind-energy production levels are extremely poor.

Denmark produces 3,125MW of wind energy, Spain produces 15,145MW, and Germany produces 22,247MW. In contrast, the **UK produces 2,389MW**, a little more than one tenth produced by Germany. France and Italy also produce marginally more wind-energy than the UK. In 2007 the EU as a whole was producing 56.5GW of wind energy. [29]

Based on these figures and estimates of industry expansion, EWEA predicts that the EU will have 80GW of wind energy capacity installed by the end of 2010. [30]

Thousands of green jobs

According to their national statistics, the wind energy sector employs 73,800 people in Germany, 21,000 in Denmark, and 35,000 people in Spain. [31] The number of jobs created per unit of energy is particularly high for wind energy. Nuclear energy produces 75 jobs per year per TWh of power, petroleum, oil and gas produce 250-265 jobs, and

coal produces 370 jobs per TWh. By contrast, wind power produces 918-2,400 jobs.[32]

EU studies modelling employment growth due to the wind energy sector for the UK have predicted that the sector could create between **7,900** to **14,900** UK jobs per year by 2010, rising to between **12,400** and **35,400** per year by 2020. The broad range is dependent

on the amount of wind energy produced. The lower jobs figure is based on wind energy production of 5,566MWe in 2010, rising to 7,354MWe by 2020. The higher jobs figure is based on wind energy production of 6,670MWe in 2010, rising to 30,263MWe by 2020. [33]

With current wind energy production at 2,389MW – or 2.4GW – it is unlikely that the UK will even make the lower production estimate for 2010. Clearly a step-change in wind energy outcomes is long overdue for the UK. Maintaining, if not increasing, the so-called Merton Rule (where at least 10% of all energy requirements in large new-build developments must come from renewables) in London, and across the UK, would be an indicator of serious intent.

Potential for a massive UK expansion in wind energy

Clearly the UK has huge potential for investment in wind energy, and is the windiest country in Europe, with 40% of the EU's entire wind resources. The British Wind Energy Association estimates that the UK could be meeting 35% of its electricity needs from wind by 2020.[34] With the UK accounting for only 4.2% of the EU's total installed wind power capacity, it's hard not to see this as a hugely wasted opportunity and as a damning failure of Government.

Jobs in the wind energy sector: manufacturing is the key

Based on the Renewable Advisory Board's wind power projections, estimates of UK jobs in wind energy by 2020 range from 6,845 to 43,673.[35] The reason for such a wide range is due primarily to the extent to which turbine manufacturing is established in the UK. For example, the higher figure of 43,673 jobs is based on three turbine manufacturers being based in the UK and accounting for 50% of installed UK capacity. Furthermore, the greater the manufacturing presence in the UK, the more UK jobs will be created in the industry's supply chain. With half wind capacity being manufactured in the UK, an additional eight further jobs per MW would be created in the supply chain. The least promising prediction, from the perspective of UK green collar jobs, is where only 10% of capacity derives from UK manufacture, probably with one manufacturer. In this scenario, only three extra jobs per MW would be created in the wider supply chain. These lower estimates of wind industry manufacturing deliver the lower prediction of 6,845 jobs by 2020. [36]

Levels of job creation determined by the presence or absence of turbine manufacturing capacity partly explains the higher job levels for Denmark, Spain and Germany, who are all industry

London Array

Assuming it goes ahead, the London Array is predicted to be the world's largest offshore wind farm. It will be build 12 miles off the Kent and Essex coasts in the outer Thames Estuary, and on completion should generate up to 1GW of electricity – enough for 750,000 London homes. The project plans 341 turbines, which will take four years to install.[40]

34 BWEA, UK renewable energy industry can meet EU 2020 target with effective Government support, 13/08/07. BWEA, **Wind farms of the UK**, June 2008.

35 Douglas-Westwood/BERR, op. cit. p18.

36 Ibid., p17.

37 EWEA, *www.ewea.org/index.php?id=194*.

38 See **Meeting the Targets & Putting Renewables To Work**, MITRE Monitoring and Modelling Initiative on the Targets for Renewable Energy, UK Country report for European Commission, undated. *www. mitre.energyprojects.net/links/MITRE_United%20Kingdom.zip,* tables 2,3, 11, and p14.

39 SKM, June 2008, **Quantification of Constraints on the Growth of UK Renewable Generating Capacity**, p2.

40 See *www.londonarray.com/about*. Doubt was cast over the project when one of the three investors, Shell, pulled out. At time of writing, the project will be a 50/50 venture between German-based energy group E.ON and Danish utility Dong Energy – Guardian, 22 July 2008.

Clipper Windpower – investment in North-East

US energy giant Clipper Windpower is developing next-generation prototype wind turbines at the New and Renewable Energy Centre (NaREC) facilities at Blyth in North-East England. This state-of-the-art facility is the largest wind turbine testing centre in the world. When these prototypes have been developed, the economic benefit to the region – and to the UK – will depend on whether the new turbines are manufactured in the area.[41]

Skills constraints – offshore wind

As well as a range of technical and supply side constraints, the Douglas-Westwood report concludes that 'experience and desire to work offshore are becoming increasingly scarce'.[42]

leaders. In 2006, European turnover in turbine manufacturing was around €9 billion.[37]

The earlier European Mitre study already referred to takes into account the absence of turbine manufacturing capacity in the UK when predicting job figures. Clearly, investment in turbine manufacturing would significantly benefit the UK in terms of additional green collar jobs.[38]

New investment and government action will be needed if the green jobs potential is to be maximised, as there is currently no manufacturing of large wind turbine generators in the UK.[39] Indeed, we have seen a neglect of the manufacturing sector from successive governments.

Skills shortages in renewables – and beyond

The Douglas-Westwood report sees the skills shortages in the renewables sector as indicative of a more general skills crisis in engineering:

'The skills shortages are not specific to the renewables sector, or the energy sector as a whole, but symptomatic of an historic lack of national investment in all levels of skills development in engineering and the trades.

'Although there seem to be plenty of graduates and post-graduates willing to enter the renewables sector, the general opinion from companies within the renewables supply chain is that there is a lack of experienced staff, especially engineers and project managers in the UK, willing to enter the sector. Cross-sector competition for experienced staff was also highlighted by many of those interviewed as an issue that affects a company's ability to hold onto staff and build good teams. With all energy sectors struggling with the same issue, developing renewable sectors are trying to compete with the more traditional

sectors of Oil & Gas and Marine who have plenty of work and much bigger cheque books.'[43]

It is widely acknowledged that there is a general skills shortage in engineering.[44] This means, for example, that the renewables sector is having to complete with other long-established energy providers for a finite experienced engineering skills base.

Looking to the period up to 2020 in light of the requirements of an expanding renewables industry and UK education patterns, the Douglas-Westwood report concludes that 'the UK renewable energy programme is likely to be hit by skills shortages'. It points to a need for a revitalisation of apprenticeships, working with small and medium sized enterprises (SMEs) in the sector, and ensuring employer buy-in, as necessary elements in addressing the skills shortages.[46]

Another recent report confirms this analysis. When tasked by Government Department BERR to assess 'the most important current and potential future supply chain constraints that could limit the deployment of renewable electricity', Sinclair Knight Merz included 'skilled engineering resources', pointing to 'delays due to lack of skilled engineering resources throughout the process of developing, manufacturing, installing, operating and maintaining renewable generation plant involving all technologies.'[47]

41 NaREC press release, 5/10/07, **Clipper selects the north east for 'next generation' turbine development.**

42 Douglas-Westwood/BERR, op. cit. p20.

43 Douglas-Westwood/BERR, op. cit. p23.

44 For example, see Science in Parliament, Summer 2008, p3, Dr David Brown, **Engineering Skills: Investing in Tomorrow.**

45 Green STEM for the Future, *www.efscarbontrading.org/esd/index.php?option=com_content&task=view&id=98&Itemid=27.*

Barriers to progress: need for a feed-in tariff

Seventeen European countries currently have feed-in tariffs systems in place. These systems involve governments guaranteeing long-term premium payments for primarily small-scale electricity generation from renewable sources such as solar and wind turbines, which would be fed into the grid. This would primarily focus on domestic and community renewable installations. In such schemes, governments set the tariff to be paid for each renewable technology, as well as the length of contract. Feed-in tariff policies are well established and widely adopted across Europe to stimulate take-up of small scale renewables.

According to the German Government 57 million tonnes of CO_2 emissions were saved in 2007 as a direct result of its feed-in tariff legislation. According to recent figures, Germany generated 14.2% of its electricity from renewable sources. Turnover in the German renewable industry rose by 10% last year to €24.6 billion and employment in the sector rose to 249,000 (compared to a UK sector that in 2006 had a turnover of just £290 million).

As well as giving guarantees and certainties for investors, the increased take-up of microgeneration which would almost certainly arise would stimulate green collar employment in the installation and maintenance of small-scale renewables, as well as contribute to renewable energy targets.

Despite repeated recommendations, the UK Government has yet to commit to a feed-in tariff for the UK. However, it is now consulting on whether to do so as part of the its renewable energy strategy. [48]

Conclusions

Clearly, what is needed is a comprehensive green skills strategy, which should include a skills action plan for the renewables sector, delivered with significant state funding.

To maximise the potential for green collar jobs, it is essential that investment in the expansion of the UK's wind energy sector (as required by EU renewable targets) is steered to include manufacturing of turbines and associated components. National government has a major role to play. Other renewable sectors, including solar and wave energy, could also be expanded.

Other barriers to progress also need to be overcome. These include an ending of Europe-wide fossil fuel and nuclear subsidies, with the switching of investment to renewables, and the introduction of a feed-in tariff in the UK.

Green STEM

"There has been a recent focus in improving investment and take-up of study in the 'STEM' subjects – science, technology, engineering and maths. There is a need to increase the pool of people with STEM qualifications for subsequent training in specialised green industries, such as renewables. A further development has been the promotion of 'Green STEM' – which specifically links the environment with the teaching and learning of the STEM subjects. I participated in and helped promote an ongoing Green STEM project based at Hull University.[45]

Women are still chronically under-represented in STEM subjects, yet young women express great interest and concern for the environment. It should be possible to link that concern to STEM subjects and careers in green jobs."

Jean Lambert, Green Party MEP for London.

46 Douglas-Westwood/BERR, op. cit. p24.

47 SKM, June 2008, **Quantification of Constraints on the Growth of UK Renewable Generating Capacity,** p1.

48 BERR, June 2008, UK Renewable Energy Strategy consultation, Annex 2. This section draws on Friends of the Earth Briefing Note, April 2008, **What is a feed-in tariff and why does the UK need one to support renewable energy?** *www.foe.co.uk/resource/briefing_notes/feedin_tariff.pdf.*

Green jobs in Europe

The European Trade Union Confederation, ETUC, has produced a major study investigating the impacts of the EU's climate change and emission reduction policies on employment. It focuses on four key sectors of the European economy: energy-intensive industries (iron, steel, cement), transport, electricity and construction.

The study finds that whilst there will be job losses in areas which are carbon-intense, these should be compensated for by new greener jobs – either in the same sectors or elsewhere. The net result will be a moderate increase in EU employment in the sectors studied. [49]

Some key findings include:

- The energy-intensive sector is not putting enough effort into research and development.
- The transport sector accounts for around 15 million jobs (in EU25).
- By reducing traffic volumes by 10% and creating more balance through greater use of rail and public transport, the number of direct and indirect jobs in rail and public transport (tramway, bus, underground, bicycles) could be multiplied fourfold. †
- A reduction in electricity consumption would cause job losses, but additional jobs would be created in energy efficiency/energy services and 'the net impact of energy savings on employment would be positive'.
- Jobs related to renewable energy would grow by around 50%.
- The building and construction sector is 'an important pool of potential employment resulting from measures to prevent climate change'.
- Thermal renovation of buildings, especially older housing, is extremely intensive in direct employment, creating jobs which are 'mostly non-relocatable because connected to a territory or to regional or national markets'.
- The Energy Performance of Buildings Directive could create a further 30,000-90,000 man-years in EU 15, with an additional 90,000 man-years in the new Member States. Job gains of over 1 million man-years could result from improving energy quality to 50kWh/m2.
- Training workers in sustainable building remains an important challenge.
- An initiative to thermally renovate social housing would be particularly beneficial, in terms of climate objectives, job creation, addressing fuel poverty and improving housing conditions.
- As an example of redeployment across sectors, 'jobs related to energy audits could offer redeployment possibilities for older workers in the construction sector'.
- Large-scale job redistribution will occur primarily within sectors rather than between them.

The ETUC recommendations include:

- Substantial public resources to enable investment, including public aid for training.
- Further studies to evaluate impacts on jobs.
- A European observatory for economic and social change related to climate change.
- A tripartite European dialogue (employers, unions, public authorities) to implement climate policies.

49 ETUC, 2007, **Climate Change and Employment: Impact on employment in the European Union-25 of climate change and CO_2 emission reduction measures by 2030,** p183-186.

† Compared to the reference scenario.

Greening industry and workplaces: the role of business and unions

The challenges of climate change and other environmental pressures will mean a transformation of industry and business. This is part of a radical shift towards a sustainable economy and sustainable society that Greens have been advocating for many decades. It will mean significant sectoral shift, with some industries becoming transformed beyond all recognition, and also the emergence of new industries and sectors. Environmental change will affect all sectors and therefore all work and workplaces, but to varying degrees. The greening of business and industry needs to work at a number of different levels, and involve businesses, employees, unions and customers.

The supply chain

One way or another, virtually every business is a customer of other businesses. Businesses which require greener products and practices from their suppliers can make a major contribution to the greening of supply chains, which can bring about long-term change across many sectors.

As major purchasers and procurers, public sector organisations have a particularly important role to play in helping to 'green' their supply chains. Green and sustainable procurement increases and stimulates demand for greener products and practices, accelerating and acting as a catalyst for the greening of industry.

Green business standards

The Mayor of London's **Green Procurement Code** is an example of an initiative designed to encourage best green procurement practice in private and public sector organisations. Over 160 London-based organisations have signed up to the code, and they can progress from 'entry level' to bronze, silver or gold status. Progress depends on having independent audits, and a toolkit and other support is available to participating organisations. According to its website, since its launch in 2001, members of the Green Procurement Code have spent £379 million on green products and diverted 1.3 million tonnes of waste from landfill. In 2006, the purchase of green products resulted in 175,000 tonnes of carbon dioxide savings, the equivalent yearly emissions of over 29,000 households. [50]

Another London initiative is the **Green Mark**, developed by London Environment Centre (part of London Metropolitan University), and sponsored by London Development Agency and the EU European Regional Development Fund. Green Mark is described as 'an easy to use system that helps companies integrate a simplified environmental management system that can be used as a platform to reach full ISO 14001 accreditation', a rigorous internationally recognised standard of environmental management. [51]

The Green Mark operates a three level accreditation system. In total over 150 businesses have obtained a Green Mark status, with over 90 named organisations listed on the Green Mark website (as of 19 March 2008). The Green Mark logo is displayed prominently on the websites of many of these organisations.

50 *www.greenprocurementcode.co.uk/?q=node/42,* consulted 17/03/08.

51 *www.green-mark.co.uk/what/benefits1.cfm,* 17/03/08.

"The CBI believes tackling climate change is everyone's business - so government, employers and employees will have a role to play."

Neil Bentley, Director of Business Environment, CBI.

"A key contribution from business should be to adopt best practice wherever possible, going beyond minimum standard legislation. This should involve environmental management systems, green procurement, carbon reduction programmes and comprehensive environmental (and social) reporting. However, increasing best practice is not an argument against regulation, which remains essential for further progress."

Jean Lambert, Green Party MEP for London.

The greening of big business?

With greater economics of scale than small or medium sized businesses, big business is in a strong position to adopt environmental management systems, green or sustainable procurement practices, and carbon reduction programmes. Some companies have adopted climate change or carbon reduction strategies, with commitments to measure and reduce the impacts of their activities. For some large companies this can translate into comparative advantage in a competitive market. Company claims to 'be the greenest' can, of course, be interpreted in terms of marketing strategy and an objective to develop a greener, more positive corporate image.

It is therefore important that green claims can be substantiated, and that consumers are not subjected to misleading 'greenwash'.

Another issue relates to the exporting of carbon emissions outside the UK. Large corporations based in the UK, which are listed on the UK stock exchange and invested in by UK pension holders, frequently derive their profits from investments and operations overseas. These emissions, however, do not show up as UK emissions, being effectively 'off balance sheet'. For high emission investments, such as oil and gas production or manufacturing, the carbon reductions made at UK headquarters represents a tiny proportion of those companies' total global emissions. Indeed, Christian Aid has calculated that UK companies account for up to 15% of global carbon emissions, a much larger proportion that the often quoted 2% figure due from emissions generated from within the UK itself. [52] This discrepancy means that corporate claims relating to carbon reduction and other green initiatives need to be closely scrutinised, taking into account global operations, especially in countries with low environmental standards. It also means a missed opportunity in the development of green jobs in other parts of the world and a distortion of the contraction and convergence criteria when estimating per capita emissions.

However, whilst taking these caveats into account, actions by large companies to green their supply chains and reduce the carbon emissions of their operations can have clear and measurable positive impacts. The Confederation of British Industry, the CBI, has worked with three independent organisations to develop a programme to manage and reduce its energy use and carbon emissions. [53]

It has also established a **Climate Change Task Force**, made up of 18 Chairmen and Chief Executives from some of the UK's biggest companies. According to the Task Force, 'a much greater sense of urgency is required if the UK is to meet its targets for reducing greenhouse gas emissions'. It believes that 'the next two or three years will be critical.' [54]

52 Christian Aid, 2007, **Coming clean: revealing the UK's true carbon footprint.**

53 See CBI, November 2007, *www.cbi.org.uk/pdf/cbi environmentalfootprint.pdf.*

54 CBI Climate Change Task Force, November 2007, **Climate change: Everyone's business,** summary, p1.

EMAS, the Eco-Management and Audit Scheme, is a voluntary initiative designed to improve companies' environmental performance, established by the European Union. It recognises and rewards organisations that go beyond minimum legal compliance and continuously improve environmental performance.

Participating companies must produce a public environmental statement, which is independently verified, reporting environmental performance. Crucially, EMAS requires the active involvement of employees. The Green Group in the European Parliament were successful in getting the Parliament to operate to EMAS standards.

Green workplace representatives

The active involvement of trade unionists in these changes is not only to be welcomed and encouraged – it is, in fact, a necessity. The TUC's Green Workplaces project has demonstrated how trade union involvement in particular workplaces has led to greater staff engagement with the green agenda and the need to change behaviour at work (and, as a knock-on effect, at home as well). It is also a potential source for additional workplace enthusiasm, innovation and action. As the project's case studies show, greening the workplace with union participation can save employers money – for example, through energy savings.[55]

Regulation – a global perspective

"In an increasingly globalised economy, the importance of regulation and improved environmental standards cannot be over-emphasised. Much of the manufactured goods used in the UK are imported, frequently from outside Europe. If we are serious about tackling climate change, high environmental standards must be applied more universally. As major consumers of these goods, we are at least partly responsible for the manufacturing-related emissions in such countries, with production chains often controlled by western multinationals. Higher global standards will help protect the health of workers and local environments, as well as stimulate low-carbon innovation. Relying on voluntary codes and best practice is unreliable and insufficient. EU and national level regulation can help in the process of building better regulation, globally."

Jean Lambert, Green Party MEP for London.

The role of Unions

'Just transition' to a sustainable economy

Trade unions, along with many Greens, have rightly argued that the transformations of industry must be based on principles of a *just transition*, which seek to ensure that these structural changes are managed in a socially just way. This requires that workers have a participative, partnership role to play in the transition, and must not be unfairly disadvantaged as a result of changes. Part of a just transition includes the involvement of trade union 'green representatives' in the workplace, who actively participate in 'greening' their workplaces, companies and industries.

Along with trade unionists, the Greens have been calling for the UK Government to recognise trade union environment reps, by giving them rights at work similar to those enjoyed by health and safety representatives. This would include time off to undertake duties and relevant training, and would send a signal that trade unions have an important role in greening workplaces and industry. It is also an important component of a just transition approach to greening the economy. At time of writing the Government continues to resist this call.

55 TUC, March 2008, **Go Green At Work.**

"As the Greens' co-ordinator on the European Parliament's Employment and Social Affairs Committee, I know how important it is to ensure that Europe's green and climate change agenda is delivered in partnership with trade unions, following 'just transition' principles.

Working with unions, the potential for new green jobs and training is huge – in the UK and across the EU. Legal recognition for environment reps is an important part of this process."

Jean Lambert, Green Party MEP for London.

A Just Transition

The TUC has laid out the following principles and provisions for a just transition approach to climate change and its workplace challenges: [56]

PRINCIPLES

1 *Environmental transition and sustainable development*
2 *Representation and employee/trade union involvement*
3 *Stable employment and long-term planning*
4 *Social justice and a fair distribution of costs*
5 *Government backing and a united purpose*

PROVISIONS

1 *A national framework/mechanism to ensure long-term planning and representative decision-making on environmental transition*
2 *Education and training to aid sustainable employment*
3 *Decent jobs – in terms of pay, terms and conditions and safety*
4 *Greening the workplace*
5 *Flexible transition packages for workers*
6 *Support for communities – in the context of environment-related job losses*
7 *Funding – possibly drawn from revenue accrued from auctions in the EU Emissions Trading Scheme*
8 *Monitoring and further research – in particular on the UK skills base*

56 TUC, 2008, **A Green and Fair Future: A Just Transition to a Low Carbon Economy**, p24-30.

Skills challenges for green work

A London perspective – skills and unemployment

London has the highest rate of unemployment in the UK. According to Labour Force Survey figures from 2006, London's unemployment is 7.6%, compared with a UK average of 5.2%. London's 301,000 unemployed amounts to more than the totals for Wales, Scotland and Northern Ireland combined, as well as being far higher than any other English region.[57]

London's high unemployment is further concentrated in particular boroughs. Three London boroughs have the highest unemployment rates of all local authorities in Great Britain. These are Tower Hamlets – 14.2% (12,400), Newham – 11.8% (12,500) and Hackney – 11.6% (11,200).[58]

London's chronic unemployment problem is often ignored because it is at odds with the national picture, and frequently glossed over by national politicians who refer to the UK's low unemployment rate. Indeed, the UK still has one of the lowest unemployment rates of any EU Member State, and well below the EU average, although it is rising.[59]

London's social and economic problems must not be obscured by UK trends not shared by London. It is therefore essential that job opportunities, job creation, and skills training are placed high on the political agenda for Londoners. See, for example, my submission on the London Skills and Employment Board Strategy consultation.[60]

London's high unemployment rate, taken together with its extremely high levels of wealth creation and large gap between rich and poor, represents London's failure to share its wealth and opportunity equitably. This can also be seen as a failure in terms of sustainable development and social and economic justice.[61]

However, developments in green work have the potential to move things in the right direction, and to provide new sustainable jobs for Londoners. This should include new opportunities in emerging green industries, expansion of existing public services, such as transport, and new opportunities as a result of changes in existing sectors as well as the mainstreaming of green procurement and initiatives to 'green the workplace'.

The objective of making the London 2012 Olympics the most sustainable games ever provides an opportunity for the provision of relevant training and skills initiatives. The London Employment and Skills Taskforce 2012 needs to ensure it make full use of these opportunities.

57 London worst region in the UK for unemployment, June 19 2006, *www.hrmguide.co.uk/jobmarket/regional_unemployment.htm.* See also *www.london.gov.uk/mayor/economic_unit/docs/wp15_worklessness_in_london.pdf.*

58 GLA Data Management and Analysis Group (DMAG) Briefing 2007-18, September 2007, **Londoners and the Labour Market:** key facts, p22, drawing on ONS data modelling.

59 **Eurostat, 2008, Key figures on Europe 2007/08**, p75. Rates defined in accordance with ILO standards. EU27 unemployment average is 7.9%, and UK unemployment is 5.3%, based on 2006 figures. See *www.epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EI-07-001/EN/KS-EI-07-001-EN.PDF.*

60 See Jean Lambert MEP, January 2008, Response to consultation on **Skills and Employment in London**, draft strategy of London Skills & Employment Board *www.jeanlambertmep.org.uk/DocumentStore/SkillsBoard_JL_consultation_response.pdf.*

61 For a detailed account of economic injustice in London, see **Unequal City: London in the Global Arena**, Chris Hamnett, 2003, Routledge.

Unemployment in Europe

The issue of job creation in the context of greening employment is also a Europe-wide issue. Referring specifically to climate change policies, the European Trade Union Confederation note:

'While employment is not the primary objective of policies to counter climate change, the employment situation in the European Union, with 19 million jobless, requires the public powers to make the most of synergy between climate protection and the development of quality jobs.' (ETUC, op. cit., p186.)

A major role for skills

Even with such developments, it cannot be assumed that such jobs will automatically go to London residents. Indeed, jobs in London have in fact increased by 700,000 between 1997 and 2007. London has the capacity to draw in workers from within the UK and beyond to meet immediate labour market needs.

According to Government figures, the number of jobs in London has risen from 3.9 million in 1992 to 4.6 million in 2006, an average increase of 50,000 per year. However, the numbers commuting into London for work from other regions continues to rise (670,000 in 1997, 720,000 in 2007) and demographic change has also meant London's working age population has increased significantly. These factors have contributed to a scenario where London has both high levels of unemployment and a large and increasing number of jobs. [62]

A central challenge is to make new Green jobs in London of direct benefit to unemployed Londoners. That can only be achieved with the help of an effective and far-reaching skills strategy that anticipates change rather than simply reacting to it.

Following the Stern Review, the UK Government established CEMEP, the Commission on Environmental Markets and Economic Performance. CEMEP was tasked with bringing forward recommendations 'to drive investment and innovation in environmental markets in the UK, and in so doing seize the substantial opportunities for wealth and job creation'. [63]

The Government is aiming for the UK to be a world leader on skills by 2020. [64] In 2007 the Government claimed that 'By 2020,the culture of 'only the best is good enough' that we are inculcating today will lead to a society that is doing better than ever in our schools, workplaces and homes.' [65]

Nevertheless, sizeable, if not formidable, skills challenges remain. Indeed, the OECD's assessment published later that year was that 'the educational performance of the UK population is below the standard of the best performing OECD countries'. [66]

62 HM Treasury, March 2007, p10, **Employment opportunity for all: tackling worklessness in London.** *www.hm-treasury.gov.uk/media/B/8/bud07_london_1421.pdf.*

63 Commission on Environmental Markets and Economic Performance (CEMEP) Report, November 2007, p3.

64 Leitch Review of Skills Final Report: **Prosperity for all in the global economy,** December 2006; Department for Innovation, Universities and Skills, July 2007, **World Class Skills: Implementing the Leitch Review of Skills in England**, p5.

65 DIUS, July 2007, op. cit. p5.

66 OECD, September 2007, **Economic Survey of the United Kingdom, 2007.**

documents frequently refer to the Commission for Employment and Skills as 'employer-led'.[68] Given the importance of establishing a coherent and comprehensive green skills strategy it would have been preferable for this body to be 'Government led'.

It is undeniable, however, that this is an urgent matter which, if inadequately addressed, will undermine the transition to a green, sustainable economy able to meet our climate change obligations.

Over 70% of our 2020 workforce has already completed its compulsory education.[69] **This means that contemporary skills strategies and programmes must place a major focus on post-compulsory education, and action on skills must be a *specifically Government-led* urgent priority.**

Demand for appropriate skills will be high

"Policy seems to be moving quickly from conventional energy sources and conservation approaches only, towards encouraging greater efficiency in energy usage and application using the outputs of the renewable sector. Thus, demand for appropriate skills will be high."

Energy and Utility Sector Skills Council.[71]

When looking at the green skills challenge in particular, major questions remain. Indeed the Government's own CEMEP report recommended that:

'To better understand where employment opportunities and skills needs are emerging in environmental markets, all stakeholders have a responsibility and a role to play. Government should map the various fora where these issues are already under discussion to help identify whether existing bodies are sufficient to take the agenda forward.

Following the Energy White Paper request to Sector Skills Councils (SSCs) to report on skills gaps in the energy sector, Government should invite the UK Commission for Employment & Skills to review with SSCs the implications for employment and skills of the move to a sustainable, low-carbon and resource efficient economy, and to make recommendations to Government.'[67]

It remains to be seen how effective the recently formed Commission for Employment and Skills will be in reviewing the energy skills gap with the Sector Skills Councils. Government

Skills – need for a green skills strategy

One difficulty in assessing the skills needed in relation to the greening of the economy and industry, is the extent to which green employment is spread across a large number of Sector Skills Councils (SSCs). In looking at the skills gaps in London for energy efficiency and renewable energy, the London Energy Partnership found that six SSCs have a major and direct impact on skills and training in this area.[70]

London's Skills Strategy

The London Skills and Employment Board's recent Skills and Employment Strategy for 2008-2013 has set a series of strategic aims designed to 'develop a skills and employment system which supports London's globally competitive labour market by increasing the skill levels of Londoners and improving the productivity of employers'. One objective is to raise London's employment rate from 70.5% to 72%.[72]

The strategy is right to identify and focus on the particular needs of

67 CEMEP Report, November 2007, Recommendation 20.

68 For example, BERR UK Renewable Energy Strategy: Consultation, June 2008, p223; UKCES Business Plan 2008-9, July 2008.

69 Defra, May 2008, **Building a Low Carbon Economy: Unlocking innovation and skills**, p14.

70 LDA/London Energy Partnership, March 2007, **Skills for a Low Carbon London: Summary Report and Recommendations**, p12.

71 Occupational and Functional Map of the UK Renewable Energy Sector, p 14, Energy and Utility Skills (Sector Skills Council). *www.summitskills.org.uk/public/cms/File/Renewables/Occupational%20Functional%20Map%202006.pdf* The Energy and Utility Skills Sector Council (EUSkills) covers gas, electricity, and waste management. See London report – *www.euskills.co.uk/download.php?id=547.*

72 London Skills and Employment Board, July 2008, **London's Future: The Skills and Employment Strategy for London** 2008-2013, p5.

innovation and self employment) taking account of the work of the London Energy Partnership and the London Sustainable Development Commission.' [73] In simply referring to the work of other agencies which, although very important, do not have top-level responsibilities for skills, a major opportunity has been lost.

The strategy does highlight the important role of the Sector Skills Councils in identifying the skills needs of the various sectors. However, the strategy focuses on giving employers a

London's most disadvantaged groups, and make the link between lack of skills and London's high levels of unemployment, poverty and inequality. Nevertheless, it fails to include any meaningful commitments on sustainable development and the greening of work and skills. Under the chapter on future developments, there is **one paragraph on sustainability** which states that the outcomes of this strategy 'will contribute to sustainable development in London, including the challenges of climate change and ensuring that London continues to work towards becoming a low carbon economy'. It continues: 'We would expect delivery agencies through implementation of this Strategy to consider the green skills needed in the future and the ways to encourage them (including through enterprise,

stronger voice in determining needs, rather than any other factors, such as sustainable development. [74] As part of this, the Alliance of Sector Skills Councils will identify priority sectors in London which need vocational qualification reform. Taken with other measures to streamline skills provision, this could certainly improve access to green skills and qualifications for Londoners. [75]

However, a central focus on green skills is clearly needed, and has been argued for by myself and Greens on the London Assembly. This should include following up the recommendations made in the LDA/London Energy Partnership report, **Skills for a Low Carbon London.** [76]

What is clearly needed is a comprehensive and unified green skills strategy, at London regional and at national level.

73 Ibid., p55.

74 Ibid., p7.

75 Ibid., Implementation Plans supplement, p10.

76 See – Jean Lambert MEP , January 2008, Response to consultation on **Skills and Employment in London**, draft strategy of London Skills & Employment Board *www.jeanlambertmep.org.uk/DocumentStore/SkillsBoard_JL_consultation_response.pdf.*

– Darren Johnson, October 2007, letter to Ken Livingstone, as response to LSEB consultation.

– LDA/London Energy Partnership, March 2007, **Skills for a Low Carbon London.**

Skills for a low-carbon London

The London Energy Partnership (LEP) has investigated the skills gaps and training needs of the energy efficiency and renewable energy sectors. Their report found that no less than 14 different Sector Skills Councils covered energy efficiency or renewable energy to some degree. However, it focused on the six Sector Skills Councils with the greatest direct impact on energy efficiency and renewable energy skills. [77]

The report's first recommendations included the need for the London Skills and Employment Board (LSEB) and the Mayor, to 'ensure that the energy efficiency and renewable energy sector are fully included in their work'. It also urged the LSEB to 'work with the Sector Skills Councils with an energy efficiency/renewable energy footprint' in order to help ensure that 'energy efficiency is fully integrated into Sector Skills Agreements, National Occupational Standards and qualifications frameworks.'

It further urged the Skills Board 'to encourage colleges and the Learning and Skills Councils to build collaboration and rationalise education and training provision across London'. [78]

A second recommendation – to set up an **Energy Trainers' Forum** for London – has now happened. [79] According to the LEP report: 'There is an urgent need for co-ordination of energy efficiency and renewable energy training across London. The London Energy Partnership is in a unique position to bring together key players, including training providers, professional/trade bodies, Skills for Business and funding bodies. This body needs to have strong and clear links with the Skills and Employment Board, and directly feed into their programme of work.' [80]

In the light of an ongoing need to quantify, plan for, and invest in green jobs and skills, it remains essential that the priorities identified in Skills for a Low Carbon London are taken forward by the Mayor and the London Skills and Employment Board, with appropriate funding.

77 These are: Asset Skills, Construction Skills, EU Skills, Lifelong Learning UK, SEMTA, and Summit Skills. LDA/London Energy Partnership, March 2007, **Skills for a Low Carbon London,** Summary Report and Recommendations, p12.

78 LDA/London Energy Partnership, March 2007, **Skills for a Low Carbon London,** Summary Report and Recommendations, p34.

79 London Energy Partnership newsletter, January 2008. The body is in fact called the **Energy Skills for London Forum**.

80 LDA/London Energy Partnership, March 2007, op. cit. p34.

Cedefop, the European Centre for the Development of Vocational Training, has studied tourism, nanotechnology, agri-food and wood and will soon launch reports on the health and environment sectors. In addition, it will be working on the basis of surveys to identify employers' expectations of skill needs. The studies cover 25 member states of the European Union (Bulgaria and Romania are not covered), plus Norway and Switzerland. Cedefop has also published **Future skill needs in Europe: focus on 2020** as a contribution to the Commission's forthcoming review of skills for 2020. [91]

Skills – the European dimension

EU climate change package

The European Parliament and Council are in the process of finalising the details of the EU climate package. [81] This will be decided using the co-decision mechanism. [82] The key objectives by 2020 of reducing greenhouse gas emission by 20-30%, reducing energy consumption by 20% and reaching 20% of total energy consumption from renewable sources will have major impacts on the industrial sectors across the EU – in terms of restructuring, employment and skills. [83]

Given the importance of meeting these targets, and ultimately going beyond them, it is necessary for EU policy on skills and employment to play a central role. However, so far EU-level progress on developing the links between environmental challenges, jobs and skills has been far too slow.

In 2006 the Spring European Council agreed four priority areas as elements of a 'renewed' Lisbon Strategy, which have been reaffirmed in subsequent Presidency and Commission communications. The four priority areas are:

1 **knowledge and innovation,**
2 **unlocking business potential,**
3 **investing in people and modernising labour markets,**
4 **energy and climate change.** [84]

Much more progress is needed, however, in terms of dealing with energy and climate change in the context of skills and jobs. There is an urgent need for greater synergy at EU level.

To a degree this is now acknowledged. In relation to the four priorities, the Commission has stated 'these areas are inter-related; if pursued in parallel, they constitute an integrated policy approach'. [85] The European Council Spring 2008 conclusions acknowledged that: 'Taking into account that energy and climate change is an integral part of the Lisbon Strategy it will also contribute positively to broader growth and jobs objectives.' [86]

81 See http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosID=196657 and http://www.europarl.europa.eu/oeil/file.jsp?id=9538393.

82 Under co-decision, the European Parliament shares legislative decision-making power with Council.

83 European Commission, January 2008, **20 20 by 2020 – Europe's Climate Change Opportunity,** *www.eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0030:FIN:EN:PDF.*

84 Commission, Strategic report on the renewed Lisbon strategy for growth and jobs launching the new cycle (2008-2010): **Keeping up the pace of change**, 11.12.2007, especially parag 3.5; European Council, Presidency Conclusions 13/14 March 2008, parag 4-29.

However, policies are too often kept apart and on separate tracks. For example, a late 2007 Council resolution on education and training in the context of the Lisbon strategy, highlighted 'the added contribution of education and training not only to the Lisbon goals on growth and jobs, but also to meeting other challenges facing European societies, such as increasing globalisation, evolving demographic trends and migration, technological progress, climate change and sustainable development', yet the resolution fell short of including any explicit reference to developing a green jobs and skills agenda in its recommendations to Member States and the Commission.[87]

Council's update of the Employment Guidelines in 2008, which sets the framework for the next 3 years and informs the goals of the ESF, also failed to pick up the challenge of skills for meeting climate change, despite the best efforts of the European Parliament.[88]

This approach is further reflected in the UK Government's **Lisbon Strategy for Jobs and Growth: UK National Reform Programme – Update on progress.** Responding to a series of country-specific recommendations from the European Council, the Treasury report includes work done on the skills agenda and also work done on 'energy policy, climate change and sustainable development'. The policy areas are treated as totally separate and there is no reference to how these areas could be connected. Indeed, the approach to skills is defined in terms of 'making all public funding for adult vocational education demand-led', and asserting that the 'new Commission for Employment and Skills will place employers at the centre of the skills system' as part of 'further progress in creating a demand-led system'.[89] Whilst it may be that employers and the private sector will, in certain circumstances, seek a greener skills regime, this approach fails to give the political lead that is sorely needed. One of the key responsibilities of government in this area is to anticipate and make timely responses to skills gaps to facilitate the greening of industry and the wider economy.

Opportunities for progress are still available at EU level. In early 2008, the Council (Education, Youth and Culture) recommended that the Commission 'submit a proposal by the end of 2008 for an updated strategic framework for European cooperation in the field of education and training', which, whilst building on existing programmes, would also identify 'new goals in these areas'.[90]

A joint Council/Commission progress report on education and training also concluded that 'Reflections on an updated strategic framework for European cooperation in education and training should therefore start now. Given the crucial role of education and training to the Strategy for Jobs and Growth, this must be closely associated with the future developments of the Lisbon process.'[92] An ambitious European-level Green skills and jobs programme has never been more necessary. **The Commission is in the process of undertaking a major review of skills for 2020. This should be an opportunity to link the skills agenda to the EU's climate change objectives.**

85 Commission, Strategic report on the renewed Lisbon strategy for growth and jobs launching the new cycle (2008-2010): **Keeping up the pace of change**, 11.12.2007, parag 3.5.

86 European Council, Presidency Conclusions 13,14 March 2008, parag 17.

87 Council resolution, 15 November 2007, on education and training as a key driver of the Lisbon Strategy.

88 Council Decision on guidelines for the employment policies of the Member States, 19.06.07. See http://ec.europa.eu/employment_social/employment_strategy/pdf/guidelines07_en.pdf.

89 HM Treasury, September 2007, **Lisbon Strategy for Jobs and Growth: UK National Reform Programme – Update on progress**, parag 3.24 and 3.26.

90 Council (Education, Youth and Culture), February 2008, Key messages to the Spring European Council in the fields of Education/Training and Youth.

91 See Cedefop, 2008, **Future skill needs in Europe: focus on 2020;** *www.cedefop.europa .eu; press statement 18.2.08.*

92 Council, 2008 joint progress report of the Council and the Commission on the implementation of the 'Education and Training 2010' work programme – **Delivering lifelong learning for knowledge, creativity and innovation.**

European funds

The European Union's regional policy places a number of funds in the service of particular policy objectives. There are three main Structural Funds: European Regional Development Fund (ERDF), the European Social Fund (ESF), and the Cohesion Fund.

The ERDF and ESF have 'Regional Competition and Employment' as one of their main objectives, and both fund projects in the UK via the UK's Euro-regions. Priorities for spending are decided by national governments and regions, in accordance with EU guidelines.

The European Social Fund aims to improve employment opportunities, by improving skills and job prospects. The European Regional Development Fund aims to tackle regional disparities across Europe, supporting regional development through actions such as business innovation and regeneration. [93]

Structural Funds in London

For 2007-2013 London will receive £444 million – £120 million European Regional Development Fund (ERDF) and £324 million European Social Fund (ESF). It is receiving the most ESF funding of any English region. ESF in London is rightly concentrating on 'improving the employability and skills of the unemployed and economically inactive people' (priority 1.1), focusing on young people (1.2), people furthest from the labour market (1.3), improving basic skills, including ESOL (2.1), and increasing the number of employees with skills levels 2, 3 and 4. (2.2, 2.3). [94]

The ERDF in London has established the following priority axes:

1 Business innovation and research and promoting eco-efficiency
2 Access to new markets and access to finance
3 Sustainable places for businesses (with the theme of 'Environmental enhancement of working premises and surrounding spaces, and support for business clusters').

The London Mayor's Operational Programme elaborates this third priority: 'The main objective of this Axis is to encourage sustainable growth in small and medium size enterprises within economically and socially deprived areas of London so as to help secure their long-term regeneration. This will be achieved through

*The greening of **all** training*

The green dimension of training should not be restricted to training in specific environment-related subjects. All training programmes should incorporate an environmental component, and this should be a prerequisite for funding. So environmental elements can be incorporated, staff should be given relevant training and resources. [99]

93 See *www.lda.gov.uk/server/show/nav.00100l003.*

94 Mayor of London, London European Social Fund Regional Framework, January 2007 – December 2010. *www.lda.gov.uk/upload/pdf/London_European_Social_Fund_Regional_Framework_2007-2010.pdf.*

Funding and research as part of the EU climate package

The European Parliament's Employment and Social Affairs Committee, on which I am the Greens' co-ordinator, has been considering the ramifications for employment and social policy. The Committee is likely to recommend a strengthened commitment to funding additional training (and retraining) via the European Social Fund.

It is also likely to recommend that European agencies (in Dublin and Bilbao), and the European Employment Observatory, research the impacts of climate change on employment and social policy, and also effect dialogue with social partners.[97]

supporting the development of high quality working environments and low/zero carbon employment sites and premises within attractive environments. There will be a focus on encouraging clusters of businesses, particularly green businesses, such as those supported under Priority Axes 1 and 2, and on demonstration projects to reduce the carbon footprint of businesses and encourage wider take-up of sustainable business practices.'[95]

The London framework therefore allows for some use of European Structural Funds for the expansion of green businesses and the greening of business development in London. However, a connection between the skills agenda and the green work agenda is still not being optimised.

The EU's Community Strategic Guidelines, which guide the use of Structural Funds, give the following priorities:

- Making Europe and its regions more attractive places in which to invest and work
- Improving knowledge and innovation for growth
- Creating more and better jobs

This clearly limits and shapes both national and region frameworks and spending priorities.[96]

An EU framework which gave priority to the need to adapt skills for sustainable development and a low-carbon economy would clearly help generate the much-needed investment in these areas across the European Union.

Greening training and young people

A key element in green training should be involvement and engagement. Where young people are involved, it is essential that youth groups and organisations are involved in the planning and implementation of relevant frameworks, programmes and initiatives. [98]

95 London ERDF Operational Programme: 2007-2013, p6, p8. *www.lda.gov.uk/upload/pdf/Draft_ERDF_Operationl_Programme_26_Nov_2007.pdf*. In addition, a fourth priority axis is 'Technical Assistance'.

96 Council Decision of 6 October 2006 on Community strategic guidelines on cohesion (2006/702/EC). *www.ec.europa.eu/regional_policy/sources/docoffic/2007/osc/l_291200610 21en00110032.pdf*.

97 Draft Opinion of Committee on Employment and Social Affairs (including draft amendments 1-10), May/June 2008 , for the Committee on the Environment, Public Health and Food Safety, on the Proposal for a decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020. *www.europarl.europa.eu/oeil/file.jsp?id=5588442*.

98 See Jean Lambert MEP and Capacity Global, 2002, **Integrating Social Inclusion and Environment**, Recommendation 2.

99 Ibid., Recommendations 3 and 4.

Huge opportunities exist to create green jobs through energy and industrialization policies which reduce emissions. The United Nations Environmental Programme (UNEP) estimates that the market for clean energy technology could be worth 1.9 trillion dollars by the year 2020. Investments in energy efficiency, clean energy technology and in renewable energy have enormous potential to create productive and decent work.

A new generation of green jobs will contribute to sustainable economic growth and help lift people out poverty. They are central to the positive link that needs to be established between climate change and development. We must also prepare for job losses and support workers and enterprises in shifting to new ways of working that substantially reduce emissions. We also need to invest much more in low emissions strategies for development that do not slow progress in poverty reduction. On all these issues, we must act preventively and develop the policies that can ensure a smooth transition for all involved.

Juan Somavia, Director-General, International Labour Organisation. [100]

Recommendations

1 Green work and skills should be planned for as part of economic strategies at regional, national and EU level.

2 Planning should be integrated across policy sectors and related initiatives: high standards should be set to drive change.

3 Such comprehensive green work skills strategies should operate across the relevant Sector Skills Councils, ensuring a truly joined-up approach.

4 Training should not be defined solely by a 'demand-led' or 'employer-led' approach. Training (with funding) should actively be developed in areas linked to the greening of work and in individual sectors, in accordance with climate change and other environmental objectives.

5 At London level, the recommendations of the London Energy Partnership, as formulated in Skills for a Low Carbon London, should form a key component of the London Skills and Employment Board's London skills strategy. The London Mayor should ensure GLA funding for green skills and training is maintained and expanded.

6 Maximum advantage should be taken of the potential for green work and skills to strengthen and diversify local economies, and bring new opportunities to unemployed people and disadvantaged groups and communities.

7 Key sectors should be identified for a particular investment and training focus, as part of the broader strategic objective to green industry and the whole economy. These sectors should include energy, transport and housing/construction.

8 There is a need for a revitalisation of apprenticeships, working with SMEs in the sectors, and ensuring employer buy-in, as necessary elements in addressing the skills shortages. Particular attention must be paid to post-compulsory education and both retraining and ongoing skills updates.

9 Trade unions have a particular role to play in greening workplaces and organisations, as part of a 'just transition' to a green economy. Unions should be included as partners in the process of bringing about change in a socially and economically just way.

10 Unions should have the right to appoint Environmental Representatives, following the Health and Safety model, allowing reasonable time off to undertake activities.

11 The European Union needs to fund and link green work skills training to greening the economy, as part of its sustainable development and climate change strategies. This should be at the heart of its economic thinking.

12 The European Social Fund should include explicitly earmarked funding for green skills training and retraining initiatives, including particular support in key identified sectors.

13 Greater research is needed into the impacts of climate change policies on employment, including Health and Safety, involving key European employment-related agencies. Employment, social, training and industry policies should develop in response to these impacts.

14 Ambitious environmental regulations must play a central role in the innovation and transformation of workplaces and industry, and the EU has a major part to play developing further progressive policies in these areas to bring about the deep changes needed across the board.

15 A key element in green training should be involvement and engagement. Where young people are involved, it is essential that youth groups and organisations are involved in the planning and implementation of relevant frameworks, programmes and initiatives.

16 The green dimension of training should not be restricted to training in specific environment-related subjects. All training programmes should incorporate an environmental component, and this should be a prerequisite for funding. So environmental elements can be incorporated, staff should be given relevant training and resources.

Conclusions

The threat of climate change cannot and must not be ignored. The necessary shift away from reliance on fossil fuels and carbon-intensive production and consumption needs to be planned for and managed. The UK Government, and other national governments, have a responsibility to ensure this happens, and to make it an urgent priority. They must not abnegate that responsibility.

The European Union has a central role to play. It must set a workable framework which encourages, enables and requires member states to take national, regional and local action. Action at business and workplace level is also crucial. For it to work, the transition must also be *just*. Involving unions and enabling them to do more, for example, via legally recognised environmental workplace reps, must be part of the solution. This agenda for change also offers potential for greater co-operation between governments, unions and business - perhaps ushering in a much-needed new tripartism.

Crucially, the challenge must involve training and addressing the green skills gap. This will only be achieved with public investment and planning. A 'demand-led' approach to training, as championed by the UK Government, will not deliver the skills and training needed in the time frame required. As well as investing in the new industries, numerous barriers need removing. Some have been identified in this report.

The UK Government, the European Union and the other EU member states must ensure their climate change plans fit together with industry, employment and training plans at all levels. This must be facilitated by public funding and put at the centre of economic thinking. As we have seen, the challenge is great - but it is not insurmountable. The greenest work, however, is making it happen – and that still needs to be done.

100 ILO Online reports from High-Level Event on Climate Change, New York, 24 September 2007.

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