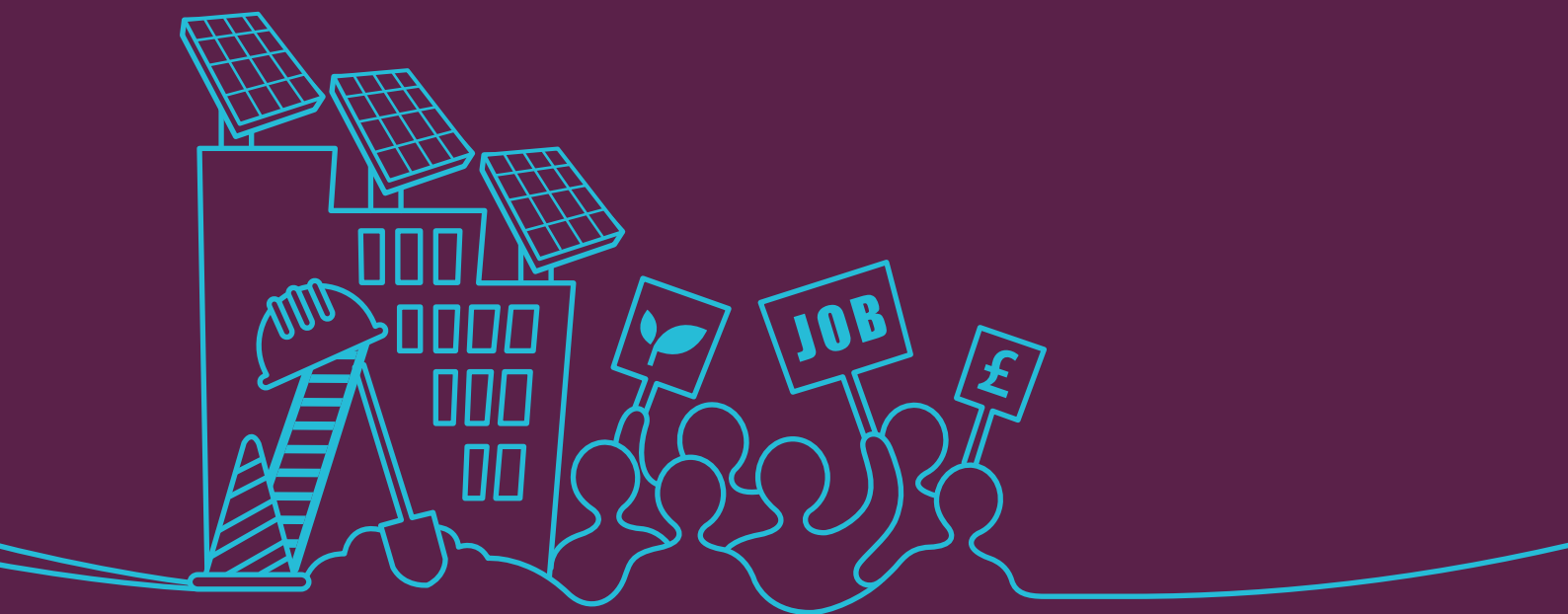


# ALDERSGATE GROUP

**MIND THE GAP:  
SKILLS FOR THE  
TRANSITION TO A LOW  
CARBON ECONOMY**





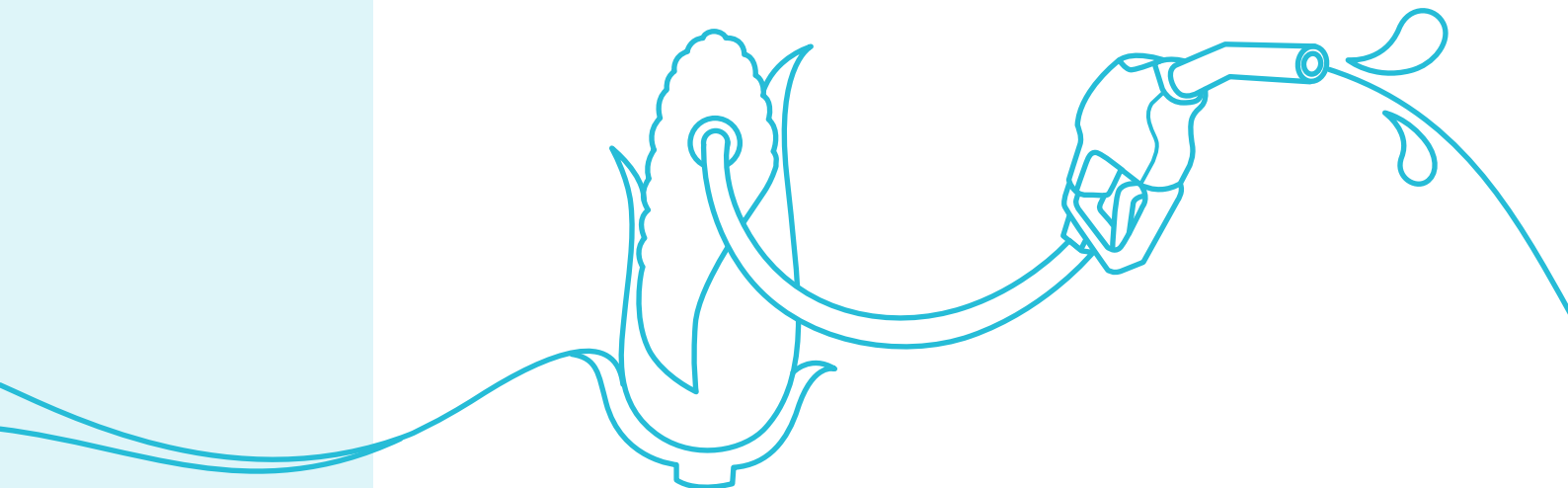
# Foreword

*Public discussion of the employment effects of the transition to a low carbon economy has mostly focused on the creation of “green jobs”. The Aldersgate Group (AG) believes that an effective policy for skills and employment requires a much deeper understanding of the nature of the transition and of the skills that will be necessary to transform our economy.*

To gain an insight into what a more effective low carbon skills strategy might look like, I was delighted to chair two high level roundtables on behalf of the AG. We started by recognising that the transition to a low carbon economy will involve massive changes in business activity and that every job in the UK will need to change to some extent. Our Group identified the skills that would be particularly required, and we found that there would be a great need for qualified engineers, for craft technicians across many disciplines, for project managers and for employees at all levels to have first class communication skills. Education in the so-called STEM subjects (science, technology, engineering and maths) would be enormously important.

But, of course, these skills – particularly those based on the STEM subjects – are not only needed in a low carbon economy. As many reports and inquiries have demonstrated, it is a shortage of precisely these skills that has held back the UK economy for decades. So, in terms of skills, preparing for a low carbon economy involves a policy of “no regrets”. Whatever the speed of transition, the UK needs to fix these skill shortage problems in order to prosper in the modern world.

Our second conclusion was that, although some entirely new jobs will be created and special training arrangements must be made for those, in many key jobs there are similarities between the skill sets that already exist and those that are needed in the low carbon economy. We found that, in most cases, rather than trying to build up new green skill sets from scratch, more rapid progress would be made if we developed training courses to enhance current skills. This would speed the transition and ensure that current employees are not left behind by newly qualified staff.



As we moved the focus of our inquiry away from jobs in the front line of change, we found a deeper and very troubling problem. The debate about climate change and the need to decarbonise our economy has moved very quickly and most people have been left behind. Basic concepts are not understood by people at all levels in the UK workforce, including managers in very senior positions. If the transition is to be accomplished efficiently, companies need to ensure that their staff appreciate the reasons for change and are sufficiently knowledgeable to take an active part in the process.

There is also a political dimension to this training imperative. The Government has accepted that the transformation of our economy has to be carried out in a manner which is just in the treatment of all groups and communities. An informed workforce is essential if the transition is to be completed on the basis of fairness and consent.

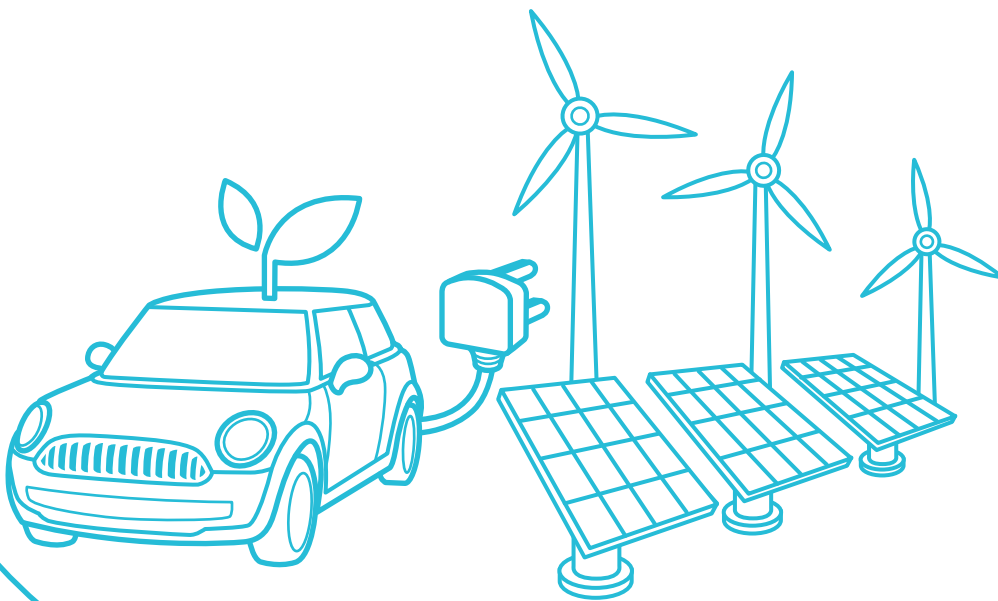
Our report looks at the institutions that are in place and discusses whether they are fit to meet the challenge of the transition to a low carbon economy. In many cases we make recommendations for reform. A basic principle is that our training institutions must be able to look beyond our current industrial and business structure and plan for the skill requirements of the new economic order. Training organisations are often best at providing for present needs. A successful transition requires foresight based on careful research and a measure of imagination.

Many of our recommendations are directed at Government. Within our Group, representatives of business insisted that they needed certainty from Government. If they are to invest in the economic transformation, they need to be sure the transition will be carried through with determination, and that an appropriate timetable of regulation and capacity building will be set and adhered to. It is accepted that all Government departments will play a part but there was common agreement that the Department for Business, Innovation and Skills should take the lead.

Some of our recommendations will be expensive and we appreciate that the pressure on public finance is considerable. We are also aware that the scale of the task is enormous and the timetable is formidable. It is inconceivable that the carbon reduction targets can be met without substantial government intervention. Our Report is intended to remind Government – and the other players in our economy – that investment in the skills and development of the UK workforce must be an essential part of the policy of transition.

**John Edmonds**

Former President, TUC  
Project Chair



# Executive Summary

*The UK is committed to a rapid transition to a low carbon and resource efficient economy that will lead to economic growth, competitive advantage and job creation. A crucial component of this transformation is the development of new skills in rapidly growing low carbon sectors, and of generic skills across the economy. Strong evidence suggests that the UK does not have the necessary skills to make the transition at the pace required, or the training arrangements in place to fill the gap.*

The commitment for more active industrial intervention from both Government and Opposition to address this market failure is welcome. It is now imperative that ambition and delivery is accelerated. To be effective, the Government's skills strategy must target those currently without work and develop in step with environmental regulation and legislation.

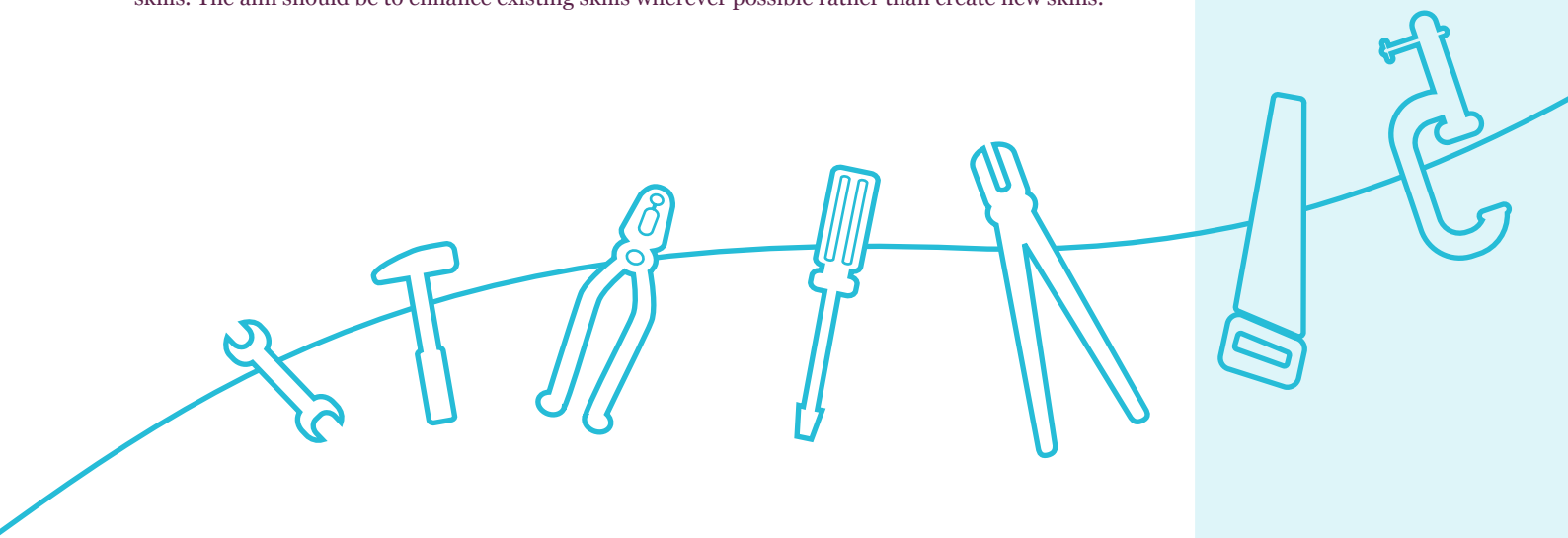
A key recommendation is that all major environmental policies – such as the increased subsidies for offshore wind in the 2009 Budget or the CRC Energy Efficiency Scheme – should be accompanied with a corresponding skills strategy. The Government should also:

## Provide sufficient investment for training.

Public support is necessary to develop core technical skills in targeted sectors. In addition, subsidies should be available for less expensive and time consuming training to build and transform existing skills. The aim should be to enhance existing skills wherever possible rather than create new skills.

## Make the training institutions fit for purpose.

The skills delivery system is ill equipped to adequately anticipate, identify and respond to the skill needs of the low carbon transition. Policy and funding direction need to be tuned to future jobs and skills needs and the Government must provide more strategic leadership for taking overall responsibility for delivery across all sectors (through the UK Commission for Employment and Skills or an alternative body). Whilst certain sectors of the economy will go through more transformation than others, all sectors of the economy must have their skills developed in generic issues such as resource efficiency, energy efficiency and dematerialisation of products.

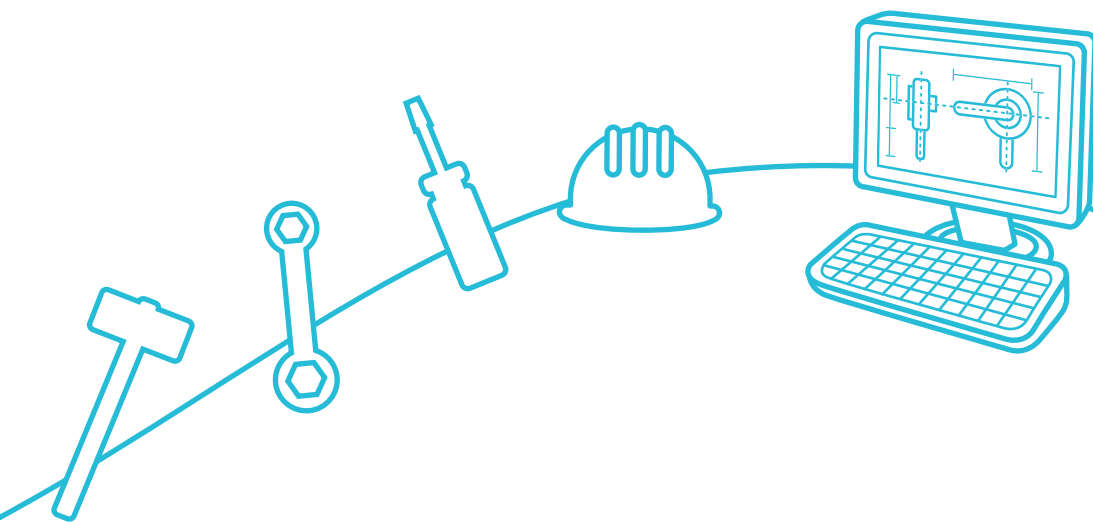


### Drive demand for environmental skills.

The Government should mobilise business engagement by providing initial funding programmes that can help alter long-term business practices and support in-house training programmes. Public procurement could have a substantial impact on the growth of environmental markets and more effective sustainable procurement skills and policies must be developed.

### Reform its communication strategy.

The current government classification for a “green job” is ill defined and will become increasingly irrelevant as the low carbon transformation develops. The Government should also engage more actively with the UK workforce about the implications of the shift to low carbon with more practical information.



The most significant driver for low carbon skills is a robust government industrial policy that encourages investment in low carbon technology and resource efficiency. Germany has shown how an active industrial and skills policy can help stimulate widespread economic growth and job creation. The responsibility for progress must be shared between government, businesses, trade unions, professional bodies and the workforce.

Prompt and effective intervention to develop low carbon skills will lead to competitive advantage, job creation and future prosperity.



# Introduction

*The Climate Change Act sets out ambitious, legally binding carbon targets for reducing greenhouse gas emissions. It commits the UK to a radical transformation in its energy infrastructure at immense scale and speed. This transition is required to meet the global challenges of climate change, energy security and sustainable development but there is also an economic imperative. Prompt action will ensure that the UK is well positioned in high growth environmental sectors and is vital for economic competitiveness and future job creation.*

This report is the second in a trilogy that examines how the low carbon transition can be accelerated, and economic benefits maximised, by intervention on the supply side. Its focus is not on primary regulation, incentives and legislation, but on the design of supporting infrastructure to enable the transition to be accomplished at a pace and in a manner which brings substantial economic and social benefits. The three main topic areas are finance, skills and resource efficiency.

The first paper in the series, *Financing the Transition*<sup>1</sup>, examines how the delivery of carbon targets for 2020 and beyond presents a major financing challenge for the UK economy, and the majority of the cost will need to be delivered by the private sector. An activist government approach which ensures lending costs are minimised will remove barriers to financing low carbon projects and significantly lower the overall cost of the transition to society. Its key recommendations are to reduce the public policy risk of low carbon investments by providing government guarantees, to mobilise private sector capital flows through climate bonds and to reform institutional delivery mechanisms with the formation of a Green Infrastructure Bank. The report was welcomed by the Secretary of State for Energy and Climate Change, Ed Miliband, at the launch event at the House of Commons and the Aldersgate Group is continuing to work with key political and private sector stakeholders to develop the main proposals. The report on resource efficiency, chaired by Sir John Harman, is due to be published in the new year.



As with the other two reports, this paper has a narrow focus on public policy and builds on the findings from high level roundtables with leading representatives from the sector (in this case; big businesses, SMEs, trade unions, recruitment consultants, trade associations, public sector bodies, academics and NGOs<sup>2</sup>). In general, the participants welcomed recent political commitments for more active government intervention to accelerate the growth of low carbon sectors and debated what policies would be the most effective. There was a high degree of consensus that a more active skills policy must include both a top-down approach to increase demand for low carbon skills, and a bottom-up approach to boost supply and enhance business engagement.

In the context of the critical state of public finances, any intervention should be targeted at areas with the greatest potential to drive fundamental change and bring economic benefit. Most of the recommendations in this report represent good value in terms of time and resource commitments and have the potential to accelerate the transition to a low carbon economy by meeting present and future skill needs.

<sup>1</sup> Aldersgate Group (October 2009) *Financing the Transition: A strategy to deliver carbon targets.*

<sup>2</sup> See page 15 for a full list of participants.

## Active government intervention

*The UK is committed to a rapid transition to a low carbon and resource efficient economy. The UK Low Carbon Transition Plan<sup>3</sup> was supported by the main political parties and sets out a range of challenging targets to 2022 that will stimulate business opportunities and job creation in high growth, low carbon sectors. A crucial component of this transition is the development of low carbon skills and employment, which currently represents a major barrier to the UK's success in these potentially lucrative markets. To ensure competitive advantage, the UK must invest intelligently in training for skills that will be essential in the low carbon economy.*

In environmental sectors of the economy, a skills gap is well documented, with one in three firms being hampered by a shortage of skilled staff, from those needed to install new technology to scientists and engineers<sup>4</sup>. These skill sets take a long time to develop and action is required now to achieve the step change required to meet climate change targets for 2020. In addition, existing skills will need to be enhanced to meet environmental challenges and generic resource efficiency skills must be developed across the economy. There will also be a need to focus on higher level skills to adapt to new technologies and business models. For example, the employment skills profiles for the aerospace<sup>5</sup> and automotive industries (that must develop low carbon technologies) are changing with an increased demand for high-value, design-rich, intellectual capital intensive jobs.



A more “activist” industrial policy must be coupled with a relevant skills policy to address these challenges. According to Simon Latham and Roger Liddle, a former economic adviser to the European Commission President José Manuel Barroso, this will require not only new sources of competitive strength in low carbon sectors of the economy such as energy saving technology and renewable technologies, but also effective means of social protection. By 2020, low carbon skills will have to be fully embedded into the mainstream UK workforce and the Government must work with employers to stimulate the demand for them.

3  
HM Government  
(June 2009) *The UK Low Carbon Transition Plan*.

4  
HM Government  
(November 2007) *Commission on Environmental Markets and Economic Performance*.

5  
Low carbon engineering is integral to the National Aerospace Technology Strategy (NATS).



The Institute of Public Policy Research (IPPR)<sup>6</sup> has shown from the experience of other countries that strategic and active government intervention can help generate innovation and stimulate growth. Germany has invested heavily in generating supply chains and technology to support production in the renewable energy sector and is now a leader in this field. The US Government levered large amounts of money into Silicon Valley where industries are now leaders in business innovation. Since the 1980s, South Korea has developed a high-tech manufacturing base virtually from scratch.

There is broad political support for new industrial activism in low carbon sectors. In *Building Britain's Future: New Industry, New Jobs*<sup>7</sup>, the Government outlines a strategic approach to targeted intervention in areas where the UK can take full advantage of its strengths and prepare for the upturn, removing barriers that are holding back the private sector. There is a particular commitment to the “green revolution” and improving the skills of the workforce, so that it can adapt to the specialist demands of emerging low carbon trends and ensure skills gaps are filled before they become a barrier to job creation and business growth.

For the Conservatives, David Cameron has called for “a revolution in skills and training”<sup>8</sup>, so that the skills system responds more effectively to the needs of individuals and businesses in an increasingly global and greener economy. This includes a massive expansion in the provision of work-focused apprenticeships to develop the engineering and technological skills of the future, more community learning to improve skills and employability, and supply side reform to streamline the funding model.

The Aldersgate Group supports the growing consensus for more active government support for low carbon skills. It is now imperative that ambition and delivery is accelerated. This report explores some of the key issues and barriers that such a strategy must address.



## Skills in the recession

According to the Office of National Statistics, the unemployment rate in the UK rose to 2.47 million people in August 2009, an increase of 677,000 in a year<sup>9</sup>. GDP data for the third quarter shows that the current recession is the longest on record and the Treasury expects unemployment to rise by a further 1.3% in 2010<sup>10</sup>. Furthermore, after each of the last two recessions, it took roughly eight years for employment to reach its previous peak level before moving on to higher levels<sup>11</sup>. Investment in low carbon skills can play a major part in preparing the UK for the economic recovery, accelerating the growth in new jobs and helping build a more resilient and sustainable economy for the future.

The Trade Union Congress (TUC) has argued that a strategic skills policy must protect key sectors and economic infrastructure industries, like transport and construction, during the economic downturn as well as supporting growth in ‘new’ industries such as renewable energy and green manufacturing. Science, technology, engineering and maths (STEM) skills must be promoted and a strong coalition involving Government, business and trade unions should send out a unified message that skills investment is more important than ever during an economic downturn<sup>12</sup>. Policies that help stimulate investment in energy efficiency, for example, could create jobs and build up the skills in the workforce that will help drive the transition to a prosperous low carbon economy<sup>13</sup>.

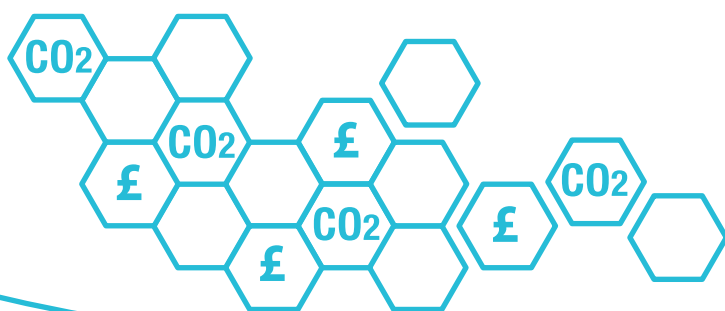
- 6 IPPR (July 2009) *Building a Better Balanced Economy: Where will jobs be created in the next economic cycle?*
- 7 HM Government (April 2009) *Building Britain's Future: New Industry, New Jobs.*
- 8 Conservatives (August 2008) *Building Skills, Transforming Lives: A training and apprenticeships revolution*, p3.
- 9 [www.statistics.gov.uk](http://www.statistics.gov.uk)
- 10 HM Treasury (June 2009) *Forecasts for the UK economy.*
- 11 IPPR (July 2009) *Building a Better Balanced Economy: Where will jobs be created in the next economic cycle?*
- 12 Trade Union Congress (January 2009) *Skills in the Recession.*
- 13 Aldersgate Group (June 2009) *Commission Statement: Driving investment and enterprise in green markets*, p28.

# Aligning skills policy with industrial policy

*The role of good regulation in forcing the pace of industrial change is now a central element of economic policy. But better regulation needs to be accompanied by investment in new capacity and supporting infrastructure so that the desired transition can be made in a manner which brings substantial economic and social benefits. So, for example, low carbon targets in the domestic sector need to be supported by investment in the corresponding skills needed for delivery.*

The Aldersgate Group<sup>14</sup> argues that not only must demand side policy be matched by development on the supply side, but both must advance together as each promotes the progress of the other. A sudden and unexpected hike in standards may not lead to job creation because industry is either unprepared or unable to respond effectively. In these circumstances, new jobs may be exported while old ones dwindle. Where there is good infrastructure support for new standards, employment patterns respond much more flexibly and the very creation of new opportunities encourages both employers and employees to support and encourage further change.

The Government increasingly recognises the need for targeted support in areas where the UK has the greatest potential to lead world markets and where proportionate government intervention can unlock long-term competitive potential for British based firms. These are identified in the *Low Carbon Industrial Strategy*<sup>15</sup> and include offshore wind, wave and tidal power, civil nuclear power, ultra-low carbon vehicles and carbon capture and storage (CCS). Government support for low carbon sectors must include sufficient training programmes to ensure the economic benefits are maximised for the UK economy and the workforce.



A key recommendation for this report is that all major environmental policies and regulations should be accompanied with a corresponding skills strategy. The Government cannot rely on the market to respond to low carbon targets at the required scale and urgency. For example, if the Government increases the subsidy level for offshore wind, as it did in the 2009 Budget, it should also ensure it has the appropriate mechanisms in place to support the industry to meet its skill needs. The CRC Energy Efficiency Scheme, the UK's mandatory energy saving scheme for big businesses, should be accompanied by a skills package to enable businesses to reduce energy use and carbon emissions. Domestic energy efficiency initiatives must be complemented with training programmes to ensure there is the sufficient capacity to deliver. This principle of complementary policies should be driven by the Department for Business, Innovation and Skills (BIS) with a high degree of transparency, accountability and engagement with business, trade unions, professional bodies and the general public.

14  
Aldersgate Group  
(June 2009) *Commission Statement: Driving investment and enterprise in green markets.*

15  
HM Government  
(June 2009) *The UK Low Carbon Industrial Strategy.*

## Clear articulation of government policy

Government policy, targets and commitments should be fully researched and fully explained. Rapid changes can damage business confidence and skills development, as was the case with nuclear energy policy. The 1998 and 2003 Government Energy Bills ruled out the development of new nuclear electricity generation and this policy position gave a clear signal to engineers and those wishing to enter the profession that there was not a future career in the nuclear sector in the UK.

The current renewed government commitment to nuclear means that there is now a significant skills shortage in the sector, which will have to recruit between 5,900 to 9,000 graduates and 2,700 to 4,500 skilled trades over the next ten years<sup>16</sup>. The Institution of Civil Engineers understands that about 30 per cent of British Energy's staff is due for retirement over the next ten years, creating a significant loss of knowledge and expertise. This comes at a time when demand for engineers with the skills required to deliver major infrastructure projects is increasing from an expansion in onshore and offshore wind, CCS, flood defence, high speed rail and upgrading the water infrastructure.

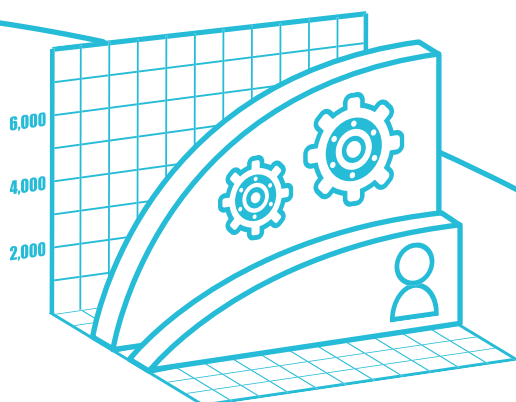
In response, the National Skills Academy for Nuclear was created in January 2008, a wholly owned subsidiary of Cogent, the relevant Sector Skills Council. In the short-term, much of the capacity gap in the nuclear sector is likely to be filled by importing skills from nations such as France which have an extensive nuclear programme. Longer term, the UK has an opportunity to grow its own cohort of skilled workers which will be important if the UK is going to progress with a nuclear programme. To realise this opportunity, the UK must ensure that all schools and colleges have appropriately qualified students and staff in STEM subjects and reverse the stop/start pattern of development, which has afflicted the nuclear sector (and much of UK infrastructure) in recent decades. A major research programme by Cogent is currently underway to ensure that future demand for nuclear skills can be delivered in the UK<sup>17</sup>.

In terms of CCS, Ian Temperton from Climate Change Capital highlights the fact that the UK has not seen an investment in a new coal-fired power station for a generation and so there is a significant lack of experience in comparison with competitors, such as China and the United States<sup>18</sup>. A sufficient domestic skills base will only develop through practical experience from real demonstration projects. However, progress can be accelerated by premeditated action in line with government policy. For this reason, a government research fund for training centres in conjunction with leading universities is welcome and should help develop the required skills for demonstration projects.

16  
National Skills Academy  
for Nuclear (January 2008)  
*Press Release: National  
Skills Academy for Nuclear  
Launched.*

17  
Cogent (September 2009)  
*Power People: The Civil  
Nuclear Workforce 2009–2025.*

18  
Institution of Civil Engineers  
(October 2009) *Carbon Capture  
and Storage: Time to deliver.*

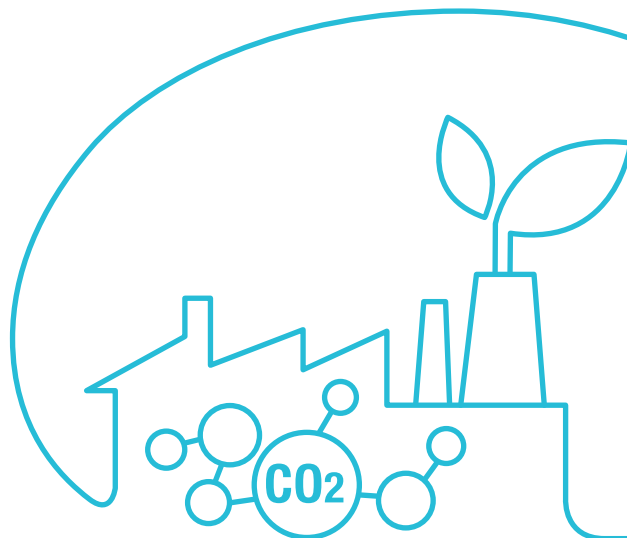


## Low Carbon Economic Areas

A very positive development has been the formation of Low Carbon Economic Areas in targeted regions to help cement strong links between regional bodies, businesses and academic institutions. The first designated area is for wave and tidal energy in the South West. This industry is at a very early stage of development, characterised by a large number of SMEs working on different technologies, which are typically very hard to co-ordinate.

It is hoped that the industry's skills needs will be clearly identified and effectively articulated through an industry forum, co-ordinated by the South West Regional Development Agency, bringing together industry, academics, local stakeholders and key public sector bodies. In this way, a functioning system of collective demand and collective supply can be created. This model is likely to be loosely replicated in other Low Carbon Economic Areas. Funding from the Department of Work and Pensions and 1500 graduate placements for Low Carbon Economic Areas (nationwide) should help stimulate employer demand for low carbon skills and send an early signal to the regional skills partnerships.

The scheme is still at an early stage of development and it is not yet possible to evaluate its effectiveness. A skills strategy is being developed but uncertainty about which technologies will prove to be the most successful means progress is likely to be slow. Businesses are currently much more focused on funding in the short-term (over the next one to three years) rather than longer term skill requirements. Likely skill gaps include design engineers, construction professionals, project managers and those involved in operation and maintenance of new technologies. As companies grow in size and larger players enter the market, there is likely to be more focus on low carbon skills and greater investment in training.



One North East, the regional development agency, is developing the UK's first Low Carbon Economic Area for Ultra-Low Carbon Vehicles. If, as expected, Nissan locate a factory to develop low carbon vehicles in the region, they will commit to hiring the long-term unemployed (ie longer than six months), which will constitute half of their workforce. One North East is currently working to ensure that the workforce has the adequate skills. Its programme has included setting up the first training centre to specialise in the sustainable manufacturing and education in ultra-low carbon vehicles, introducing a Research & Development Centre to serve as a focus for research from all the region's universities and local business and the creation of a new business park<sup>19</sup>. The training centre is being funded by both private business and the Learning and Skills Council (60%) and will be self-financing when built.

19  
One North East (August 2009)  
*Press Release: North East to  
take centre stage at low carbon  
vehicle showcase.*

## Providing sufficient investment for training

*In the Low Carbon Industrial Strategy, the Government has identified three key skills shortages for the transition to a low carbon economy. These are the core skills required by industry to produce low carbon goods and services which are increasingly demanded by the market, more general management skills that help a company or organisation operate in a low carbon way and new skills relating to the new activities specific to the low carbon transition (such as full product life-cycle analysis, carbon auditing and carbon trading). Much of the higher level skills delivery will need to take place at work, as a high proportion of the 2020 workforce is already working<sup>20</sup>.*

### Core skills

One in three firms in the environmental sector is being hampered by a shortage of skilled staff, from those that need to install new technology to scientists and engineers (see page 6). This represents a major barrier to UK success in environmental markets and must be effectively addressed by the National Skills Strategy.



The British Wind Energy Association (BWEA) has published an analysis of the wind industry labour market – the skills shortages it faces and the potential employment opportunities that could accrue from the development of industry in the next decade<sup>21</sup>. The wind industry currently employs about 5,000 people in the UK and this will need to rise to at least 36,000 and perhaps 57,000 to meet renewable energy generation targets for 2020. The implication of such high recruitment rates into a new industry is that a large number of entrants will require training. BWEA suggests that there needs to be strong focus on providing the capacity to train the overall number of workers<sup>22</sup>. Setting up training centres costs millions of pounds and the industry will require support from the Government. One proposal for a comprehensive centre located in Blyth has been costed at £27m and it is estimated that around eight centres of this kind will be required. Government needs to plan strategically and fund a limited number of facilities. Resources will also have to be found to train the trainers in a new sector where those with knowledge and experience are needed to actually build and operate the generation capacity.

20  
HM Government (June 2009)  
*The UK Low Carbon Industrial Strategy*.

21  
BWEA commissioned  
Bain & Co: (October 2008)  
*Employment opportunities and challenges in the context of rapid industry growth*,

22  
BWEA (April 2009) *Powering a Green Economy: Wind, wave and tidal's contribution to Britain's industrial future*.

As well as funding training schemes, young people will need to be encouraged to study STEM subjects to mobilise a new generation of engineers and scientists. A long-term strategy must incentivise the selection of STEM subjects from GCSE level onwards, such as through financial benefits for students (i.e. reduced fees for science and engineering based degrees). As recommended by research into the green skills needs of the West Midlands, more needs to be done to promote environmental technologies as a potential career choice through effective marketing, clearly articulating the range of jobs available and engaging schools and universities<sup>23</sup>. This is particularly important in high growth areas which have not yet achieved sufficient visibility and scale to entice students when they make choices on their education routes.

In the shorter term, there will have to be greater focus on overseas recruitment. The UK immigration points based system should be adjusted to give greater preferences to those with an engineering and scientific background. Public-private investment in conversion courses would also help build on the core skill base of people working in relevant occupations in the Armed Forces and in the rail, oil, gas, chemical and steel industries.

It is essential that the Skills Funding Agency recognises these skill shortages as an area of strategic economic importance and makes sufficient funds available to meet this demand. It will need to be targeted to a small number of occupations to ensure competitive advantage in the key industries prioritised in the Low Carbon Industrial Strategy.



## Building green skills

The majority of environmental jobs are not entirely new in content. They are based on traditional occupations but enhanced with skills that are relevant to the low carbon economy. For example, research in the United States shows that retrofitting American cities requires workers with traditional construction skills who also have up-to-date training on energy-efficient construction<sup>24</sup>.

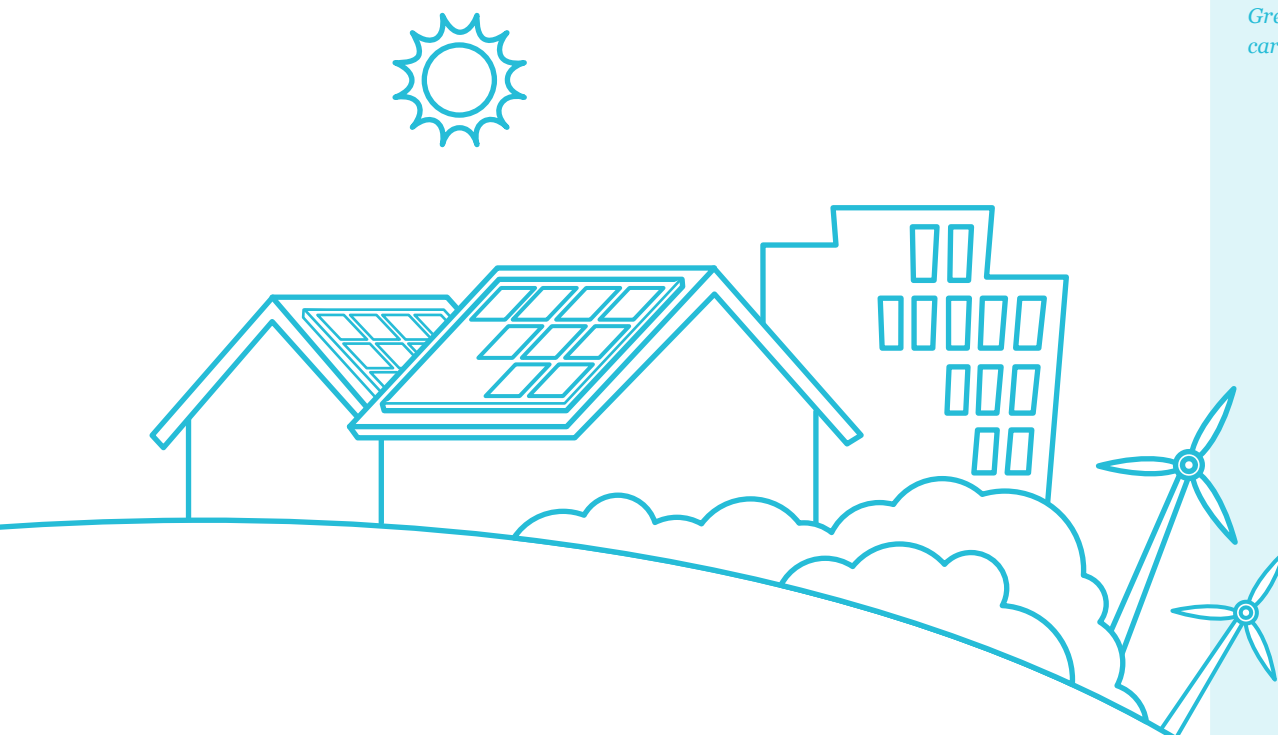
A few specialists will need training to a very high level but the investment required for upskilling or re-skilling most employees will be less onerous and expensive. In many cases, the fundamental skills already exist and these must be built on with additional knowledge and techniques so that they are relevant to emerging skill requirements. For example, the skills to install, maintain and repair low carbon energy systems can all be adapted from existing skill sets. Electricians will already have the core electrical skills to install and maintain solar panels but will require additional training to integrate connection into the existing mains power supply, install the means of feeding power back into the national grid and training to work safely at heights.

Funding must match the real life needs of businesses and their employees. At present, public funding is often only available for longer courses but should also be available for shorter courses which build upon existing skill sets, creating new opportunities amongst already-skilled sections of the workforce. There is also a need for additional add-on modules to existing apprenticeships for adult employees. Often employers are prepared to upskill their staff but there are no regional facilities, so capital investment should be made available to create regional centres of excellence.

23  
West Midlands Regional  
Observatory (October 2009)  
*Environmental technologies  
skills review: key findings,  
issues and recommendations.*

24  
Sarah White & Jason Walsh  
(2008) *Greener Pathways: Jobs  
and workforce development in  
the clean energy economy.*





### Generic skills

The Government has reported shortages in management and leadership skills that will be essential for businesses to respond effectively to the challenges of climate change and resource efficiency, as well as emerging legislation and consumer expectations. These include basic awareness of the ways in which the drive for greater resource efficiency and sustainability will impact on existing businesses and industrial activities.

IPPR<sup>25</sup> demonstrates that the lack of management skills is not confined to the low-carbon sector but is regularly identified as a weakness in UK firms. This means that investment in this area of training represents a “no regrets” policy which will enhance UK competitiveness whatever the pace of industrial transformation. Nevertheless, employees will also need to look at how their organisation operates in the context of environmental challenges, building on the work that is already underway by Union environmental representatives.

The transition to a low carbon economy will be greatly eased if everyone at work understood more about the nature of the transformation in Britain’s economy and appreciated what it means to work in a business committed to resource efficiency and sustainability. These generic skills will be as essential to every employee as the protective skills learnt in basic health and safety training. The Government should explore requiring all employers to provide the appropriate level of training on sustainability issues to all workers. In essence, every profession would need to address what is necessary and sufficient to perform roles effectively in a low carbon economy. Every organisation would have champions and on-site representatives responsible for driving through reform and engaging the workforce.

Employees with environmental skills are also consumers that make choices in their domestic lives. Training at work will help develop greater awareness of sustainability issues at home and influence future consumer behaviour.

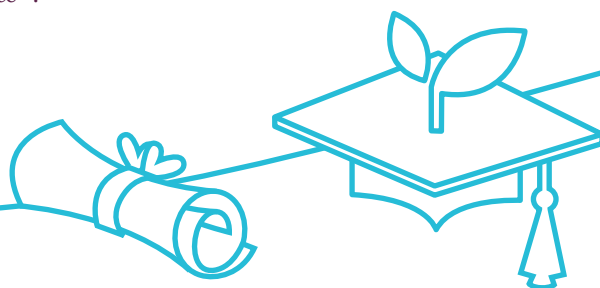
# Making the training institutions fit for purpose

*At present the UK's skills delivery system is employer led and is built on the assumption that employers are in the best position to identify training needs and to anticipate future demand. According to research by Defra, there is a lack of sufficient business engagement on environmental issues and the need for low carbon skills is not being "clearly articulated by many employers"<sup>26</sup>. The result is that the skills delivery system is ill equipped to anticipate adequately and respond to the skill needs required by the low carbon transition.*

Sector Skills Councils (SSCs) are independent, employer led, UK wide organisations, licensed by the Government through the UK Commission for Employment and Skills (UKCES). They number twenty five and cover over 90% of the UK workforce, representing the skills and training interests of small to large business. Their remits are sector specific and they are not good at handling skills that are cross-cutting and required across a spread of sectors. A review of the performance of Sector Skills Councils addressing low carbon and resource efficiency skills demonstrates that very few are incorporating these into their action plans and overall strategies<sup>27</sup>. Furthermore, once skills needs are identified, there is a failure to translate this into action and delivery. It is vital that the demand led skills strategies and plans produced by SSCs directly influence what receives funding.

While SSCs are predominantly focused on their own sector, there are examples of effective, joined up working. For example, Semta, the Sector Skills Council for science, engineering and manufacturing technologies, is leading a group of ten SSCs to enhance the provision of STEM skills; five SSCs have launched an initiative to improve access to quality training and development for manufacturing employers in the UK<sup>28</sup>; and SSCs often work collaboratively in regard to energy, renewable and sustainable skills. These initiatives need to be built upon within a more manageable and effective overarching framework.

The members of the Commission on Environmental Markets and Economic Performance<sup>29</sup> (a Strategic Advisory Group set up by the Government) recommends that UKCES should assume a leadership role. It should have greater responsibility for low carbon skills delivery and ensure that the SSCs are working more closely on low carbon skills requirements. This reform should include the creation of a high level Advisory Panel to champion good practice<sup>30</sup>.



There also needs to be a more persistent government drive to take this agenda forward with clearer prioritisation from BIS and more urgency developing its low carbon skills strategy. IPPR reports<sup>31</sup> that progress by a high-level skills group, led by BIS, to consider the skills needs for the transition to the low carbon economy has been relatively slow, with too much focus on work that employers are doing to develop skills in-house rather than looking across the board at the skills needed by low carbon industries. The Low Carbon Industrial Strategy and National Skills Strategy provide a good basis for more rapid progress and prioritisation within Government.

26  
Pro Enviro (2008) *Skills for a low carbon and resource efficient economy: A review of evidence*.

27  
Pro Enviro (2008) *Skills for a low carbon and resource efficient economy: A review of evidence*.

28  
Cogent (20<sup>th</sup> August 2009) *Press Release: Manufacturing Skills Alliance plans to make skills access easier for employer*.

29  
Aldersgate Group (June 2009) *Commission Statement: Driving investment and enterprise in green markets*.

30  
See Windsor Consultation (June 2008) *Skills for a Sustainable Future: facing the challenge*.

31  
Jenny Bird and Kayte Lawton (October 2009) *The Future's Green: Jobs and the UK low carbon transition*, p63.



# Driving demand for environmental skills

*Environmental markets are almost entirely driven by public policy which, in turn, will affect the demand for low carbon skills in the UK. While an effective and competitive overall framework needs to be in place, the Government can also drive demand for low carbon skills by mobilising business engagement on environmental issues, subsidise initial training programmes and adopt best practice in the management of its own operations. In addition, businesses, trade unions and civil society have a key role to play in addressing sustainability issues and taking advantage of emerging opportunities.*

## Private sector

The Government should ensure that its low carbon agenda is made accessible to short-term corporate strategies to help reduce energy costs and address climate risks and opportunities. A key recommendation from the Government's Strategic Advisory Group<sup>32</sup> was that framing low carbon skills as "resource management" would have more direct relevance to the majority of businesses and translate to tangible economic benefits and competitive advantage. While long-term targets for 2020 and 2050 are vital, there needs to be clearer direction on what can be achieved in the immediate future in line with business planning over three to five year timeframes.

32  
Pete Ashby (May 2009)  
Outcomes note arising from  
Part Two of a Low Carbon  
Skills Summit hosted by Defra.

33  
Skills of Logistics (July 2009)  
Press Release: Skills Key  
Ingredient in Transport Carbon  
Reduction Strategy.



In particular, there must be more focus on funding programmes that reduce costs for business. For example, Menzies Distribution, a distributor of newspapers and magazines, implemented a fuel efficient driving scheme after initial funding through Department for Transport, supported by Skills for Logistics, the SSC for the UK's freight logistics. Half a day of training per driver showed an average potential saving of around 10% on fuel, which is a considerable payback. Having gained valuable experience from the initial programme, Menzies has used this approach to maintain an efficient transportation system to ensure that there is no reversion to less efficient driving habits. In this way, a relatively small amount of funding helped drive a comprehensive upskilling programme that has had a significant impact on reducing emissions. Skills for Logistics has recognised the significant impact it could have in the immediate term by improving eco-driving skills, with the potential to save £300 million in fuel costs and 3 million tonnes of carbon emissions over five years across the sector<sup>33</sup>.

Government could also provide advice and support to help businesses set up relatively simple and inexpensive in-house training programmes. BT provides a good model for how an organisation can build generic green skills across the business, as part of an ongoing programme to realise commercial opportunities (such as new products and solutions) within the low carbon economy. The framework provides sustainability training to marketing, product, sales and legal staff. It is generally modular, online and short in length, ensuring that it can be undertaken conveniently and when required. It is also targeted to specific professional groups and parts of the business (such as a marketing manager with a consumer base).

## Public sector

One of the most direct ways that Government could stimulate demand for low carbon goods and services is by exemplary action as the UK's largest purchaser. The £175 billion annual public procurement budget represents a major opportunity to ensure the full analysis of lifecycle costs are considered, accelerating the growth of environmental markets and saving taxpayers money. Despite its vast potential to drive change, reforming public procurement practices remains a relatively low priority for Government and only modest developments were outlined in this summer's climate change strategies. Both the Environmental Audit Committee<sup>34</sup> and Sustainable Development Commission<sup>35</sup> find that the Government has performed badly in meeting its own targets for sustainable procurement and reducing carbon emission from its own buildings.

While greater leadership and commitment is required at Ministerial level, the Government must also ensure that it has the relevant skills to implement sustainable procurement policies. A recent report by the Innovation, University, Science and Skills Committee finds that several departments in key policy areas do not have sufficient in-house engineering expertise. Committee members "were shocked to discover that engineering advice had been lacking in the formulation of policies as important and diverse as eco-towns, renewable energy and large IT projects"<sup>36</sup>.

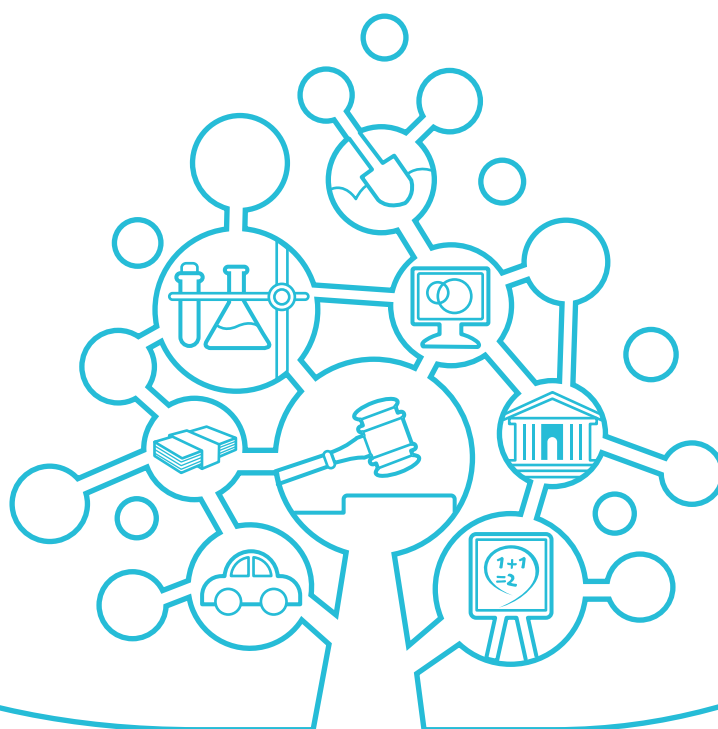
As the Aldersgate Group has often argued, the Government must address this deficiency without delay, providing more extensive training, real opportunities in terms of career progression, and strengthening links between the public and private sectors through secondments<sup>37</sup>. Mainstreaming initiatives such as Forward Commitment Procurement that specify future performance standards (rather than relying on today's technologies) will only be possible with the appropriate in-house expertise in place.

34  
Environmental Audit  
Committee (July 2009)  
*Greening Government*.

35  
Sustainable Development  
Commission (May 2009)  
*Sustainable Development in  
Government (SDiG) 2008:  
Challenges for Government*.

36  
Innovation, Universities,  
Science and Skills Committee  
(March 2009) *Engineering:  
Turning ideas into reality*.

37  
Aldersgate Group (June 2009)  
*Commission Statement: Driving  
Investment and enterprise in  
green markets*.



# Employment and the social implications of the low carbon transition

*The transition to a low carbon economy has the potential to be a major source of wealth and employment. These benefits will need to be communicated effectively to the general public, so that the transition becomes accepted as a positive change. More needs to be done. The United States Government has published a website<sup>38</sup> providing easy access to data relating to its stimulus package, including regional spending, job creation by state and case studies (such as the employment and economic benefits of a domestic energy efficiency scheme in Ohio<sup>39</sup>). In comparison, the DECC website is not very accessible to the general public with too much focus on policy and not enough practical information.*

However, the Government needs to beware of making simplistic claims. There are political advantages in claiming that, for example, the UK can expect 400,000 new environmental sector jobs over the next eight years<sup>40</sup>, but the current government classification for a “green job” is ill-defined and can be unhelpfully broad. This led *The Times* to report that figures for green collar jobs were a “sham” as they included workers from the North Sea gas industry, petrol stations attendants on forecourts where liquefied petroleum gas is dispensed and manufacturers of skylights, wooden pallets and slippers.<sup>41</sup>

In any event the whole notion of “new green jobs” fails to take account of the fact that the Government’s ambition is to transform the whole economy so that, over time, almost every occupation could be described as “green”. The Aldersgate Group believes that there is little advantage in arguing whether a particular job is “green”; the aim should be to accomplish a transition that brings widespread economic and social benefits.

On the other hand, the Government will obviously need to monitor the occupational changes in the workforce during the transition. For this purpose it would be sensible to build on the approach demonstrated in the Pro Enviro report commissioned by Defra. This published a skills checklist for a low carbon and resource efficient economy that can be applied to all sectors and contains all types of skills<sup>42</sup>. An example of how this can be done in practice is demonstrated by the Gold Standard approach adopted by Cogent SSC which enables Continuing Professional Development (CPD) for all job roles through upskilling job specifications<sup>43</sup>.

At all times the Government should accept that the transition involves massive and complex changes that will create losers as well as winners. The Government needs to engage actively with the nation’s workforce about the widespread implications of the transition and accept the need to intervene to provide the necessary level of social protection that is expected of a government in a civilised society. For this reason the Government commitment to a transition which is socially just<sup>44</sup>, with the creation of a new advisory forum, is especially welcome. This forum should be set up in the near future and must ensure that the new jobs and occupations are developed ahead of the decline of old ones associated with resource intensive activities, which the new low carbon economy will no longer demand.

38  
[www.recovery.gov](http://www.recovery.gov)

39  
[www.recovery.gov/News/featured/Pages/OHWeatherizingHomes.aspx](http://www.recovery.gov/News/featured/Pages/OHWeatherizingHomes.aspx)

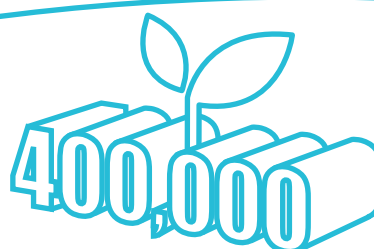
40  
Gordon Brown (March 2009) *Speech to Low Carbon Industrial Summit*.

41  
Robin Pagnamenta (July 2009) *The Times*, *Slipper makers and gas staff included in 1m green jobs ‘sham’*.

42  
Pro Enviro (2008) *Skills for a low carbon and resource efficient economy: A review of evidence*, p100.

43  
[www.cogent-ssc.com/Gold\\_Standard/index\\_3.php](http://www.cogent-ssc.com/Gold_Standard/index_3.php)

44  
HM Government (June 2009) *The UK Low Carbon Industrial Strategy*, p86–88.



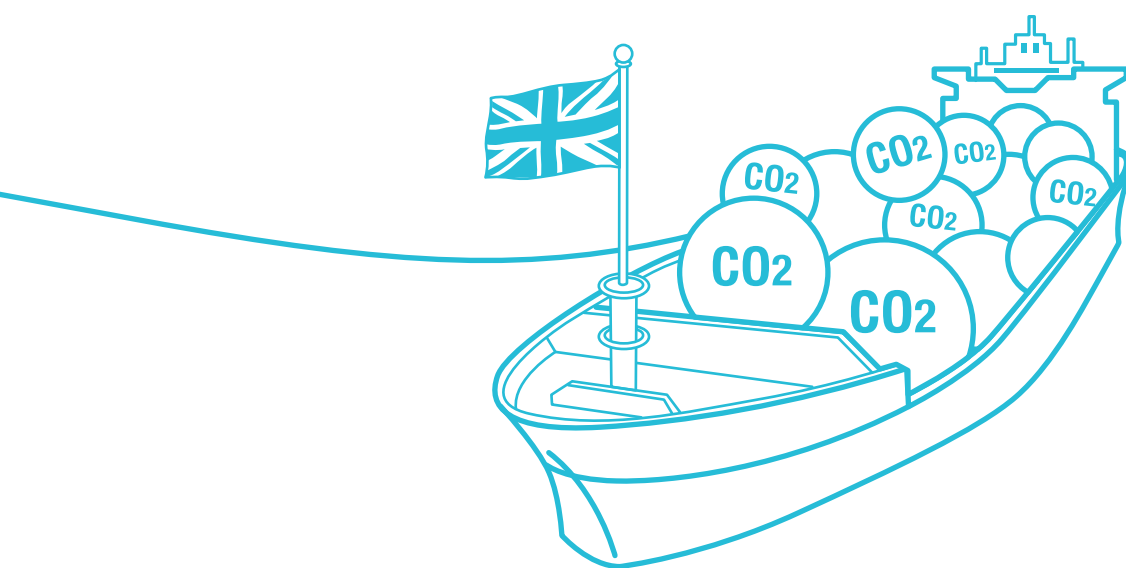
# Conclusion

*This report has built on the broad political commitment for more activist industrial intervention in environmental sectors to demonstrate where targeted support for skills can accelerate the transition to low carbon. A key point to bear in mind is that supply side policy must complement and develop in step with the Government's overall framework to foster world leading environmental markets and significant barriers must still be overcome (such as the design of incentive structures, planning legislation and supply infrastructure).*

The successful German renewable energy industry is built on an effective long-term regulatory framework and supplemented with investment in the skills necessary for high-tech manufacturing, with particular focus on the education system. The sector is now made up of a large number of innovative companies that are world technological leaders and employ 214,000 people. A recent growth strategy for Germany states that “green tech is an anchor of stability for the German economy and crucial to a new economic upturn. Green tech and green services are driving forces for growth. In the coming years we will create more than one million new jobs in this area”<sup>44</sup>.

If the UK is going to compete with the likes of Germany in global low carbon markets, political commitments for a new industrial activism must become a reality with ambitious skills policy and effective delivery. A key component must be to build skills in specific high-tech sectors, develop generic skills across the economy and proactively transfer skills across from high carbon sectors where jobs will be lost. Government must assume a central role but businesses, trade unions, professional bodies and the workforce must all play their part. At stake are the jobs, competitiveness and prosperity of the future.

44  
Frank-Walter Steinmeier and  
Sigmar Gabriel (June 2009) *A  
Growth Strategy for Germany:  
New jobs through investments  
in energy and environment.*



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# Aldersgate Group

## Providing the economic case for high environmental standards.

### Who We Are

The Aldersgate Group is a high level coalition of progressive businesses, environmental groups and MPs who believe that high environmental standards will be a major part of future economic growth and international competitiveness.

By presenting objective evidence based on the diverse experience of our members, we promote the case that there is no inherent contradiction between regulating for high environmental standards at the same time as maintaining economic growth and stimulating wealth creation. Quite the reverse: no economic policy which sacrifices environmental quality can succeed in the long term.

### Our Aim

To engage actively with government and other key decision makers to contribute to the future development of UK economic, environmental and sectoral policies, as well as providing a distinct voice that advances the better regulation and sustainability agendas.

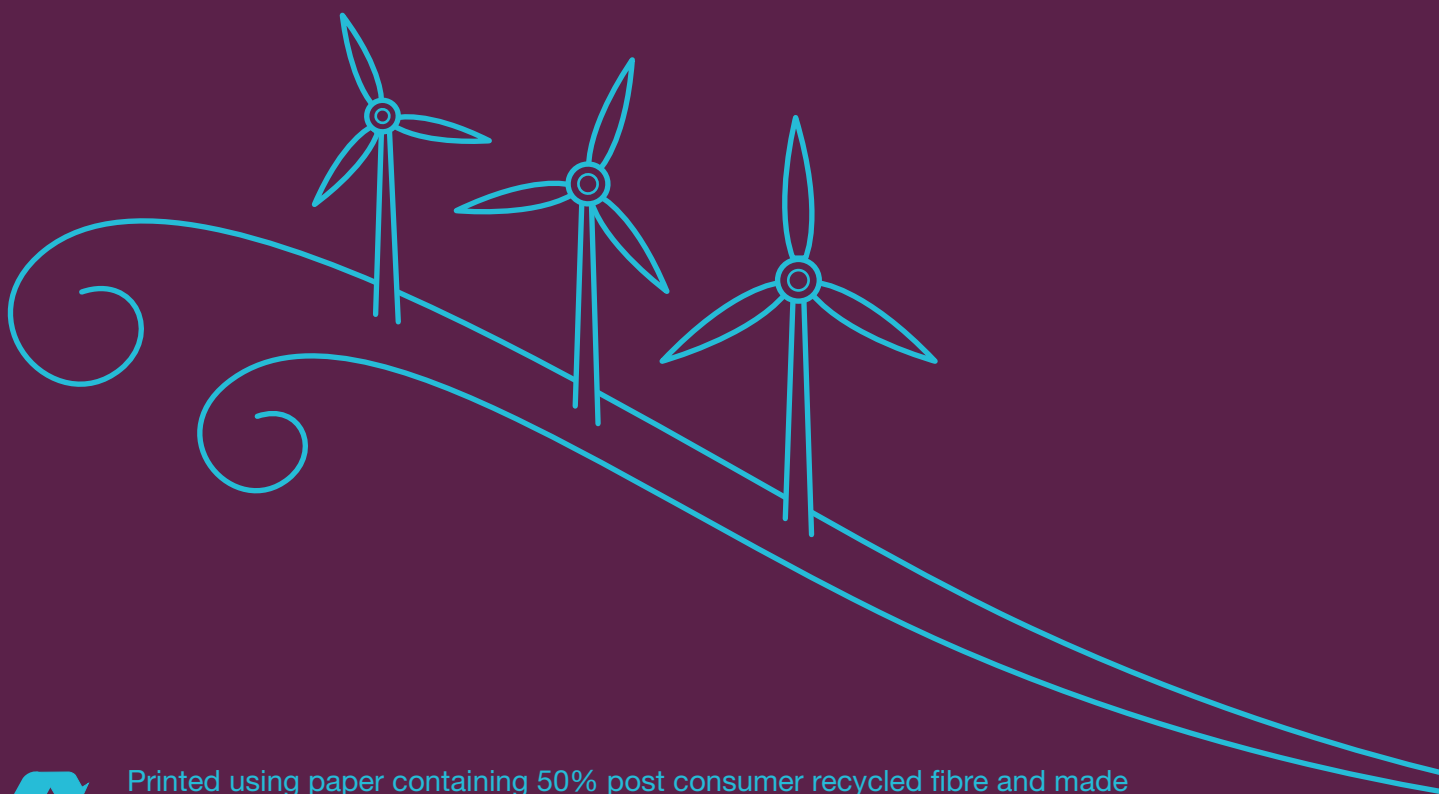
### Our Members

The Group brings together a broad range of players including major corporations, professional bodies, industry leaders, public sector organisations, NGOs, Parliamentarians and others who press for better, smarter environmental regulation that will help manage the transition to a more eco-efficient economy. By combining resources and expertise, the Aldersgate Group is an authoritative and distinctive voice which influences current political debates and government policy.

### Key Messages

- 1 Our long-term economic success depends on a healthy environment and the sustainable use of natural resources.
- 2 At the company level, good environmental performance translates to tangible economic benefits and is a major source of competitive advantage.
- 3 Better environmental regulation creates new business and employment opportunities in a fiercely competitive global marketplace.
- 4 Policy appraisals must accurately assess environmental costs and benefits.
- 5 The better regulation agenda must not lose sight of the need to maximise outcomes in the drive to reduce unnecessary costs.





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