

Low Carbon Skills North West: How to Raise the Game

A REPORT BY
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1. Introduction

This project has been commissioned by Wigan Council to continue their work supporting growth of the low carbon economy both in Wigan and in the North West as a whole. It is funded by CLASP and undertaken by New Economy (www.neweconomymanchester.com) and Cooler Projects CIC (www.coolerprojects.com). The key audience is local authorities though it is recognised that others will find it useful.

The aim of this project is to explore the standing of Low Carbon Skills in Wigan with a small sample of educators and employers and to identify practical steps local authorities (and to an extent their partners) can take to support skills development in the low carbon sector.

This project's objectives are to:

- identify current issues and barriers relating to employer engagement in supporting career development in the low carbon skills sector;
- understand the core issues and barriers education providers face; in supporting career development in the low carbon sector and in including low carbon content in curricular;
- recommend practical actions that local authorities and educators can take to support career development in the low carbon sector.

Building on existing research

This project responds to an identified need to develop skills required to support the transition to a strong and sustainable low carbon economy. People need the right knowledge and skills to research, produce and use low carbon technologies and solutions that will enable businesses to take advantage of the opportunities in this sector.

BIS-commissioned market intelligence put the global market value of the low carbon and environmental goods and services sector at around £3.2 trillion in 2008/9. The UK's sector is already valued at £112 billion with almost 910,000 jobs¹. Developing low carbon skills is a priority for the North West region, as noted in *Future Northwest: Our Shared Priorities (2010)*.²

This project follows the comprehensive study *Research into Low Carbon Skills in Wigan*, commissioned by Wigan Council and undertaken by Pye Tait Consulting (2012)³ – which stated in its summary:

- *The Low Carbon Economy offers potential to safeguard existing jobs and create new ones, as well as the scope to up-skill the workforce.*
- *It is vital that the transition to a low carbon economy be underpinned by the adaptation and use of existing skills in new ways, rather than being wholly dependent on the development of a wide range of entirely new skills.*
- *To ensure the full transition, a mix of technical and generic skills and knowledge will be needed – and not just across the workforce operating in what might be termed primary low carbon jobs. Skills and knowledge requirements can be categorised into: Technical (Primary); Non-technical (Secondary); Generic holistic knowledge and awareness of the low carbon agenda.*
- *Another core critical success factor to ensure the transition to a low carbon economy is a cultural and behavioural shift. Demand for low carbon products and services will rely heavily upon knowledge and understanding of the low carbon agenda. Achieving this shift towards what might be termed a 'low carbon lifestyle' relies on embedding knowledge across all employers, occupations, and target markets, and within the 14-19 curriculum.*

¹ <http://www.bis.gov.uk/policies/business-sectors/green-economy>

² http://www.4nw.org.uk/downloads/documents/aug_10/4nw_1281965953_FINAL_Future_NW_main_doc1.pdf

³ www.pyetait.com

Key Findings

Building on the 'Low Carbon Skills in Wigan' report this project has not found evidence of structured, on-going engagement between employers and educators on low carbon skills in Wigan. There are, however, good practice examples of how such engagement can achieve positive results and the evidence suggests that there is both resource and a rationale amongst employers and further education (FE) providers to create, formalise and accelerate these links. Our key recommendations therefore focus on strengthening links between FE providers and employers and to build interest in the agenda by providing credible information on best practice.



2. Context

The case for a Low Carbon economy

The environmental case for moving to a Low Carbon Economy is well evidenced. The Stern Review of the Economics of Climate Change⁴ was presented to Government in 2006 and concluded “the scientific evidence is overwhelming: climate change is a serious global threat, and it demands and global response”. Total CO2 emissions in the North West increased by 2,600kt between 2009 and 2010 to stand at 54,800kt. The North West contributes 10% of Green House Gases (GHG) from Environment Agency regulated sites emissions in England and Wales.⁵

In addition to the environmental benefits, adaptation and mitigation to climate change creates business opportunities for new and existing businesses. These businesses operate in the “low carbon and environmental goods and services” (LCEGS) sector and contribute to the development of a low carbon economy. Transforming to a low carbon economy will require new skills for both the LCEGS sector and in the wider economy so all businesses sectors understand the risks and opportunities. A skilled workforce is essential for business growth and a lack of the correct skills can act as a barrier to growth.

The economic opportunities of a Low Carbon Economy can be summarised as:

- Opportunities for business growth and innovation;
- Risk minimisation for employers facing unpredictable energy costs;
- New employment opportunities;
- Safeguarding jobs;
- Cost saving through resource efficiency and better quality of life for residents;
- Investing in risk mitigation if climate change disrupts the economy; and
- Enabling organisations to better conform to climate change legislation.

⁴ http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview_index.htm

⁵ <http://neweconomymanchester.com/stories/1725-north-west-annual-assessment>

Low Carbon economy in the North West

The report for the National Strategic Skills Audit for England (2010)⁶ came to a number of conclusions on the Low Carbon Economy in the NW. The sector is currently relatively small-scale in terms of direct jobs, but has a great deal of potential for growth.

Current and projected shortages of skills in the sector, particularly in relation to STEM subjects (Science, Technology, Engineering and Maths); mean that the low carbon sector will need to compete for STEM graduates with industry as a whole. Wind and nuclear will be the most important sectors in driving growth between now and 2020, but barriers such as access to finance and planning are significant. Marine and carbon capture and storage are unlikely to contribute materially to employment in the period to 2020, and will come to fruition thereafter.

The extent to which new jobs will necessarily be generated throughout the value chain in the medium term varies by sub-sector. In the wind and nuclear sectors, it is likely that there will be relatively large numbers of jobs created in construction and installation, given the ambitious plans for installing new capacity in 2020. However, there is less likelihood of significant numbers of manufacturing jobs. There is no clear evidence that technical jobs in the sector will change markedly over the next decade – rather, differences are likely to emerge by degree.

There is a lack of official national statistics on the low carbon sector and the ongoing debate over what constitutes a “green job”. The government will play a critical role in how it seeks to stimulate demand with incentives, and also in how it can remove barriers that could otherwise hinder growth.⁷

It has been suggested that the North West already possesses much of the business and skills base needed to respond to these challenges and capture the economic benefits of developing and marketing these new goods and services. To illustrate, the low carbon economy market in the North West:

- is estimated to be worth £11.8bn, the fourth largest of any UK region.
- employs 93,000 people (which represents 3% of total employment within the region);
- accounts for 5,000 businesses (2% of region’s business base);

⁶ <http://www.ukces.org.uk/ourwork/nssa>

⁷ <http://www.ukces.org.uk/assets/ukces/docs/publications/evidence-report-16-strategic-skills-needs-in-the-low-carbon-energy-generation-sector.pdf>

- has been growing at 4-5% per annum even during the recession, compared to all economy pre-recession growth rates of 2-3%; and
- has the potential to tap emerging strong demand for low carbon and resilience technologies within the NW's target export markets⁸.

Low carbon skills are not just confined to the Low Carbon sector however. The North West economy has strengths across a number of sectors such as advanced manufacturing, life sciences, creative/digital, logistics, nuclear and food & drink. These strengths will be crucial, both for the region as we seek to raise our productivity and exploit overseas markets, and for UK plc as it seeks to rebalance its economy.

Skills levels in the North West

Our industrial heritage has left the region with a relatively high proportion of residents with no or low qualifications, with weak basic skills, and with a minimal entrepreneurial culture when compared to other countries and other parts of the UK. To illustrate the scale of these challenges:

- **12% of NW residents have no qualifications** (cf. 11% for the UK); this figure rises to 14% in Liverpool City Region;
- **1 in 4 NW working-age residents (1.125m people) has literacy or numeracy difficulties**, with the rates especially high in Liverpool City Region, Greater Manchester and Cumbria (27-29% of residents in these sub-regions);
- **32% of the NW working age population does not hold a Level 2 qualification vs. 30% nationally**. Again, Level 2 non-attainment rates are highest in Liverpool City Region (34%) and Cumbria (33%);
- **Labour force productivity** (measured in terms of GVA per hour worked and a good proxy for skills) is **20-33% lower than the England average** in locations such as Blackpool, Blackburn, East Cumbria and parts of Liverpool City Region;
- 35-40% of UK employers feel that their staff lack customer handling, team working and problem solving skills – within a NW business base of 250,000 firms this equates to **90,000 NW firms who could benefit from relevant skills training activity**; and
- **Self-employment rates are noticeably lower than the national average** (9.2%) in Greater Manchester (7.7%) and Liverpool City Region (6.4%).⁹

⁸ http://neweconomymanchester.com/stories/1639-regional_research (Low Carbon Infrastructure)

⁹ http://neweconomymanchester.com/stories/1639-regional_research (Tackling Deprivation)

The Education Landscape

The post-11 education landscape has changed significantly over the last decade. In addition to traditional Maintained Schools, there are also Academies, Free Schools, University Technology Centres and Studio Schools (as well as private independent schools).

In the context of low carbon skills this presents opportunities to influence educators; the freedom to adapt the curriculum has increased in some cases; and there is now a need for institutions to maximise take up of their places (and thus, as employer interest in low carbon skills increases so should the employability of carbon competent students).

If the case for low carbon skills in the curriculum can be made more strongly these two factors should increase the ease and willingness of educational institutions to respond.



We have attempted to bring together – for the first time for many – the various different elements of the changing education landscape. The following is an overview of this landscape, and how each type of institution is affected by the current National Curriculum. For further information please see the DfE website¹⁰:

Maintained Schools: schools, including secondary maintained schools, are funded by central government via the local authority, and do not charge fees to students. The categories of maintained school are: community, community special, foundation (including trust), foundation special (including trust), voluntary aided and voluntary controlled. There are also maintained nursery schools and pupil referral units. A governing body has general responsibility for the conduct of the school with a view to promoting high standards of educational achievement. The governing body is comprised, in the main, of Parent Governors, Staff Governors, Authority Governors and Community Governors. Of all the sectors, maintained schools are the most strictly controlled in their curriculum delivery.

Academies: Academies are publicly-funded independent schools. Academies benefit from greater freedoms to innovate and raise standards. These include: freedom from local authority control; the ability to set their own pay and conditions for staff; freedoms around the delivery of the curriculum; and the ability to change the lengths of terms and school days. Some academies, generally those set up to replace underperforming schools, will have a sponsor. Sponsors come from a wide range of backgrounds including successful schools, businesses, universities, charities and faith bodies. Sponsors are held accountable for the improving the performance of their schools. They do this by challenging traditional thinking on how schools are run and what they should be like for students. They seek to make a complete break with cultures of low aspiration and achievement. The sponsor's vision and leadership are vital to each project.

Sixth Form Colleges: Sixth-form colleges are not part of the schools sector but independent, autonomous institutions and an important part of the strong, coherent and diverse 16-19 provider base that forms the educational marketplace for young people and adults. The Apprenticeships, Skills, Children and Learning Act 2009 inserted new provisions into the Further and Higher Education Act 1992 to make provision for a new legally distinct sixth-form college corporation sector. Schools regulations and legislation do not apply to sixth-form colleges.

University Technology Colleges: University Technical Colleges (UTCs) are technical academies for 14- to 19-year-olds. They have university and employer sponsors and combine practical and academic studies. UTCs specialise in subjects that need modern, technical, industry-standard equipment – such as engineering and construction – which are taught alongside business skills and the use of ICT. UTCs

¹⁰ <http://www.education.gov.uk/schools/leadership/typesofschools/academies/b00205692/whatisanacademy>

have been created to improve the quality of vocational education for 14-19 year olds. Pupils integrate academic study with practical learning, studying core GCSEs alongside technical qualifications. The curriculum is designed with local and national employers who also provide support and work experience for students.

Free Schools: Free Schools are all-ability state-funded schools set up in response to what local people say they want and need in order to improve education for children in their community. Through the Free Schools programme it is intended to be much easier for talented and committed teachers, charities, parents and education experts to open schools to address real demand within an area. Free Schools are required to provide a broad and balanced curriculum to include English, maths and science and to make provision for the teaching of religious education. Beyond this they have the freedom to design a curriculum which meets their pupils' needs, aspirations and interests.

Studio Schools: Studio Schools are an innovative new model of 14 to 19 year-old educational provision. They are small schools - typically with around 300 pupils - delivering mainstream qualifications through project based learning, backed by local businesses and employers. Students work with local employers and a personal coach, and follow a curriculum designed to give them the employability skills and qualifications they need in work, or to take up further education. They often have a specialism, but focus on equipping young people with a wide range of employability skills and a core of academic qualifications, delivered in a practical and project-based way. Curriculum entitlement is not clear from the DfE website, but the Studio Schools Trust¹¹ states that like traditional schools, Studio Schools will teach the national curriculum.

Work Related Learning: The key route for delivering work related learning is through work experience. It is worth noting that until 1st September 2012 local authorities had a statutory duty to provide every pupil at Key Stage 4 with a standard amount of work related learning. From 1st September 2012 schools have been free to make their own arrangements for work experience in line with what they feel is appropriate for their young people; there is no longer a statutory obligation for schools to develop a work experience or work-related learning programme. The change has led to concerns that young people may leave school without having had any appropriate work experience or knowledge of the world of work. The benefits of employer engagement in particular were highlighted in a recent report on youth unemployment by the North West Regional Leaders' Board¹². A survey of over 300 11-18 year-olds for the Education and Employers Taskforce found that young people who had had careers advice from four or more employers were almost twice as likely as those who had had no contact with employers to report having a good idea of the

¹¹ <http://www.studioschoolstrust.org/studio-schools/essential-elements-studio-school>

¹² http://neweconomymanchester.com/stories/1655-youth_unemployment_analysis_and_best_practice

knowledge and skills they needed for the jobs they wanted to do, and were more than twice as likely to feel confident about finding a good job. The same report also revealed that the more young people (aged 14-19) come in to contact with employers whilst they are at school, the less likely they are to become NEET (19-24). Engagement with employers is clearly therefore an important element of the wider careers activities that schools need to offer.

Careers Guidance: The Education Act 2011 transfers the statutory duty to deliver careers guidance for 14 to 16 year olds and other careers activities from local authorities to schools; schools will be expected to work in partnership with external and expert careers guidance providers to ensure that their pupils get good advice on the full range of post-16 options. Under the Act, schools are required to secure access to independent careers guidance for all pupils aged 14-16, either from the new all-age National Careers Service (NCS) or from other accredited providers. Local authorities will continue to have a statutory duty to provide services to young people, enabling them to participate in education and training, as set out in the 2008 Education Act. Careers guidance for young people aged 16-19 (who are not deemed to be 'vulnerable'), is now provided through the Government's new National Careers Service and through services delivered by post-16 providers (colleges, WBL providers etc). However, the support for those aged 16-19 is limited to the NCS website and telephone number; they will not have access to personalised, face to face careers guidance (this is available for adults aged 19+ and remains available because BIS has continued to fund it). There are concerns that without this face to face guidance and support more and more young people, particularly those with poor GCSE results or that perhaps don't have home access to a computer, will be at risk of becoming NEET. Some support will be available through the NCS Community Pathfinder pilot work for young people aged 16 – 18 who are not NEET, but who may wish to change direction and seek guidance on options available to them.

Private Sector Trainers and Work Based Learning Providers : The other part of the education that related to this project are private sector trainers and work based learning providers, some of whom were mentioned by employers as providing credible sector-specific vocational training at FE and HE level. Work based learning encompasses a broad range of programmes including apprenticeships, NVQs, and other professional vocational qualifications and employability training programmes.

3. Findings / Analysis

Employers' responses

We interviewed a range of employers from large food processors to SME's, from the public, private and third sectors. A series of questions were asked of all interviewees to establish the extent to which the organisation is currently engaged with a move towards a low carbon economy. We have assumed that **carbon literacy and an understanding of opportunities and constraints presented by a low carbon economy will be needed for employees in all sectors.**

The combined responses would support this view, as all respondents suggested that they were aware of either the risks or opportunities presented by a move to a low carbon economy. Opportunities identified included maintenance and installation of renewable energy technologies including retrofit; likely to increase as companies look to make savings in energy costs and cut carbon emissions. Opportunities for cost savings were also identified as were marketing opportunities in publicising carbon reduction achievements and local sourcing of products and services

That said, even within the parameters of a small sample of employers there was a **surprising variation in the current take up of the low carbon agenda.** For example, comparing two food handling companies – one adhered to an industry standard (the Food and Drink Federation Five Fold Environmental Ambition) whilst the other simply stated that cost was the primary driver and that the need to respond quickly to fluctuating client demand negated their ability to prioritise this agenda to some extent.



The project asked employers about how much they valued **low carbon skills in new recruits** and this response was more widely held – that basic literacy and numeracy was a far higher priority – and lacking in some recruits. Most interviewees recruited from colleges with very few taking on 16 year olds which would seem to indicate that vocational low carbon skills are a concern for post 16 educators.

The majority of organisations participating in the research **integrate sustainability data into the organisation's overall reporting framework**. This included reporting on travel miles (land and air), waste including food waste, water, gas and electricity use and one respondent also reports on what they are doing for the local community. There were a number of respondents that do not report on sustainability / environmental performance, in one case the respondent suggested that energy use is reported but that use is high due to the nature of the business (food processing) and that food safety was necessarily a much higher priority than energy reduction. There was a healthy range of **engagement with schools** including donations for equipment, school talks and providing work placements. There was also a strong recognition of the benefits for the employers to undertake such activities. In general there was much less interaction between employers and further education providers than with schools and not all respondents could explain why they were not interacting with colleges more frequently.

Some employers noted that there was **a lack of local or appropriate specialist vocational learning** either for recruits or current staff. Appropriateness was gauged by one respondent as having evening classes available for SME staff where day release for training might not be practical. Private training providers were used by some respondents. These observations should be borne in mind in the provision of specialist low carbon skills training.

Employers clearly want to have some involvement in this agenda. Many businesses will reach out to skills providers on an ad hoc basis or through their corporate social responsibility agenda. However, in some instances the link is more formalised and developed.

Cooler CIC co-ordinate the roll out of the Carbon Literacy project (www.carbonliteracy.com) and have had some experience of private sector and other major employers joining this project. One example is of the large shopping centre, Manchester Arndale, who have embedded Carbon Literacy in their CPD, using it in their induction for all employees and using their own trainers for its delivery. The Co-operative Group have used facets of Carbon Literacy in their in-house on-line learning system for their retail staff.

Wigan & Leigh College hosts a Construction and Building Engineering Steering Group which already links with local firms. It has a strong drive towards low carbon

skills development and is an excellent example where businesses of different sizes can engage on a practical level.

The emergence of University Technology Colleges has emphasised the desire for many in the private sector to get involved with skills provision and none more so than in low carbon skills. Wigan UTC is a good example where local, national and international businesses are providing support to help develop relevant, necessary skills which also have a low carbon emphasis. Liverpool's Low Carbon and SuperPort UTC – set to open in 2014 – is another clear example of business interest in this agenda.



Educator's responses

Three educational institutions were interviewed – the Wigan University Technical College (UTC), Wigan & Leigh College and Winstanley College. The three institutions overlap in their teaching of 16-19 year olds. Wigan & Leigh College is a leading partner in the UTC (which opens its doors in September 2013) and both Colleges compete for 6th Form students. The latter (and possibly the UTC) all depend on maximising student numbers to maintain their operational budgets. The three institutions were **all admirably aware of the Low Carbon Skills agenda** but represented a spectrum in terms of how this was implemented.

Winstanley add elements of the agenda to some courses but make sure that:

*'Students also see where the college is **practising what it preaches** in terms of low carbon: biomass boiler, sustainable procurement policy, energy efficiency, recycling as well as specific events like switch off fortnight.'* Wigan & Leigh said that *'All curriculum areas are to have low carbon measures embedded'* and the UTC said that *'Embedded across the board, within 6 weeks of attending all students should be aware of low carbon skills and terminology.'*

All respondents value **employer engagement** but varied in how they perceived employers' views on the low carbon agenda. The UTC, with their specialism in engineering, have embedded employer involvement throughout its plans and state that *'Low carbon skills should be part of the underlying skill set of the UTC'*. Wigan & Leigh, in spite of their commitment to the agenda feel that;

'In terms of 'Carbon Literacy' as a generic workplace competence, it seems that many people don't want to invest in education generally, never mind 'low carbon' education... We feel that we are making a bit of a leap of faith in some ways with our emphasis on low carbon skills/technologies/qualifications - at the moment do employers really want these?'

Winstanley go further and say;

'We have employers in and so far no one has mentioned the low carbon economy. Low carbon skills seem to be transferable skills and we hope that these are things our students learn and develop while they are here.'

We feel that this underlying enthusiasm for the agenda – within the context of a range of implementation options – offers opportunities for action to help greater take up that will also serve the needs of employers.

In addition to what we asked, educators raised other issues. There is a clear desire to access the wealth of **information held by local authorities**. Wigan Council's recent thermal imaging survey is a case in point – where education providers such as the College and the UTC can see clear ways this could be fed into curriculum development.

However, in supporting the development of low carbon skills, local authorities also hold a plethora of other information and data; have ready access to much more and have the skills to translate information for the local area. This needs to be developed further. One particular area is the need to ensure regeneration and planning links in better so that students can see the wider picture – namely, low carbon skills do not exist in a vacuum. Skills providers are keen to ensure this is explored.



4. Toolkit: Recommended Actions

Evidence and Data

A single repository is needed to allow evidence to be collated in the form of case studies. This can also help identify advocates for low carbon skills. Local authorities should look to host this either individually or collectively. The planned Greater Manchester repository for climate change news and data (working title, 'Platform') may suffice for these purposes in the local area – although this may be a role CLASP could also play.

Case studies should cover successful low carbon careers, successful delivery of low carbon skills and testimonials from employers of all shapes, sizes and industries. Care should be taken to ensure it is not focused just on large businesses – SME's and micro businesses need encouraging too.

There is limited knowledge in some areas of just which businesses are involved in the low carbon sector. This is in the main, as the Pye Tait study identified and as we discovered, because many businesses see low carbon as 'an approach' rather than their core function. Therefore, some form of evidence-gathering needs to be done to ensure this central repository holds that information.

Local authorities are also rich in relevant data about their areas which could form engaging learning material. They need to release this to the education and skills delivery sector – finding new ways of sharing details about their local area, mapping, policy interpretation and area-wide plans, to enable curriculum to be developed around it. Wigan can make its thermal imaging data or its climate change vulnerability mapping available to skills providers so that they can feed it into the curriculum – providing real world examples for students.

Regeneration projects, especially those with a low carbon agenda - should routinely be flagged up with education providers to allow them to adapt their learning to real-life situations. This could be done through the planning system and need not be an onerous task. This will also help engage young people with the future of their area. A central repository can help with this.



Communication

This is covered by two strands.

Firstly we need to ensure that skills delivery and skills providers are better connected to each other and to business. Support needs to be given to nascent networks of educators and colleges to enable them to break out into the wider economy but where local networks do not exist, these should be encouraged. We believe that a successful network should contain representatives from the business sector, local authority, education providers, commercial skills organisations, students and career guidance. These networks should be informal, meeting infrequently but exchanging information regularly. The information repository suggested above might be a good route to facilitating such exchanges.

Existing networks can be utilised – especially where a local authority wishes to create a local network. Amongst others, the Manchester Environment Education Network works across Greater Manchester (www.meen.org.uk), Lancaster Global Education Centre (<http://www.lgec.org.uk/>) have links beyond that city and the national Eco Schools campaign ran through Tidy Britain is based in Wigan (<http://www.keepbritaintidy.org/ecoschools/>) The latter's Energy module is a useful foundation for educators in the low carbon skills area. ,

Secondly, we need to communicate with young people, businesses and the wider community the benefits of low carbon skills *but on their terms*. Too often they are spoken to as if skills delivery is being done to them and not with them or for them. We should encourage the use of iconic figures not traditionally associated with low carbon/low carbon skills and education such as Dame Ellen MacArthur (<http://www.ellenmacarthurfoundation.org>) or Gary Neville for instance – people who have something to contribute but from a different angle more likely to engage or arouse interest.

We would also suggest that it be made clear just what and who is being targeted. Between the ages of 11 and 14 it would be inappropriate to divert too much attention away from basic skills provision. Many employers are concerned that young employers entering the workplace do not have the basic skills and are not overly worried about their understanding of low carbon. That said, there is good learning practice that uses low carbon as a theme for literacy and numeracy.

Much is being delivered pre-secondary school and we see no reason to change that. However, we believe from our research that after students enter secondary school the picture becomes blurred. We propose, therefore that the focus should be as follows (national curriculum permitting):

Age range	Focus	Sample Providers
6 – 11 years old	Environmental awareness	Primary Schools
11- 14 years old	Low Carbon awareness	Secondary Schools
14 – 16 years old	Low Carbon skills awareness/ development focus	Secondary Schools / University Technical Colleges (UTCs)
16 – 19 years old	Low Carbon careers focus	Secondary Schools / UTCs / Sixth Form Colleges / Work Based Learning
Post 19	University / In-work skills awareness	Universities / FE Colleges / Work Based Learning

Low Carbon awareness is similar to the ‘Carbon Literacy’ approach being undertaken in Manchester (by Cooler, www.carbonliteracy.com) and other GM authorities. It should cover basic numeracy and literacy.



Careers Guidance

Particularly in the wake of the changes out-lined in the ‘Education’ section above, careers guidance is often seen as patchy and of limited use in some areas. It is not particularly geared up to deliver on the low carbon agenda. FE providers need to be engaged to ensure that careers guidance is the key link between educators and employers for 16-19 year olds. This guidance should include not just information but

practical demonstration of jobs in action – and case studies collated as suggested above could help with this.

Employer engagement in education

Schools are not just production lines for producing employees but we cannot ignore the changing approach to education with its greater emphasis on vocational relevance and workplace readiness for pupils. Space must be found to allow selected employers into schools and FE colleges to assist students.

However, we also believe that it would be wrong to think this engagement should be done only with the students. Teachers and educators need to be helped as well so that they can see the benefits and opportunities too. A teacher who can see the benefits first hand, and who may be able to put them into practice in their everyday life, will be a powerful advocate for low carbon skills. So there should be some focus on them specifically.

Engagement should be on non-partisan grounds. There is no *quid pro quo* for the businesses except helping their sector and the area. Many examples exist where these arrangements are happily working. The approach to UTC's – such as in Wigan - demonstrates where this is an intrinsic part of the establishment, but the partner companies get no direct reward for their involvement. Employers could also benefit – where possible – from engaging with trade unions such as through “Green Reps”.



Central register of employers

A central register of employers should be part of the repository we identified above. However, here we are specifically talking about a register of employers who are prepared to engage with schools (via visits, work experience or other support). Low

carbon champions, cutting edge technologies or innovative aides to the curriculum can also be highlighted.

New Economy and the Chamber of Commerce in Greater Manchester are exploring a register that is not specific to low carbon skills but could have an element which focuses on it. Such a project could also be opened up further to demonstrate work across the North West. Some employers have reach beyond the local area – such as the food manufacturing sector in Wigan – and this should be utilised.

Research

As well as specific actions, we feel that further research would also benefit the development of low carbon skills in Wigan and the North West.

The fragmentation of education (see above) means that little is understood about the emerging different approaches to curriculum provision and its impact on low carbon skills. In the first instance we would suggest that there needs to be an understanding of the differences between curricula across the area. It will primarily be differences in approach.

This may only emerge over the coming months and years but the local authority should assume responsibility for collecting and disseminating that information. We believe that there will already be people with this knowledge and reach who are able to assist.

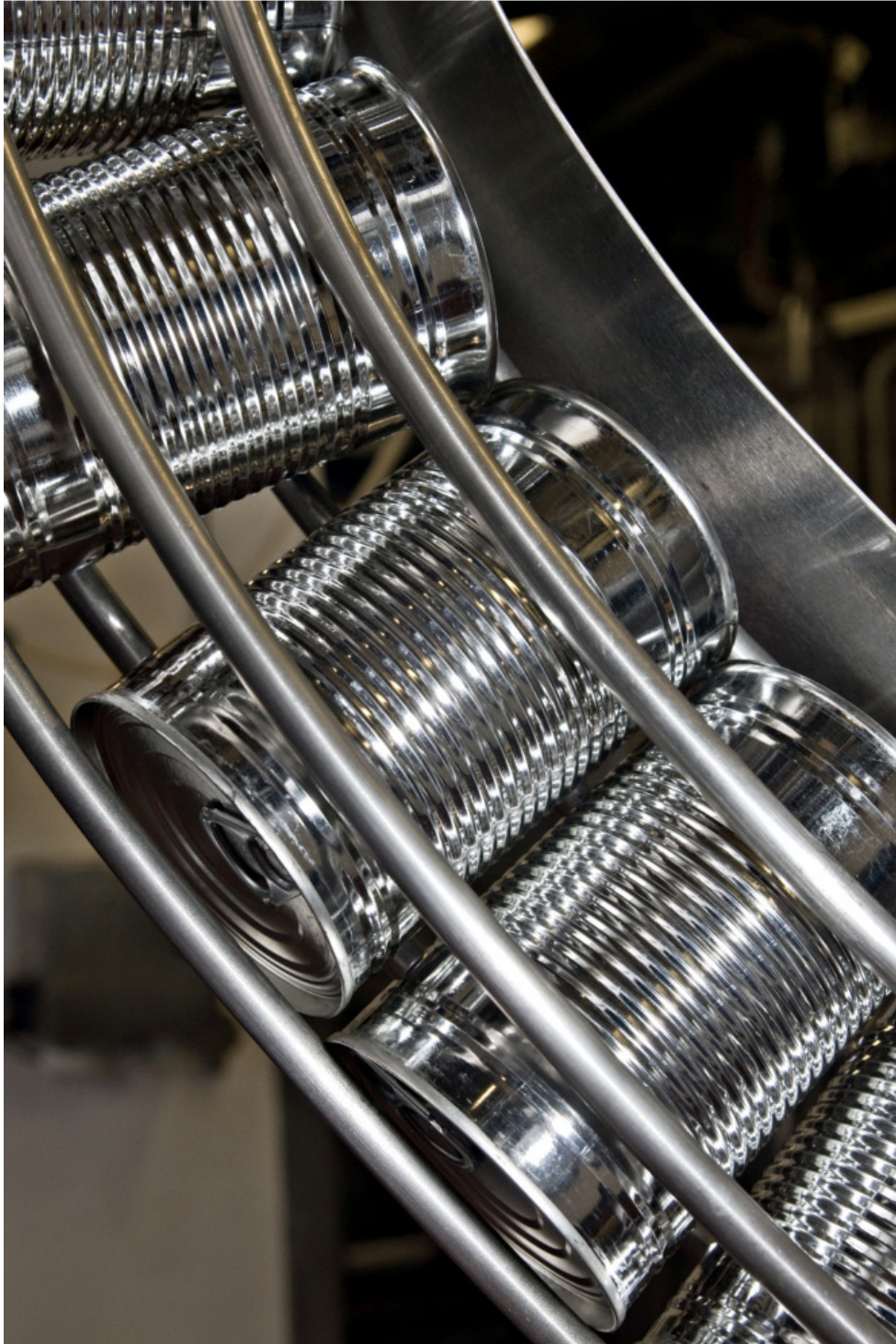
Research should also be undertaken to understand the skills requirements of specific low carbon goods and service providers. Although it has been considered before, the answer always seems to elude us. Perhaps this is an issue of focusing exactly on what we mean by low carbon and having a clearer understanding of local businesses. This should be linked into the area's Economic Strategy but also be shared with other areas and industries. Local authorities can play that pivotal role. Such ongoing research would help identify gaps in provision as well as opportunities for in house training for instance.

Finance and Funding

This research did not explore the issue of funding in depth as it was not part of the remit, but it requires addressing briefly.

Funding will always remain an issue but it has been the experience that where a demand can be identified, skills providers are willing to engage and develop an appropriate curriculum. The appropriate courses can attract funding through the National Qualifications Framework. It is clear, however, that employers – especially smaller ones – need to receive help in identifying the most appropriate approach to financing skills development. There should also be a recognition that employers may need to contribute where they are receiving the immediate benefit. It is fair to highlight that many employers recognise this but in-work skills provision is not always readily funded by smaller companies.

One example of a major take up of low carbon engagement is that of Manchester City Council who have committed to train all of its seven thousand staff in Carbon Literacy – the first stage for many in low carbon skills training. They are investing their own resources in this, seeing ‘pay-back’ in energy savings and better carbon budgets. It is being delivered through the use of ‘blended’ learning – using online learning reinforced with workshops. Likewise, Unionlearn’s “*Skills for a Green Economy*” may be a useful partnership approach for some employers.



5. Next Steps

From the recommendations there are distinct steps Wigan Council and other authorities should take. Some of these may be in place in some form already, but they would benefit from a renewed focus if that is the case.

This is not intended to be a prescriptive approach but a number of practical suggestions that can be readily implemented in a way that works for Wigan but also in a way that each local authority can mould to their own circumstances.

- Create a data hub able to be shared across authorities and with education/skills providers and businesses
- Identify case study examples to publicise
- Determine what data Councils hold which can be shared with education/skills providers and local businesses
- Establish a system to notify local education/skills providers on emerging regeneration developments (perhaps by including them as regular consultees in the planning process)
- Create a network – either local or region wide – of relevant organisations and people to disseminate information and assist with careers guidance
- Organise a large scale event to publicise low carbon skills and opportunities (similar to GreenBuild or Sustainability Live) and identify/engage iconic figures to promote the agenda. This may necessarily need to be larger than just a single authority area.
- Collate a list of employers willing to engage with schools/education providers
- Determine the local businesses involved in low carbon goods and services
- Create a teacher engagement programme that benefits not only their work but themselves as an added incentive
- Research and collate curricula across the local area
- Establish a method of researching and collating information on the needs of low carbon goods and service providers

Not all of these steps will or should be taken by the “usual suspects” – sustainability officers for instance. They will engage officers from across the authority. In implementing these steps, Wigan will be better placed to ensure it is capitalising on the development of low carbon skills and engaging with relevant sectors. It is hoped that, along with the recommendations set out in other reports, Wigan will then be able to both capitalise on the work it is underway and the opportunities the low carbon economy can bring.



APPENDICES



Appendix A:

Education Provider Interview Questions

1. How does education for the low carbon economy fit in with your college's current preparation of students for leaving education and entering the world of work?

Low carbon skills could be broken down into the following:

- Knowledge and understanding of climate change and carbon emitting actions (carbon literacy)
- Application of actions which are low impact
- Appreciation of STEM subjects where low carbon skills can create new technologies

2. How does your curriculum currently teach low carbon skills:

- In what subject areas are low carbon skills are taught (subject, year, SoW)?
- Would your pupils be aware of low carbon skills and what they are?
- What kind of low carbon skills does your school/college believe are important for the world of work and domestic life?
- How, if at all, does your school/college demonstrate to its pupils low carbon skills?

3. In terms of Career Guidance, how aware do you try to make your pupils of low carbon pathways/opportunities?

- Low carbon vocations (eg wind farm technology, solar energy engineering)
- Low carbon tasks within general employers (environmental concerns within building/food/manufacturing industries),
- Carbon literacy as a generic workplace competence for anyone at any level

4. Does your school/college offer Enterprise days/opportunities?

- If so, do they have a low carbon theme/would it be possible to incorporate a low carbon theme?

5. General comments on awareness of low carbon economy in Wigan (and wider NW) and what that has to offer students, and vice versa.

Employer Interview Questions

1. The organisation and the low carbon economy:

- Which of the 3 categories does the business fall within:
 - Low carbon goods i.e. advanced manufacturing
 - Enablers for the low carbon sector i.e. contractors / crafts / trades
 - Rest of the economy – reducing materials / policies / process efficiency etc
- How many people are employed by the company nationally / internationally (and how many in Wigan / NW)?
- Does your organisation have a low carbon or sustainability strategy (is this a short / medium or long term strategy and how is progress measured)?
- What plans are in place for integrating sustainability data into your organisation's overall reporting framework?
- How is your organisation communicating its low carbon strategy to key stakeholders?
- How fully does your organisation understand its exposure to sustainability risks / risk of a move to a low carbon economy?
- To what extent are you / your investors looking at your response to these challenges?
- How fully does your organisation understand the opportunities presented by a move towards a low carbon economy?

2. Recruitment and skills gaps:

- As a company do you recruit school leavers (aged 16), if so in what areas / roles? If not, what are your reasons?
- Do you struggle to find employees with the required skills or find that there are particular issues with the quality / standard of certain skills?
- Are there qualifications that are desired but not available locally?
- Are there particular requirements relating to the low carbon economy that you ask for?
- Do you take students on work experience placements, if not why not? If so in what role?

Questions repeated for 16 to 19 (FE) and University graduates.

3. Training and support:

- What training is provided for new employees, how is this delivered / funded?
- What CPD opportunities do you provide for all employees?
- What training is available to all employees specifically on sustainability / environmental principles / low carbon issues?

- What resources have been allocated to develop and maintain employer skills in relation to the low carbon economy?

4. Engagement with skills and education providers:

- How does your company engage with schools??
- If not engaged why not and do you consider it a priority to improve links / what would the potential benefits be?

Questions repeated for Further Education providers and Higher Education institutions.

- Do you find that learning / training providers (commercial or public sector) target your company / sector offering training relating to low carbon skills?

5. Context / barriers to growth:

- What do you consider the main threat / barrier to growth is for your company?

Appendix B:

Project Delivery: Education

Three educational institutions were interviewed – the Wigan University Technical College (UTC), Wigan & Leigh College and Winstanley College. In all cases the interviewees were either a senior member of the management team or the sustainability lead. (Repeated efforts were made to arrange an interview with the relevant high school but these invitations were rejected).

A staged methodology was used:

Stage 1: Research:

- The reaction of local educators to the findings of the recent local and regional research, including the core findings from employers interviewed by this project's partners at New Economy;
- Current curriculum content relevant to low carbon skills; and
- Current support for low carbon career pathways amongst educators – referring to specialist low carbon vocations, low carbon tasks within general employers and the priority placed upon Carbon Literacy as a generic workplace competence.

Stage 2: Identify / scope opportunities for:

- Direct links between learning providers and industry including business input into training courses / schools' curricula;
- Development of new programmes / models of employer led skills development in the low carbon sector;
- Linking low carbon skills development priorities to existing skills initiatives in GM; and
- The inclusion of Carbon Literacy in the mainstream [non low carbon] curriculum and its role as a 'foundation' for the above.

Stage 3: Draft proposals to:

- Create practical actions that support career development in the low carbon sector, and support low carbon skills within employment generally;
- Are to transferable / replicable in other North West authority areas;
- Include short, medium and longer-term opportunities; and
- Build on previous low carbon skills research in Greater Manchester and ensure recommendations are complementary to current on-going research and development projects.

The research required:

- One to one meetings with project partners to gain general understanding of issues, building on the recent low carbon skills study – Winstanley 6th Form College, Wigan and Leigh College and the University Technology College.

- Discussion with educators elsewhere in Greater Manchester, and with Manchester Environmental Education Network to assess the potential for their low carbon initiatives to take hold in Wigan.
- Use of existing evidence / surveys, such as the UK Commission for Employment and Skills' National Employer Skills Survey, as well as local research.

Project Delivery: Economy

This research targeted employers within growth sectors within Wigan, including:

- Manufacturing
- Environmental and emerging technologies
- Built environment and retrofitting activities
- Food and drink manufacturing

These sectors were targeted to reflect strengths in the North West economy which include¹³:

- **Advanced manufacturing:** nearly 160,000 people are working in advanced manufacturing in the North West, this includes low carbon energy; the NW's wind power sector employs 10,300 people and delivers £1.3bn in economic output. Significant offshore wind capacity is planned for the Irish Sea which has already led to investments in Cumbria and the Liverpool City Region. Liverpool City Region has been given the status of a Centre for Offshore Renewable Engineering. This will help to that ensure businesses looking to invest in offshore renewables manufacturing receive comprehensive support.
- **Food and drink:** The food & drink sector employs more than 50,000 people in the North West (13% of UK sector workforce). The sector is well-represented in all 5 NW sub-regions but is especially well represented in those localities with good transport links and industrial/warehousing capacity (Trafford, Wigan, Bolton, Carlisle etc). In 2011 the NW exported £1.3bn worth of food and drink products – accounting for 15% of the English total and behind only London and the South East in terms of value.

A staged methodology was used:

Stage 1: Gather Intelligence on:

- The range of basic skills and personal attributes employers expect in all new employees;
- The appetite amongst employers to provide support for new young employees in helping their transition to work;
- Existing routes for employer engagement in education and the identification of current barriers; and
- Existing programmes of employer led skills development in the low carbon sector.

¹³ http://neweconomymanchester.com/stories/1639-regional_research (Growth Sectors and Supply Chains)

Stage 2: Identify / scope opportunities for:

- Direct links between learning providers and industry including business input into training courses / schools' curricula;
- Development of new programmes / models of employer led skills development in the low carbon sector; and
- Linking low carbon skills development priorities to existing skills initiatives in GM.

Stage 3: Development of recommendations that:

- Support career development in the low carbon sector;
- Are to transferable / replicable in other North West authority areas;
- Include short, medium and longer-term opportunities; and
- Build on previous low carbon skills research in Greater Manchester and are complementary to current on-going research and development projects.

The research required:

- Use of existing evidence / surveys, such as the UK Commission for Employment and Skills' National Employer Skills Survey;
- Engagement with partners through one to one meetings, to include: Wigan Council, the Chamber of Commerce, Federation of Small Businesses (FSB) and Envirolink;
- A series of face-to-face informal interviews with a minimum of 10 employers operating within Wigan; and
- Desk-top research and partner engagement to identify relevant existing and planned GM initiatives such as the GM Commitment to Youth Employment, the Employer Ownership of Skills Pilot and Growth Innovation Fund bid and the Chamber's Low Carbon Employer Skills Group.

Helpful definitions

The following definitions were used in the context of conducting interviews:

“Demand for low carbon products and services will rely heavily upon knowledge and understanding of the low carbon agenda. Achieving this shift towards what might be termed a ‘low carbon lifestyle’ relies on embedding knowledge across all employers, occupations, and target markets, and within the 14-19 curriculum.”

Low carbon economy:	An economy where carbon use is limited either by choice or by imposed sanctions, and where greenhouses gases produced during the production, use and disposal of goods or services are reduced.
Low carbon job:	One that contributes to protecting, conserving, maintaining and re-establishing of environmental quality while minimising carbon use. Examples include, protecting biodiversity, increasing efficiency and reducing waste and pollution.
Low carbon provision:	Training courses, including those leading to recognised qualifications, where some or all of the content is connected with the furtherance of knowledge and skills relating to low carbon jobs, as well as improving business performance in line with the principles of a low carbon economy.
Low carbon skill:	A broad range of skills related to the above. Primary low carbon skills might include: <ul style="list-style-type: none">• Design e.g. eco-design, life cycle assessment and costing• Energy management and minimisation• Procurement/sourcing of sustainable materials• Carbon emission reduction

Appendix C:

National Employer Engagement Initiatives

- Inspiring the future

<http://www.inspiringthefuture.org/>

- Make the Grade

<http://aheadpartnership.org.uk/make-the-grade.aspx>

- Business Class

http://www.bitc.org.uk/community/education/business_class/index.html

- TUC Green Workplaces

<http://www.tuc.org.uk/workplace/index.cfm?mins=87&minors=4&majorsubjectID=2>

Example current initiatives in NW

- **Aspirational Futures:** <http://www.aspirationalfutures.co.uk/>
- **The Oldham Looked After Children Pre-Employment:** project offers a cohort of looked after children a 12 month paid work experience placement with training.
- **Learn the Business:** a joint venture between Rochdale Council's Skills Team and Carillion, the prime contractor for the Building Schools for the Future (BSF) programme.
- **Salford Foundation:** Salford Foundation is a social inclusion organisation providing opportunities for young people and adults in Salford and surrounding boroughs to develop social, academic, vocational and personal skills.
- **Working with Young People Award:** Stockport Council's 14-19 Service, along with a small working group of local employers, has developed the award to recognise employers who have helped with the training and education of 14-16 year old young people in Stockport.
- **Bright Future project:** Bright Futures is a work experience programme that aims to provide high quality work experience placements within prestigious organisations to raise the aspiration and achievement of targeted year 10 pupils in Trafford and other GM schools.

About CLASP

CLASP is the local authority and public sector sustainability support service for the North West of England. A not-for-profit service, providing free support for Local Authorities and their partners, on dealing with the challenges of environmental resilience, reducing energy use, and renewable energy planning issues

CLASP funding aim to support innovative projects that increase the pace of delivery, develop leadership and encourage the effective co-operation of Local Authority led sub-regional and local partnerships to tackle carbon emission reduction and resilience to climate change, and which will cascade their learning to other partnerships in the North West.

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