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# Engineering excellence

A charter for UK engineering





Len McCluskey

## Foreword

### **Len McCluskey – Unite General Secretary**

Unite the Union is proud of its members that work in the UK Engineering and Electrical Sectors and we are rightly proud of the contribution they make to the economy and the society as a whole.

Our members work in a wide range of engineering and electrical companies, many in small and medium sized companies, manufacturing a wide range of machinery and products and providing skilled services on which we all rely.

Unite has campaigned for a strong manufacturing sector as part of our alternative economic strategy and engineering needs to form the backbone of a strong UK manufacturing sector.

The lack of a joined up, robust industrial policy and strategy in the UK means that we are still over reliant on the services and financial sector. To develop a strong economy we need a strong engineering base and Unite continues to campaign for just that.

This document is therefore intended to outline the current situation in UK engineering as well as explaining the challenges that the sector currently faces as well as setting out our strategic vision for engineering in the UK.

Unite believes this document makes a sound and coherent argument as to why politicians need to develop a strategic approach to engineering creating a framework that will enable engineering in the UK to flourish.

It needs to be founded on a long-term, rather than short-term approach based on skills, investment and decent, stable employment with the workforce having their voice heard in the workplace.

Unite urges the engineering and electrical industries, companies, politicians, training providers and importantly Unite members and activists to read and debate our strategy document - a document which Unite believes looks to the future of the UK's engineering and electrical industries.

**Len McCluskey**  
General Secretary

## Executive Summary

Any economic recovery in the UK will not succeed without a highly skilled and qualified workforce ready and able to fill skilled jobs in the engineering sector, and without a structured approach being applied, employers will find it difficult to recruit the next generation of engineering workers.

As engineering companies in the UK are projected to require nearly 2 million vacancies being filled by 2020-25 and with the average age for current skilled employees now well into the 50's, action needs to take place now before it becomes too late to redress the balance for the declining engineering skills requirement. The Unite General Engineering Manufacturing and Servicing (GEMS) National Industrial Sector Committee (NISC) considers that there has never been a more important time to encourage young people to choose to study Science, Technology, Engineering and Mathematics (STEM) subjects and to choose careers in engineering.

The GEMS NISC also considers that there needs to be an immediate response from those companies that are starting to feel the strain of the skills shortage, instead of continuing to hope that someone else will supply their most important asset, namely their future skilled workforce!

To get anywhere near fulfilling the predicted skills shortages requires the doubling of the number of engineering apprentices in order to provide enough skilled employees to keep the economy going, as Skilled workers, Technicians and Engineers are not only essential but, also extremely employable as the skills they possess can be transferred across many industries.

This document has been prepared by Unites' GEMS sector following a series of workshops involving Reps and key industry players from across this important, diverse and high value sector of the economy.

With a workforce and membership employed in an array of engineering subsectors including: Electrical; Electronics; Environmental; Manufacturing; Marine; Mechanical; Software; and Utility Engineering, members are involved in activities such as the design, production and maintenance of electrical and associated products / components from semi-conductors and turbines to electronic goods and domestic appliances.

They work for companies such as, BRUSH, Chubb Fire and Security, Cummins, Diodes Zetax, Eaton Electric, Indesit, Otis, Schlumberger, Siemens, Honeywell, Kone and Walter Frank and many small and medium size engineering companies.

The recommendations put forward in the Unite document '*Made in Britain (MIB) - A Unite strategy for manufacturing growth in the UK*', form the core of Unites manufacturing / engineering policy, which aims to address sector challenges around globalisation (e.g. ease of movement of capital / resources around the world, cost cutting and increasing levels of productivity), helping to achieve the shift required to create a rebalanced, globally competitive economy with engineering at its heart, rather than a reliance on the financial and services sectors, whilst also enhancing consumer's purchasing power. Power which has been stripped away by inflation and falling wages since the 2008 crash as characterised by the TUC's 'Britain needs a pay rise' research highlighting the real value of UK pay packets has fallen with average pay falling by 6.3 per cent in real terms over the last five years.<sup>1</sup>

This document, therefore sits alongside Unites' MIB document, and whilst all arguments put forward in MIB, such as Unites position on: Europe; equalities; the low carbon economy, employment rights and collective bargaining, are pertinent to this sector, they are not fully reiterated here, as the two documents complement each other. However, the key following areas are highlighted here in detail:

- **Skills, training, and the maintenance of skilled labour;**
- **Public procurement;**
- **Increasing investment for growth; and**
- **Shortening supply chains – reshoring.**

<sup>1</sup> <http://www.tuc.org.uk/economic-issues/britain-needs-pay-rise/huge-wage-squeeze-means-workers-have-lost-more-%C2%A330-week-2007>

## Introduction

Engineering is essential to our daily lives for indispensables such as: transport; running water; power generation; mobile phones; home entertainment and security, white goods; broadcasting; and broadband internet. It's also a great source of **employment** with engineer's working in a range of different settings including offices, factories, hospitals, laboratories, recording studios, at sea and underground. Additionally, it's crucial to the UK economy as the turnover of UK engineering companies is considerable, at £1.1 trillion for the year ending March 2012: that's 24.5% of the **turnover** of all UK enterprises and over 3.2 times the **size** of the retail sector in terms of turnover and 1.8 times more people than for retail.

Given that we are members of the European Union, whose ongoing membership Unite sees as essential, which is the world's largest economy, there is now great potential for **growth** both here and in the so-called BRICS (Brazil, Russia, India and China) nations which now account for 5.56% of total UK exports compared with 3.34% in 2007, the last full year before the recession.

The sector **employs** 5.4 million across 565,320 engineering companies, with 17.8% working in the South East, 12.8% in London, and the lowest proportion, 2.2%, working in Northern Ireland.

Between 2010 and 2020, engineering enterprises are projected to have 2.74 million **job openings**, of which, 1.86 million will be workers who are likely to need engineering **skills**. As the numbers of 20 to 64-year-olds gradually decline, we will need to expand our outlook in order to ensure that we have the pool of future engineering talent we need.<sup>2</sup>

This **document therefore aims to** influence debate and policy to revitalise UK engineering and its key role in the UK economy as a sector which sustains many highly skilled well paid jobs.

Unite believes that the current government is not initiating any real long term **sustainable growth strategies** or innovation for the sector and that engineering firms still receive little or no support from government, being unable to acquire financial support or **investment funding** to stimulate their enterprises through research and development and investment in new kit.

It is clear that a shift is needed to demonstrate that the sector is key to long-term sustainable growth in the UK. An approach supported by the IMF (International Monetary Fund) who has indicated that the UK needs to facilitate a policy of growth with government investment to drive the economy forward.

Unite supports **foreign direct investment** (FDI) yet believes that the government needs to work harder to generate an increase in the level of FDI and the growth in jobs that this investment brings.

The largest area where the government is failing to invest in the growth of UK engineering businesses is with **SMEs** (small and medium enterprises). Businesses of over 250 employees only account for 41% of employment, yet the government is only giving minimal support to SMEs that employ the other 59%.

Therefore Unite believes a **UK strategic industrial investment bank** with no shareholders needs to be created in order for SMEs and the wider manufacturing sector to truly prosper. Unite considers that government needs to take a similar approach to the financial needs of SMEs as that which happens in Germany where government supports and invests in the **Mittelstand**.

The German economy is often seen as the 'powerhouse' of European activity and the Mittelstand is Germany's version of the UK's SMEs. Unite believes the UK needs to echo the commitment and support of the Mittelstand shown by the German government and instil similar policies to support growth and export opportunities for engineering SMEs here. Unite also believes government needs to increase the available funding for businesses to grow in BRIC (Brazil, Russia, India and China) markets and recognise the need to conduct the research necessary to assess demand.

Additionally, in line with the '**Perkins' Review of Engineering Skills**' we consider that UK Government, engineering employers and professional bodies, along with the education sector, need to step up to ensure the 22 recommendations are adopted / implemented to guarantee the supply of quality engineers grows.<sup>3</sup>

Unite also notes that the "herd mentality" that took valuable investment from the supply chain and jobs to low cost countries is waning, and that the government or any incoming Labour Government, must do all it can to optimise levels of re-shoring, or **shortening supply chains**, as companies realise emerging economies remain challenging places to do business.

**Public procurement** is another vital tool in assuring the stability / longevity of, not only the UK economy, but, also UK engineering, and the retention of workers in the industry. Unite thus supports government procurement policies (for all levels of government) which assist UK engineering companies wherever possible.

We also propose that the government and engineering sector go further in **attacking the vocational stereotyping** occurring in the education system and workplace, trapping many women and communities in poorly paid, low skilled, low valued work. More women need to be attracted into the sector and more done to promote **apprenticeships** to young women.

Finally, for UK engineering, and for that matter the wider economy to grow, requires an integrated approach. One where all players in the engineering community such as unions, employers, the Government and educators **work in partnership** so that issues such as training are dealt with in a positive joined up way, ensuring the outlook for the **next 20 years** is bright and prosperous for all concerned.

<sup>2</sup> <http://www.engineeringuk.com>

<sup>3</sup> Professor John Perkins' Review of Engineering Skills, BIS November 2013

# Skills, training, and the maintenance of skilled labour

The perception of work in manufacturing is often:



However things have changed:



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The recommendations put forward in *Made in Britain (MIB) - A Unite strategy for manufacturing growth in the UK*, remain at the core of Unites manufacturing / engineering skills policy. In addition, as our economy recovers and rebalances, it is right to ask again whether the current arrangements for the provision of engineering skills are fit-for-purpose, as Engineering UK recently indicated that up to 2020, engineering enterprises are projected to have 2.74 million **job vacancies**, of which, 1.86 million will be workers who are likely to need engineering skills. Thus we need to double the number for engineering related apprentices and graduates coming out of colleges and universities, with apprentices earning an average £6.23 per hour whilst training, compared to the average apprenticeship pay of £2.65, and engineering graduates having an average starting salary of £26,019. Additionally, engineering and technology graduates are said to be more likely to go into full-time employment, 61% compared to 53%.<sup>5</sup>

<sup>4</sup> Semta Presentation to Unite GEMS Reps Esher 30/04/2014

<sup>5</sup> EngineeringUK Presentation to Unite GEMS Reps Esher 30/04/2014

## Future Recruitment Demand

(as Estimated by Semta (the Sector Skills Council for engineering industries) from Working Futures 2012 -22, UK Commission for Employment & Skills - UKCES)

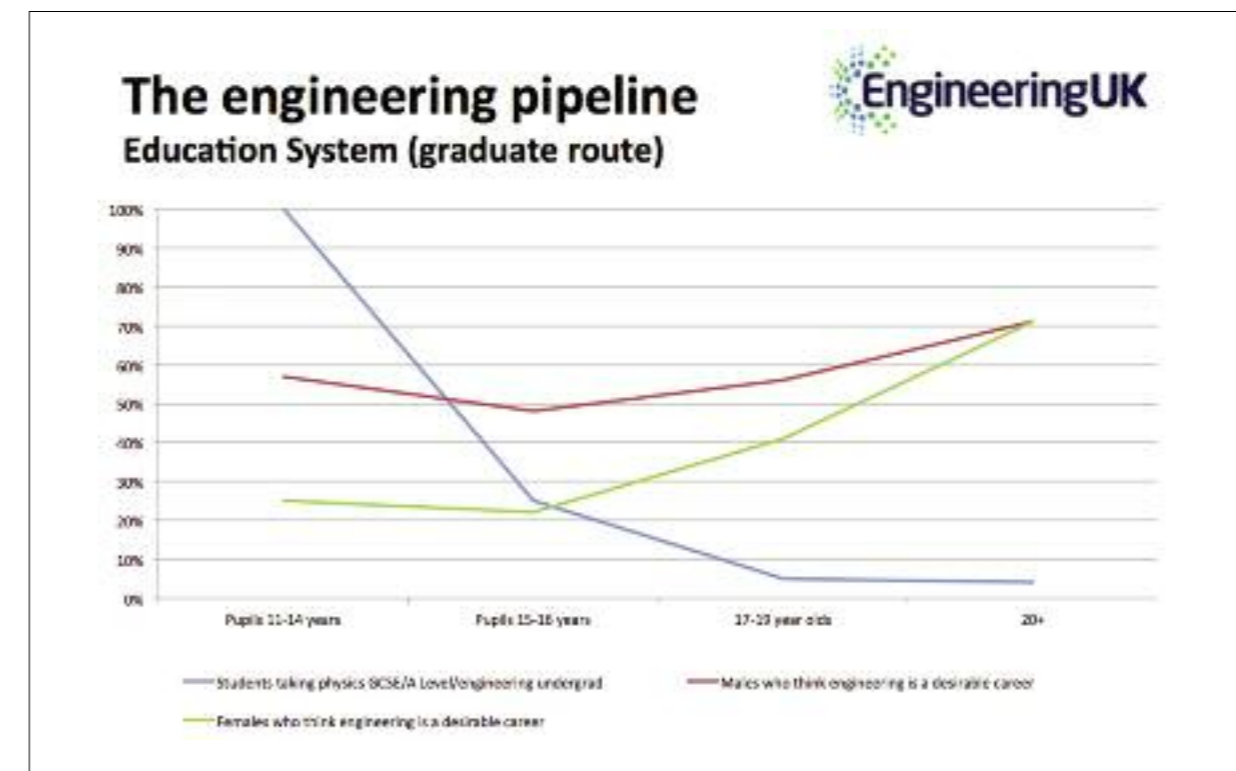
- Estimated net requirement for over 460,000 new recruits into UK manufacturing between 2014 to 2020.
- Half of these new recruits will need to be engineers, scientists and technologists.<sup>6</sup>

## Skills Gaps

(Employer Skills Survey (ESS) 2013, UKCES)

- 18% of UK manufacturing establishments had staff with skills gaps.
- 6% of the workforce had skills gaps.<sup>7</sup>

Unite, in line with the 'Perkins' Review of Engineering Skills'<sup>8</sup>, endorses the widely accepted view that it would benefit the economy to substantially increase the supply of engineers entering the labour market. It would add flexibility and resilience to our economy, enabling more people to take advantage of the new opportunities that technological change presents. However, as the graph below alludes to, there are **some issues to be addressed**, e.g. a sharp decline in students taking physics as they go through high school whilst at the same time low levels of females seeing engineering as a desirable career, **in the engineering pipeline**.



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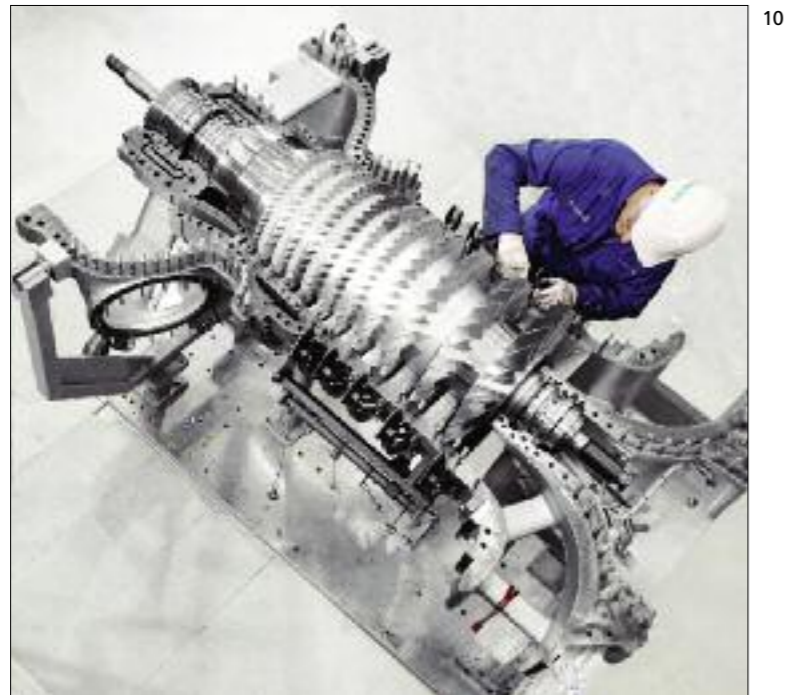
<sup>6</sup> Semta Presentation to Unite GEMS Reps Esher 30/04/2014

<sup>7</sup> Semta Presentation to Unite GEMS Reps Esher 30/04/2014

<sup>8</sup> Professor John Perkins' Review of Engineering Skills, BIS November 2013

<sup>9</sup> EngineeringUK Presentation to Unite GEMS Reps Esher 30/04/2014

Given the rapid technological change we are facing, science, technology, engineering and maths (STEM) skills are especially vital in filling the **skills gap**.



Most workers would agree that there is a constant need for re-training, up-skilling and skills development. This approach not only offers employers a highly skilled workforce with which they can achieve the goals and ambitions of their industry but, also offers individual workers the wider developmental opportunities that education and training can bring.

Unite believes that the future growth and sustainability of the UK's engineering sector is prevalent upon the UK Government, engineering employers and professional bodies, along with the education sector, stepping up to ensure the **22 recommendations in the Perkins Review are adopted / implemented** to ensure the supply of quality engineers grows.

## Education, apprenticeships, skill and training opportunities

There are a number of educational opportunities and pathways to advance engineering skills for people of all ages in the UK, as demonstrated by the 'nurturing future talent' diagram below. Ensuring the supply of engineering skills is a long-term problem that needs to be solved collectively, the **solutions that Unite proposes are long-term**, working across Government and in partnership with employers, trade unions and the engineering community. Unite also welcomes the attention given to these issues by the devolved administrations.



It also means that **employers** must ensure there is good, effective **workplace training** on offer to allow workers to engage in training for their own development. It is vital that employers recognise their role in ensuring there is a highly skilled workforce for the UK engineering sector. Unfortunately evidence has shown that although the UK has relatively high rates of workplace training, the training provided is often short term and generic in nature.

There are two overriding messages from this report. Firstly, that Britain is great at engineering – its skilled engineers are world class and engineering makes a vital and valued contribution to the UK economy, and can help mitigate the grand global challenges of climate change, ageing populations, and supply of food, clean water and energy. Secondly, that the UK at all levels of education does not have either the current capacity or the rate of growth needed to meet the forecast demand for skilled engineers by 2020.

<sup>10</sup> Photo courtesy of Siemens (Lincoln.)

<sup>11</sup> Photo courtesy of Diodes Zetex showing the making of microchips from scratch with the round wafers they are put on being 6 inch in diameter. Microchips are tested and packaged into various electronic devices.

<sup>12</sup> Sema presentation to Unite GEMS Reps Esher 30/04/2014

Engineering skills are needed throughout the economy, in professional services, energy, transport, communications and construction, as well as in manufacturing. People who have studied engineering are also in demand to fill other occupations, as their analytical approach and project management skills are applicable in many environments. Demand for engineering skills, and the scientific and mathematical knowledge that underpins them, exists not only at the visionary end of design and invention, but all the way through the supply chain.

According to the Sector Skills Council Semta and UK Engineering the UK will need:

- 1.86 million people likely to require engineering skills between 2010 and 2020
- At level 4+ approximately 87,000 people per year
- At level 3 approximately 69,000 people per year

Unite welcomes the government campaign 'Your life, Your choice' launched in May 2014, as this **campaign to boost participation in STEM subjects at school**, particularly maths and physics, is needed. Unite believes that our young people today should have the opportunity to progress to their full potential whether that be via a University based academic future or well-funded high value vocational training<sup>13</sup>.

However, there are issues like, "the skills gap in the education system currently with the number of apprentices and GCSE student's not receiving lessons and tutorials from correctly qualified and skilled teachers". There appears to be a "gap in the teaching profession, and how we encourage and reward good teachers for the STEM subjects / skills". Could we look at some mid-term proposals for encouraging industry experts into education and maybe some financial rewards for companies who release this resource"? Perhaps there could be some (government) investment in up skilling to teaching qualifications as an opportunity for redeployment"?<sup>14</sup>

**Women in Engineering:** - Of particular concern to Unite is the drop-off in **young women** going on to take STEM subjects to 'A' level, particularly in physics. Despite recent progress and growing numbers of young people taking GCSE physics and A-level math's, at age 16 there is a steep drop off; in physics the number falls from around 150,000 to 32,000 including just 7,000 girls choosing to study the subject.

Women presently represent only 7% of the engineering workforce in the UK, the lowest percentage in Europe. If this trend continues, the UK will be in a significantly weakened position to find the 87,000 new engineers it is estimated the country will need each year over the next decade (according to Engineering UK 2014, the state of engineering)<sup>15</sup>.

*"The government must go much further in attacking the vocational stereotypes in the education system and the workplace, which traps many women in poorly paid low skilled jobs where there is no union recognition and or right to representation or support. We can encourage more women into manufacturing by offering flexible working and part time work for those with caring responsibilities. Many women have a great deal to offer in the way of skills to help manufacturing grow but are put off coming into the industry because of the raw deal they get"*<sup>16</sup>.

*"I think the main barrier to women entering engineering is awareness. People / women are not aware that pursuing a career in engineering and manufacturing is a possibility. This is not just from women themselves but also the unconscious bias in society (taking gender off applications was a very good example). Again awareness is key to overcoming this.*

<sup>13</sup> <http://www.yourlife.org.uk/>

<sup>14</sup> Quote from Martine following the Unite Reps Engineering Charter Workshop, May 2014

<sup>15</sup> <http://www.theiet.org/policy/media/press-releases/20140623-1.cfm>

<sup>16</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

*A huge pool of talent is not being utilized if women are not available to fill engineering and manufacturing positions. This will also help to cultivate home grown talent as there will simply be more people available.*

*The traditional barriers are not there anymore. I have seen attitudes change over the course of my career. Equality is now the norm in the workplace"*<sup>17</sup>.

Recent government comments outlining that they are "committed to working with business to address issues of **diversity in the STEM workforce** in the interests of equality and to unlock growth", are welcome<sup>18</sup>. As are calls from the Chair of the BIS Select Committee, for government to set private contractor targets to boost the number of female apprentices in sectors traditionally dominated by men.

Emerging labour market trends including, the casualisation of labour and the expansion of agency employment, work against the training culture and undermine equal opportunities, in addition to effectively leaving workers with few enforceable rights whilst shutting the door to training opportunities.

Unite supports initiatives such as Women into Science and Engineering (WISE)<sup>19</sup>, and believes their ongoing funding is essential as they strive to increase women's participation in STEM in the UK. WISEs vision is that at least 30% of the UK STEM workforce will be female by 2020<sup>20</sup>.

Roma Agrawal, an Institution of Engineering and Technology Young Woman Engineer of the Year Award 2012 finalist, and structural engineer for WSP who worked on The Shard, recently said: "I realised very early on in my career that female engineers are in short supply – and that there was a real need to do something about it. Being a finalist in the Young Woman Engineer of the Year Awards in 2012 has led to all kinds of opportunities to promote engineering to girls, from school and university visits to appearing on the BBC Politics programme.... My vision is to see women making up 30 per cent of the engineering workforce over the next 10 years"<sup>21</sup>



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<sup>17</sup> Quote from Emma @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>18</sup> Industrial strategy, Government and industry in partnership – Progress Report, April 2014

<sup>19</sup> <http://www.wisecampaign.org.uk/>

<sup>20</sup> <http://www.wisecampaign.org.uk/about-us/wise-resources/uk-statistics-2012>

<sup>21</sup> <http://www.theiet.org/policy/media/press-releases/20140623-1.cfm>

<sup>22</sup> Photo courtesy of BRUSH

The announcement by David Willetts on 30 September 2013 that £400 million will be invested in higher education science and engineering teaching facilities, including £200 million by the Higher Education Funding Council for England (HEFCE) in 2015-16, is essential for universities and colleges to meet the needs of UK industry and to keep pace internationally, however, there needs to be an ongoing long term commitment.

The Institution of Mechanical Engineers has said<sup>23</sup> *"There is still a wide-spread failure to grasp the scale of the skills gap facing the UK. On the face of it, the latest figures from the Engineering Council look good with the number of professional engineers across the country growing by 17% last year. But with the ageing workforce and so many retiring from engineering, the total number of engineers and technicians in the country increased by only 3 people. We need 100,000 professionals each year to give our country any chance of sustainable growth for the future. The figures are deeply worrying and frankly not far short of pathetic"*.



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There are **two principal pathways into engineering**: the **academic** route through higher education and the **vocational** route through apprenticeships, further education and other work-place based training. There are many leaders of great British manufacturing companies who began as an apprentice and built their careers via the vocational route. This is one of the great strengths of the profession.

*"To get back to being a great engineering country we need the government to help companies to invest in proper meaningful apprenticeships. Apprentices are the future of Engineering in the UK. We need to get school students at an early age (between 14 and 16) visiting engineering companies to show them what engineering is about in the 21st century, to show them that engineering in the UK has a future and to encourage young people to pursue a career in engineering. Technical skills such as woodwork and metalwork should be part of their curriculum. Also I believe that schools should be judged on how many of their pupils get meaningful apprenticeships and not just how many go on to university"*<sup>25</sup>.

<sup>23</sup> IMECHE: More work needed to boost number of UK engineers – 27/2/2014 See <http://www.imeche.org/news/institution/MoreworkneededtoboostnumberofUKengineers>

<sup>24</sup> Photo courtesy of Cummins Generator Technologies

<sup>25</sup> Quote from Nigel @ the Unite Reps Engineering Charter Workshop, May 2014

Unite believes that the best way to ensure that all young people in the UK have the opportunities they deserve is to guarantee there are well funded vocational training programmes which complement the current academic opportunities open to young people who want to go to university. Unite therefore welcomes the recent government announcement that it is to provide £85 million investment in 2014-15 and 2015-16 to extend the additional Apprenticeship Grant for Employers scheme, funding over 100,000 additional incentive payments for small employers to take on young apprentices.<sup>26</sup>

*"Companies should be employing people who don't mind getting their hands dirty"*<sup>27</sup>.

*"At the moment we are experiencing companies only offering apprenticeships to school leavers with very high 'A' level results, very few of these school leavers want to work on the shop floor..... so I believe we should return to the apprentice programme we had in the early 1970s when we had **Craft Apprentices** that generally left school with lower exam grades but wanted to work with their hands and knew from the word go that they would work on the shop floor, then we had the **Technical Apprentice** that left school with higher exam grades (similar grades to what companies are asking for now) and wanted to work in the offices"*<sup>28</sup>.

Some of the most successful economies – including Germany and Switzerland – have focused on providing vocational learning pathways as a way of ensuring there is a highly skilled labour force for those industrial sectors which require them.

**Germany's** strong apprenticeship culture and low youth unemployment rate is as a result of employers forging links with schools and targeting school pupils from an early age. The UK has a long way to go to emulate the success of the German model of apprenticeships but there are companies within the UK who are doing innovative work in attracting, recruiting and retaining apprentices – but they are in the minority and their schemes are oversubscribed tenfold.

*"It's unfair that people taking the academic route get more help via the Universities and Colleges Admissions Service (UCAS). This shows an issue of inequality. All young people should be entitled to the same chance to succeed regardless of their preference. Create a central body for apprenticeships"*<sup>29</sup>. Additionally, *"the union should reintroduce the green card, like an international passport, which proves you have certain skills, and more union Reps should become National Vocational Qualifications (NVQ) assessors"*<sup>30</sup>.

Recently at a presentation to Unite Reps, EngineeringUK proposed the following as a way to **make the supply of future engineers happen**:

- Simplify academic and vocational pathways for young people
  - level the playing field between non-academic routes and
  - provide seamless progression routes for every young person;
- Give young people pursuing vocational courses the same level of support as university applicants
  - UCAS for academic and vocational routes;
- Coordinate the STEM landscape for schools and employers
  - national impact, improve quality, reach and impact; and
- Capacity and capability in the education system.<sup>31</sup>

The **Tomorrow's Engineers** programme, led by EngineeringUK and the Royal Academy of Engineering, is an example of this coordination (point 3 above), and is working with businesses, not for profit organisations and charities, to undertake a number of initiatives, like, industry visits, workshops, Science, Technology, Engineering and Maths (STEM) Ambassador partnerships, and careers resources to help schools to integrate engineering into the current curriculum and plant the seeds required to grow the local engineering talent needed by businesses.<sup>32</sup>

<sup>26</sup> Industrial strategy, Government and industry in partnership – Progress Report, April 2014

<sup>27</sup> Quote from Mick @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>28</sup> Quote from Nigel @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>29</sup> Quote from Emma @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>30</sup> Quote from Dave @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>31</sup> EngineeringUK Presentation to Unite GEMS Reps Esher 30/04/2014

<sup>32</sup> [http://www.tomorrowsengineers.org.uk/About\\_us/](http://www.tomorrowsengineers.org.uk/About_us/)



Whilst it's a modest contribution, Unite is pleased that the government is contributing £250,000 of seed funding to accelerate the nationwide rollout of Tomorrow's Engineers, and is also pleased to hear it is committed to working with business to address issues of diversity in the STEM workforce<sup>33</sup>.



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At the advanced / upper levels of training required, the **Advanced Skills Accreditation Scheme** aims to deliver a distinctive, flexible programme of Master's degree level training in new technologies to UK advanced manufacturing and engineering supply chain employers. The scheme, promoted by Semta, offers flexible access to individual Master's level modules in key technology areas, through a network of top Universities.

**ADVANCED SKILLS ACCREDITATION SCHEME**  
Best Courses from the Best Sources

- Bite-size Master Modules
- Fixed time commitment
- Bespoke solutions to create highly skilled engineers and technical staff
- Low cost solution
- A network of Universities selected by industry
- No academic prerequisites
- Developing your workforce

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MODULES PROJECT

Master's (180 Credits)

35

<sup>33</sup> Industrial strategy, Government and industry in partnership – Progress Report, April 2014

<sup>34</sup> Photo courtesy of BRUSH

<sup>35</sup> Semta presentation to Unite GEMS Reps Esher 30/04/2014

With the engineering sector in the UK suffering from an aging workforce it is vital that there is new blood coming through to ensure the skills and knowledge of the sector remains in the UK. The trade union movement has worked tirelessly to keep engineering in the UK and a skilled workforce is a key element of the sector. It is only through, the identification of what skills are required, growth in proper apprenticeships that are generally 3 years long where skilled workers mentor new entrants, and the proper verification of skills, that the engineering sector has a future in the UK.

*"We seem to have lost the proper apprenticeships in this country and it seems that gaining high quality skills in engineering through proper apprenticeships is looked down upon and you will only get anywhere in life with academic qualifications"<sup>36</sup>.*

Unite believes a skilled apprenticeship should be seen as the equivalent of a degree. Additionally, Unite believes that apprentices could be trained across companies.

*"I would like to see an apprentice & learning network set up across the U.K. This could mean apprentices experiencing working in other companies across the UK. This would certainly help small engineering companies deliver highly skilled workers. It could also be used to improve the skill levels of their current workforce"<sup>37</sup>.*

Unite has proposed a "UCAS" style "clearing house" as a possible way forward for young people considering entering skilled apprenticeships in engineering.

## Public procurement

Given recent developments with the European Parliament, where new legislation was introduced in January 2014 to combat perceptions around the application of EU procurement rules, Unite believes the UK Government must apply the new rules and move away from value-for-money only selection criteria so that local purchases, by all levels of government, become the norm as public procurement spending is a vital tool in maintaining a strong UK engineering sector. It is fundamental to the growth of the UK economy and especially important to UK engineering workers.

In 2012/13, the public sector spent a total of £230 billion on procurement, accounting for 34% of total managed expenditure. Of this, approximately £38 billion is 'capital' and the rest is 'current'. Of this 'current' procurement approximately £40 billion is by central government, £84 billion is by local government, £50 billion is by the NHS, and £13 billion is decentralized administrations<sup>38</sup>.

Unite believes that the current UK procurement policy of awarding contracts based solely on fiscal value needs to be replaced with one that focuses on the additional wider considerations of economic advantage, quality, social aspects, environmental considerations and the promotion of innovation, supporting skilled workers and their skill sets, whilst also investing in the sustainability of the industry and its skill sets.

Additionally, Unite believes the government and any incoming Labour government should recognise the economic opportunities which are available to the UK economy in using the procurement procedure to purchase goods from companies based here. It would also like to see for example, training requirements written into procurement contracts, and where possible a consideration of the investment cycle taken into account to smooth demand for products procured.

<sup>36</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>37</sup> Quote from Nigel @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>38</sup> www.parliament.uk/briefing-papers/SN06029.pdf

The government, with some of its agency investment cycles being five years, "creates a cycle of feast and famine of demand.....which impacts our order books, our employees (increasing numbers of long term agency employment, which it is felt is directly influenced by the investment cycle) and suppliers....and it seems to be accepted as a fact of life and perhaps it shouldn't be"<sup>39</sup>.

In line with the above, a key factor in achieving a positive procurement policy is for government to make sure that UK industries receive a steady flow of procurement contracts as this will: be an inward investment of UK taxes into UK engineering businesses; generate more tax revenue for the treasury and thus more revenue for the public sector; result in firms retaining more employees and investing in skills, training and apprentices; and provide firms with an enhanced opportunity to invest in innovation.

Procurement contracts in recent times have been awarded to companies outside of the UK, based on the companies' tenders being the lowest rate and thus best for taxpayers. This mind-set is, and will, cost the UK more.

*"The current government awards procurement contracts to overseas companies based on the lowest bid thus being the best for the UK taxpayer, well the taxpayer has to pick up the bill for the benefits paid to the people put out of work because of the work going abroad".<sup>40</sup>*

Not procuring from companies based in the UK can have a range of detrimental effects. These include: indigenous workers being made redundant and ending up on benefits, not then being able to reinvest their income for the greater economic good; suppliers business drying up; and local companies experiencing reduced turnover, not being able to invest in, and maintain / upgrade their infrastructure and training regimes such that efficiency levels decline leaving them vulnerable.

Some recent awards of key public procurement contracts have attracted attention, either because of the impact the decision has on local business and employment; like the award of the Thameslink contract to the company Siemens, over the Derby based division of Bombardier, or because of performance concerns<sup>41</sup>. Soon after the announcement, Bombardier advised that half of its workforce (consisted of 1,429 jobs) in Derby would become redundant. Philip Hammond defended the government's choice stating that:

*"The procurement was carried out under the terms of the EU directive, and the Siemens bid offered the best value for money on the criteria for appraisal set out in the original competition that the previous Government launched".<sup>42</sup>*

Nevertheless, Article 26 has recognised directives and guidelines that permit European Union governments the capacity to award procurement contracts based on 'Buying Social'<sup>43</sup>, which allows governments to take into consideration the social impact of their contract. A position enhanced by new legislation introduced into the European Parliament in January 2014 which is designed to combat a number of the perceived imbalances in the application of EU procurement rules. For example, a new principle has been introduced, that of the 'most economically advantageous tender' (MEAT), in the award procedure which will enable authorities to put more emphasis on quality, environmental considerations, social aspects (including skills) or innovation while still taking into account the price and life-cycle costs of that being procured.<sup>44</sup>



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A Unite survey found seventy two percent of police vehicles are built outside the UK. This would never be permitted in France or Germany as the French buy French and the Germans buy German built products

Unite considers that a progressive procurement policy, based around new EU legislation / procurement rules, offers the UK government the opportunity for long term investment in innovation, research and development, and skills in the engineering sector. Such a commitment is key to ensuring public procurement works in a beneficial way for UK engineering companies, especially small and medium sized enterprises.

Public procurement is an essential instrument in guaranteeing the stability and endurance of, not only the UK economy but, also the UK engineering sector and its workers. Unite believes support for UK manufacturing and the growth of the UK economy should be the top priority for government.

<sup>39</sup> Quote from Martine following the Unite Reps Engineering Charter Workshop, May 2014

<sup>40</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>41</sup> [www.parliament.uk/briefing-papers/SN06029.pdf](http://www.parliament.uk/briefing-papers/SN06029.pdf)

<sup>42</sup> Quoted in: Lucinda Maer, House of Commons Library Note on Public Procurement, 20th January 2012, p6, [online], available at <http://www.parliament.uk/briefing-papers/SN06029>

<sup>43</sup> See TUC website available at <http://www.tuc.org.uk/>

<sup>44</sup> Public sector procurement in the EU by M. McKervey of Nabarro, January 2014

<sup>45</sup> Photo courtesy of Siemens (Lincoln.)

## Increasing investment for growth

The bedrock of the UK economy is SMEs (small and medium enterprises). A vibrant growing SME sector is one of the prerequisites for future growth in the UK economy. The majority of new jobs created in the UK are created by small businesses – existing small businesses contribute 34% of new jobs created, whilst new business start-ups contribute 33%.<sup>46</sup>

*“What we see is a complete lack of investment into the SME’s and a reluctance to grow the smaller manufacturing firms which hold the key to real strong sustainable growth in the economy”<sup>47</sup>.*

Addressing the financing needs of this sector is a vital component of economic growth. In addition, delivering infrastructure investment requires a properly functioning supply chain, predominately comprising SMEs.

However, there are a number of market failures<sup>48</sup> affecting the supply of finance to SMEs. These market failures relate to the provision of both debt and equity. There is also a demand-side issue relating to the awareness of businesses as to the potential benefits of raising finance or the chance of doing so successfully. That lack of sophistication may be resulting in businesses failing to exploit their growth potential.

The non-availability of finance to smaller businesses is long-standing. It was identified in 1931 by the Macmillan Report<sup>49</sup> (such lack of finance being known as the ‘Macmillan Gap’). There is also a relative lack of competition in mainstream credit providers. The Independent Commission on Banking identified that the largest four banks account for 85% of SME current accounts.<sup>50</sup>

In addition there is a worrying trend towards short termism in the bank lending market. While short termism may manifest itself in bank overdraft facilities repayable on demand (reducing the ability for businesses to plan and invest over a longer period with greater certainty and predictability of finance), a shift to term loans may result in more cautious lending decisions upfront, as loans are not repayable on demand, plus an increased requirement for collateral.

These long-standing problems have been exacerbated by the financial crisis and the historically slow recovery from recession. Access to credit declined markedly for SMEs in the UK during the financial crisis.

*“Privately owned small and medium sized manufacturing firms complain that they receive little or no help from government and they are unable to acquire financial support or investment to grow their business through research and development or in new kit, this needs to change if we are going to create a robust manufacturing sector and create long term sustainable growth in the UK”<sup>51</sup>.*

*“We need our Government to also offer financial help to companies in the UK. I believe that companies of all sizes need to have access to investment funding, low interest rates and long term loans”<sup>52</sup>.*

There are many international examples of government-backed intervention in this area. In fact, the UK is currently unique among the members of the G7 in not having a dedicated institution dealing with SME financing issues and initiatives. The bodies responsible in the other G7 countries are:

- Canada - Business Development Bank of Canada
- France - Caisse des Dépôts et Consignations (CDC)
- Germany - Kreditanstalt für Wiederaufbau (KfW)
- Italy - Cassa di Risparmio di Padova e Rovigo (CR)
- Japan - Japan Finance Corporation Small and Medium Enterprise Unit
- USA - Small Business Administration (SBA)

<sup>46</sup> Job Creation and Destruction in the UK: 1998-2010 (Anaydike-Danes, Bonner and Hart – Aston Business School, October (2011).

<sup>47</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>48</sup> Defined as “an imperfection in the market mechanism that prevents the achievement of economic efficiency” HM Treasury Green Book: Appraisal and Evaluation in Central Government (2003) p103; BIS Economics Paper No 16: SME Access to External Finance (January 2012) Section 2.

<sup>49</sup> Report of the Committee on Finance and Industry, Cmd 3897, July 1931.

<sup>50</sup> Independent Commission on Banking, Final Report Recommendations (September 2011) p 168.

<sup>51</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

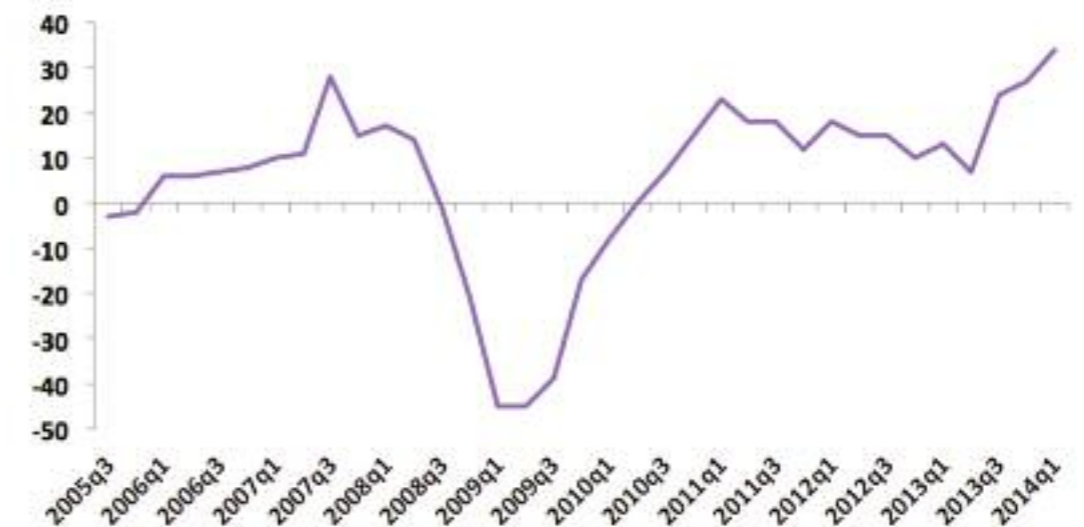
<sup>52</sup> Quote from Nigel @ the Unite Reps Engineering Charter Workshop, May 2014

Developing economies are also using such structures. The Brazilian Development Bank (BNDES) has engaged in a process which it calls ‘the democratisation of credit’.<sup>53</sup> This has focused on investment in machinery and equipment and in micro, small and medium sized companies (MSMEs). Disbursements to MSMEs and individuals were £6.9bn in 2008, £7.63bn in 2009, £14.58bn in 2010, an increase between 2009 and 2010 of 90%.<sup>54</sup>

Therefore, whilst Unite notes the government’s current efforts to create the British Business Bank working through the market<sup>55</sup>, it believes a **UK strategic industrial investment bank** with no shareholders needs to be created in order for SMEs and the wider manufacturing sector to truly prosper. Unite considers that government needs to take a similar approach to the financial needs of SMEs as that which happens in Germany where government supports and invests in the Mittelstand so that investment intentions, outlined the graph below, can be converted into actual investment. The German economy is often seen as the ‘powerhouse’ of European activity and the Mittelstand is Germany’s version of the UK’s SMEs. Unite believes that the UK needs to echo the commitment and support of the Mittelstand shown by the German government and instil similar policies to support the economic growth and export opportunities for engineering SMEs here. Unite also believes government needs to increase the available funding for businesses to grow in BRIC markets and recognises the need to conduct the proper research necessary in order to assess demand.

### Investment intentions at record level <sup>56</sup>

% balance of change in investment plans



EEF The manufacturers' organisation

Source: EEF Business Trends Survey

BDO

<sup>53</sup> BNDES Annual Report 2010 p 21.

<sup>54</sup> BNDES Annual Report 2010 p 24.

<sup>55</sup> Industrial strategy, Government and industry in partnership – Progress Report, April 2014

<sup>56</sup> EEF presentation to Unite GEMS Reps Esher 30/04/2014

## Government investment

For any economy to remain globally competitive there are certain enabling conditions which governments must ensure function properly and help to promote business and growth. There are two perspectives from which to view the achievement of growth. The first is best driven by local leaders – public and private – working in partnership together to effect the long term changes their communities need. The second starts with the vital responsibility of central government in creating the conditions for economic success.

Central government has a fundamental responsibility to create the national economic capacity upon which local growth relies: the national infrastructure – **transport, energy** and those rare but vital nationally-transformative **regeneration projects** – which enable the country to function effectively. This includes **logistics infrastructure projects**, with world best road, rail, port and airport infrastructure, including intermodals, as well as our energy networks. National and regional interconnectivity is critical to our future prosperity. Any UK Government must have a clear long term interventionist plan that sets out how our future **large scale infrastructure investments** will meet the needs of business to deliver growth.

The UK must develop, through government initiatives and regulated competition, its infrastructure so-as to optimise, for example: **energy production and delivery** to reduce the cost of energy.

*“We need lower Energy prices to be offered to all companies as the cost of Energy in the U.K. is the highest in Europe”<sup>57</sup>.*

*“Energy costs are too high. Engineering enterprises need support from the government on this front, especially the smaller ones”<sup>58</sup>.*

The Treasury’s Infrastructure Plans<sup>59</sup> identify many nationally significant projects that require central coordination. It backs these up with spending commitments and government support. These projects are vital. We have seen this in successes of the past – the Channel Tunnel and High Speed 1 (HS1), the Dartford crossings and the London Docklands Development Corporation – that have unlocked growth. Indeed, we need look no further than the extraordinary events in London 2012 for evidence of the power of large scale investments.



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With the memories of the Olympics and Paralympics still fresh in our minds, responsibility for large scale infrastructure projects must remain at a national level as the implications of such schemes – and the costs of their implementation – go beyond any one local area. There are a number of tough decisions facing government on such projects that could unlock multi billion pound investments. These projects are crucial to our future competitiveness – the market urgently needs certainty in order to bring this private investment on stream.

<sup>57</sup> Quote from Nigel @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>58</sup> Quote from Howard @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>59</sup> HM Treasury, National Infrastructure plan, 2011, [http://www.hm-treasury.gov.uk/national\\_infrastructure\\_plan2011.htm](http://www.hm-treasury.gov.uk/national_infrastructure_plan2011.htm)

<sup>60</sup> Photo courtesy of Piodes Zetex

## Foreign direct investment (FDI)

The immediate prospects for global FDI remain very uncertain. For example, at the end of October 2012 the United Nations Conference on Trade and Development (UNCTAD)<sup>61</sup> further reduced its forecast for total FDI flows in 2012 to below \$1.6 trillion, following a substantial rise in both 2010 and 2011<sup>62</sup>. Despite this (at best) levelling off of growth in FDI flows, UNCTAD still expects to see global FDI flows growing again in 2013-15, and approaching \$2 trillion by the middle of the decade<sup>63</sup>.

UNCTAD’s relative optimism about medium-term trends arises in part from the results of their World Investment Prospects Survey which polls executives of multinational enterprises on a regular basis, and which points to short-term uncertainty but more optimism about the medium term. Other key points derived from UNCTAD’s most recent assessment<sup>64</sup> includes the following:

Multinationals are now sitting on large cash reserves which may fuel a surge in FDI when investment opportunities appear more favourable;

FDI into Latin America has been particularly volatile recently, but is expected to exhibit long-term growth. There is evidence of increased use of industrial policies designed to boost domestic manufacturing and build domestic productive capacity. While such measures may make exporting more difficult to Latin American countries, there may be more ‘tariff jumping’ FDI, especially in the automobile, computer and agricultural machinery sectors;



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<sup>61</sup> United Nations Conference on Trade and Development

<sup>62</sup> UNCTAD Global Investment Trends Monitor No. 10 (23 October 2012)

<sup>63</sup> UNCTAD World Investment Report 2012

<sup>64</sup> Ibid

<sup>65</sup> Photo courtesy of BRUSH

While China continues to be the preferred destination within East Asia for FDI, rising wages and production costs in China has led to the relative desirability of other South-East Asian economies to rise markedly relative to China, especially Thailand and Indonesia.

FDI flows into transition economies are expected to continue to increase, boosted by increasingly investor-friendly environments and the Russian Federation's accession to the World Trade Organization (WTO).

By contrast, prospects for FDI into Europe, and especially the Eurozone, are seen as being hampered in the short to medium-term by economic fragility and doubts about the stability of the Euro.

The UK continues to attract high quality investment from around the globe both from our established economic partners in Europe, North America and Japan but also from key growing markets such as India and China. Investments are also made across a broad range of innovative and economically important sectors. The combination of these factors means the UK continues to be in a strong international position for attracting foreign investment. Inward investment into the UK economy created or secured more than 112,000 jobs in 2011 to 2012 according to UK Trade & Investment's (UKTI) inward investment report for 2012 to 2013.

The report shows that in the last financial year:

- the UK saw 1,559 investment projects secured – 11% more projects than the number recorded during the previous year
- these projects are estimated to have brought with them 170,000 jobs – 51% higher than in the previous year. Of these, nearly 60,000 were new jobs and 110,000 existing jobs were safeguarded

Patterns of global trade and investment will determine the relative importance of the countries to which the UK exports and from which it imports; the types of firms and sectors which will be involved in its trade; the future structure and performance of manufacturing within the overall Balance of Payments; the place of the UK in the global pattern of foreign direct investment (FDI) flows; and the conduct of R&D and investment in innovation.

**The emergence of the Brazilian, Russian, Indian and Chinese (BRIC) economies and the 'Next-11' (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea, and Vietnam):** BRIC economies are likely to become larger than the US by 2015 and the G7 by 2032. In addition, the 'N-11' economies<sup>66</sup> are likely to become larger than the US and almost twice the size of the Euro area by 2050<sup>67</sup>. By value, UK is low down the global list of exporters to China (24th) and India (21st). The UK is the world's 10th largest goods exporter, with a 2.9% share of global manufacturing exports in 2012. However its share of imports to countries forecast to be in the top 30 economies by 2050, is generally disappointing and below this level<sup>68</sup>. The UK's relatively poor current placement in these markets will make it harder for it to benefit from their future growth.

Risks to Foreign Direct Investment into Europe may affect the UK, as the UK has been a major recipient of inward FDI for manufacturing and remains in a good position to attract an above-average share of FDI coming into Europe. However, FDI flows into Europe, as a proportion of total available FDI, are likely to reduce due to competition from BRIC and other emerging economies<sup>69</sup>.

**Keeping the UK attractive to manufacturing FDI:** Three attributes that make the UK attractive to overseas investors include quality of life, culture and language; the stable political environment; and technology and infrastructure<sup>70</sup>. Priorities for attracting future FDI for manufacturing include the provision of high quality e-infrastructure and physical infrastructure (roads, in particular<sup>71</sup>).

*"The right kind of foreign investment can be a good thing..... and we have to make the UK a place where foreign business wants to invest because we have the skills and technology which will enable their business to grow in the UK"*<sup>72</sup>.

<sup>66</sup> Bangladesh, Egypt, Indonesia, Iran, Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey and Vietnam.

<sup>67</sup> Goldman Sachs (2012) A Guide to Growth Markets. Office of the Chairman, Goldman Sachs Asset Management, London.

<sup>68</sup> BIS (2012) BIS Economics Paper No 17: UK trade performance across markets and sector. London

<sup>69</sup> Driffield, N.(2013) How attractive is the UK for future foreign direct investment? Foresight, Government Office for Science, London.

<sup>70</sup> Ernst and Young (2012) 2012 UK Attractiveness Survey.

<sup>71</sup> EEF (2012) Transport for Growth

<sup>72</sup> Quote from Bob @ the Unite Repts Engineering Charter Workshop, May 2014

## Shortening supply chains - reshoring

Unite believes 'The Herd Mind-set' has taken valuable engineering investment and jobs to 'low cost countries', in the process extending supply chains with the complexities that brings. It, however, believes that companies will only reshore if suppliers are here.

*"One of the real challenges to UK manufacturing workers is the outsourcing of jobs to low cost countries. This work is often, parts for the main product, and is often false economy as many companies just look at the labour costs rather than the overall cost. For example, if you are building a product in the UK but you rely on parts coming in from around the world it adds freight costs etc. but the biggest cost is lost orders if you have to tell a customer that they have to wait six weeks for a part to come from overseas before they can have the complete product so they tend to go elsewhere. It is much more efficient to have all the parts for the product manufactured in the same vicinity so as the order can be completed quickly and to the customers' requirements. We have to try and convince the big corporations that it's best to have the supply chain for UK product, manufactured in the UK"*<sup>73</sup>.

A large challenge facing UK engineering workers, is the outsourcing of jobs to low pay economies. Conventionally, firms have been inclined to offshore / outsource low value, high volume tasks such as fabrication and assembly. However, some companies have also offshored and outsourced high value functions like research and development. The degree to which low and high value added activities are offshored into the future is uncertain as emerging economies continue to be challenging places to operate. However, there is emerging evidence that UK companies are beginning to repatriate / reshore such work.

*"We need to grow the supply chain across engineering in the UK. Companies should be encouraged to work together. We need companies to source raw materials from U.K. suppliers where possible and any components that need to be brought in should again, where possible, be sourced from U.K. companies and grants should be made available to companies that purchase new machinery / equipment from U.K. companies. Also we need the government to offer financial help to encourage companies to relocate back in the U.K."*<sup>74</sup>.

A 2009 survey by EEF / BDO LLP found that 14% of UK companies had brought production back closer to home from abroad in the previous two years as a result of, cost savings not being as great as anticipated, the quality of goods made were not of a necessary high standard and products were getting to market too slowly.<sup>75</sup>

Unite considers government has a fundamental role to play in making reshoring happen, with investment and backing for companies who are looking to undertake the process. As outlined, there are clear positives in the reshoring, with the need to grow the supply chain in the UK, as opposed to lengthening it by going abroad, an obvious way of achieving it.

The Manufacturing Advisory Service's (MAS) barometer (November 2013) indicates that more firms are returning manufacturing operations to the UK. Head of MAS, Steven Barr said: "There is certainly a growing desire from our companies to take production home, with 15% of firms reporting that they have or are in the process of bringing production back. This is compared to just 4% that have offshored in the last year."<sup>76</sup>

The occurrence is not limited to the UK. BBC correspondent Mark Mardell reported on Radio 4 (March 2013) how US manufacturing giant General Electric had repatriated jobs from China to its vast plant in Louisville, Kentucky.<sup>77</sup>

<sup>73</sup> Quote from Bob @ the Unite Repts Engineering Charter Workshop, May 2014

<sup>74</sup> Quote from Nigel @ the Unite Repts Engineering Charter Workshop, May 2014

<sup>75</sup> EEF/BDO LLP (June 2009) Manufacturing Advantage – Challenges in a global marketplace

<sup>76</sup> <http://processengineering.theengineer.co.uk/home/plant-and-equipment/uk-manufacturing-firms-reshoring/1017550.article>

<sup>77</sup> <http://www.theweek.co.uk/business/51967/re-shoring-companies-bring-production-home-china>

Lee Hopley, Chief Economist for the EEF, asserts 'off-shoring' is now "yesterday's model" with EEF figures demonstrating a rise from 2009, where around 14% of manufacturers had brought some of their capacity back to the UK, to today where the figure sits at around 40%<sup>78</sup>. However, a recent study<sup>79</sup> indicates it is less pronounced in the UK than numerous have claimed as there are limits as to how far reshoring may go, chiefly in relation to the accessibility of skills and finance in the supply chain. This study indicates that where it is occurring in the UK, it is being driven by a blend of a more competitive exchange rate (despite a recent appreciation), increased costs of transport, quality issues, increasing wages in key areas of China and central and eastern Europe, and more awareness of the importance of supply chain strength.

Finally, Unite believes that the shortening of supply chains via reshoring should produce, for many but not all, the additional benefit of reduced carbon emissions as products aren't produced abroad then shipped back to the UK for sale both here and overseas.

## Employment rights & collective bargaining

Employment rights, that see the maintenance of a skilled workforce via sustainable, permanent jobs, are essential, as is the need to see an end to short termism with all its related insecurities, leading inescapably to a race to the bottom.

A growing ageing workforce where employment rights, like the right to accumulate a decent pension, are being stripped away will inevitably result in the rise of **older working poor**. People, who have little prospects of ever retiring, potentially made worse by a lack of the physical attributes often required to work in engineering. The growth of an ageing workforce is primarily driven by short termism, where practices such as **zero hour's contracts** and the removal of **decent pension schemes** are becoming more and more prevalent, and thus require a fight back from unions and workers to protect workers' rights from attacks by the present government.

The presence of zero hours contracts in industry are denied and brushed under the carpet by employers, but Unite believes they are a very real, growing and menacing aspect of employees' working lives. They are a one-way street to unfairness, where employers bear no risk, avoiding sickness and holiday pay and overtime.

One in five workers in this country has no idea what days they will work or even, if they will work from week to week. This causes problems renting a home or getting a mobile phone. A confident, thriving engineering sector cannot be built on the back of such precarious, insecure employment.

*"Zero hours contracts in industry and a growing casualised workforce through long term agency workers with little prospect of getting full time permanent employment and suffering long term uncertainty often with inferior pay and conditions does nothing to help manufacturing grow"*<sup>80</sup>.

Stronger rights to **information and consultation (I&C)** at UK workplace level and stronger **European Works Councils (EWCs)** for multinationals are important in ensuring better employment rights.

- Information and consultation arrangements

The Information and Consultation of Employees Regulations (often abbreviated to the ICE Regs) were introduced on 6 April 2005 and apply to businesses with 50 or more employees. The regulations give employees the right, subject to certain conditions, to request that their employer sets up or changes arrangements to inform and consult them about issues in the organisation.

Information and consultation are the basic building blocks of every effective organisation. These concepts are as crucial to the relationship between the individual workers and their line manager as they are to the parties on an employee council. Whatever the size or type of your organisation people need to talk to each other. They need to:

- exchange views and ideas
- issue and receive instructions
- discuss problems
- consider developments

The regulations reflect this by establishing what should be done about talking and listening to employees.<sup>81</sup>

- European Works Councils

European Works Councils (EWCs) are standing bodies providing for the information and consultation of employees in Community-scale undertakings and Community-scale groups of undertakings as required by the 1994 European Works Council Directive (Directive94/45/EC, now updated by the recast Directive2009/38/EC). EWCs are highly significant in terms of European industrial relations since they represent the first genuinely European institution of interest representation at enterprise level. They reflect a growing recognition of the need to respond to the 'Europeanisation' of business emerging from the Single European Market by supplementing existing national channels of information and consultation, a goal which was expressed in the Social Charter of 1989 and the accompanying Social Action Programme.<sup>82</sup>

Given the above, it is important to note that Unites GEMS sector members, at a workshop on the 25th of February 2014, suggested:

- *Unite members see the erosion of pensions is a ticking time bomb; and that*
- *Collective bargaining maintains stability, otherwise we could all be on, for example, say zero hour's contracts.*



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<sup>78</sup> <http://www.eef.org.uk/blog/post/Reshoring-is-it-real.aspx>

<sup>79</sup> Reshoring and its Limits: UK Manufacturing and Automotive Experience. Draft Paper by David Bailey (Aston Business School) and Lisa De Propriis (Birmingham Business School)

<sup>80</sup> Quote from Bob @ the Unite Reps Engineering Charter Workshop, May 2014

<sup>81</sup> <http://www.acas.org.uk/index.aspx?articleid=1598>

<sup>82</sup> <http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/europeanworkscouncils.htm>

<sup>83</sup> Photo courtesy of BRUSH

## Low carbon economy

Following the 2010 election the government introduced a carbon floor price for the power generation sector which has the potential to impact greatly on the viability of some of the UK's most strategically important industries. This floor price, intended as a means of boosting cash flow for energy companies into low carbon infrastructure, came into effect from April 1st 2013 and is additional to the existing European Union Emissions Trading Scheme (ETS).

Experts at Thomson Reuters Company 'Point Carbon' have assessed the cost to UK business of the carbon floor price to be an additional £9.3 billion burden on UK manufacturing by the year 2020<sup>84</sup>

While the governments' floor price for EU permits started fairly low, rising to a proposed £30 per tonne by 2020, the carbon price could be pushed to £48 per tonne by 2020 due to tax rates, while the rest of the EU ETS would see a price of £32. The UK is therefore effectively taking unilateral action to embed the price of carbon, putting its actions far ahead of its EU counterparts and other international economies. This new tax on carbon adds to the already damaging effects that the high cost of energy and the carbon reduction commitment (CRC) place on industry in the UK with warnings from companies here that their plants could become uneconomic.

In addition to the carbon floor price, "DECC and BIS (heat strategy 28 March 2013) are work together to identify how to further support development of industrial Carbon Capture and Storage (CCS) as part of the Government's wider efforts on CCS. This work will involve:

- a techno-economic study to help better understand the necessary technologies and costs; and
- exploring options for further supporting industrial CCS innovation, which could include feasibility studies, additional research and development, or pilot demonstrations."<sup>85</sup>

The low carbon market will be worth around \$20 trillion by 2020. Over the next two decades the world economy is predicted to double. This represents a huge opportunity for UK engineering with the sector needing to establish its position in the market.

Given the above, it is important to note that Unites GEMS sector members, at a workshop on the 25th of February 2014, suggested:

- There should be a tax on travel miles for goods produced offshore;
- Energy and waste management costs are big issues within the engineering sector; and
- We should perhaps tax goods on energy inefficiency, i.e. more energy inefficient goods would have a higher initial cost as a result of this tax.



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## Continued EU membership

European Union (EU) trade contributes directly to over 3 million jobs in the UK and remains one of the key trading partners for UK business. Trade in goods between EU Member States (intra-EU trade) was valued — in terms of dispatches — at EUR 2 840 337 million in 2012. This was 1.7 times as high as the level recorded for exports from the EU-28 to non-member countries (extra-EU trade)<sup>88</sup>.

Discussions about on-going UK membership of the EU continues to create uncertainty for Unites members, UK manufacturers and exporters. Inward investment by advanced manufacturing companies in the EU, USA and elsewhere is being brought into question. Given the significant value of exported manufactured goods from the UK into the EU, investment decisions and decisions by companies in regard to locating their businesses in the UK to take advantage of EU membership, Unites believes the UK must remain a member of the EU and be at the heart of Europe. Any other policy would provide instability and a distraction from the real issue of getting UK plc on track as a world class manufacturer. Unites believes the real underlying agenda for this governments anti EU rhetoric and policies is to attack and reduce even further current employment rights and to lower standards in the workplace.

Unites is clear that we need to be members of the EU as many basic employment rights, including holiday pay, parental leave, equal treatment for part time and agency workers and key health and safety provisions have been initiated in the European Parliament to protect workers across all the member states. Successive governments have tried to erode the employment rights of UK workers and it is only through the membership of the EU that our employment rights in the UK are protected.

*"Membership of the EU is vital for manufacturing as it accounts for millions of jobs in the UK and is still one of our major trading partners. It also gives us many of the employment rights we have left in the UK and the importance of employment rights should never be underestimated. All the talk of leaving the EU does nothing to help manufacturing or the UK economy, in fact many other trading partner are getting nervous about talk of leaving the EU..... It is distracting from getting the UK back on track, so we need to get the message out about how important remaining in the EU is to this country and promote the positives that EU membership has for the UK and UK manufacturing"<sup>85</sup>.*



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<sup>84</sup> Engineering & Technology magazine April 14th 2011

<sup>85</sup> Industrial CCS Techno-economic study workshop 9 July 2013

<sup>86</sup> Photo courtesy of BRUSH

<sup>87</sup> Photo courtesy of Cummins Generator Technologies

<sup>88</sup> [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/International\\_trade\\_in\\_goods](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_trade_in_goods)

<sup>89</sup> Photo courtesy of BRUSH

<sup>90</sup> Photo courtesy of Diodes Zetex

## Conclusion

For UK engineering, and for that matter the wider UK economy to grow, requires an integrated approach. One where all the players in the engineering community such as; unions, employers, industry groups, the government and educators work in partnership so that industry challenges like: addressing the long-term supply of skilled engineers - as examined by Professor Perkins; how training is funded; or, for instance, the immediate shortage of Electricians and how this can be swiftly addressed, are dealt with in a positive joined up way.

The links between engineering and education need to be strengthened to ensure that students see engineering as an attractive and worthwhile career path at an age when key decisions about subjects and courses are being considered. As STEM subjects are seen as crucial elements within engineering career paths early help and assistance is crucial in ensuring tomorrows engineering future is secured.

Challenges, such as freeing up credit for SME by say encouraging challenger banks to prosper, or encouraging educational and employer flexibility around the recognition of non-specific physics and maths subjects for young women so-as they're not excluded from later education and employment opportunities in the sector, cannot be progressed by individuals, companies, institutions or the Government working alone.

Working in partnership, embracing the elements of this charter which provide a strategic focus for the UK's Engineering Sector will help in ensuring the outlook for the next 20 years is a bright and prosperous one for all concerned, with Unites' two day seminar at Esher in mid-2014, involving participation from Semta, the EEF and Engineering UK, showing the way in encouraging such conglomerated joined up thinking. Thinking, that should ensure the workforce is listen to, its experience is built upon to guarantee skills are maintained and expanded in line with new technologies, and most of all a demonstration of commitment from all participants in an integrated approach to ensure ongoing growth.



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<sup>91</sup> Photo courtesy of BRUSH

## Recommendations

With a workforce and membership working in the array of engineering subsectors outlined, **we recommend:**

1. The Engineering Industries campaign and lobby for increasing targeted/ strategic **Government and Foreign investment** in UK engineering to seed growth so as to protect and expand the UK's engineering jobs base.
2. To campaign for a **shortening of the supply chain** in order to encourage the reshoring of work and jobs back to the UK.
3. For government and any incoming Labour government to support UK engineering via the optimal use of public funds through their **procurement** processes, aspiring to buy engineered goods and engineering services from UK based companies.
4. The Industries campaign for our continued membership of the **European Union** to ensure ongoing sustainable investment in the sector.
5. To fight for wide-ranging **skills and training** programmes for the sector, along the lines of those put forward in the 'Perkins Review of Engineering Skills', in order to address current and future skills shortages, in addition to programmes which encourage skilled labour to remain in the sector through optimal employment rights and the provision of optimum collective bargaining structures.
6. The industry must do much more on the **equality agenda**, to go further in attacking the vocational stereotyping that occurs in the education system and the workplace and support initiatives to bring more women into skilled engineering jobs.
7. To lobby government to ensure **infrastructure** is maintained and upgraded such that, for example, logistical operations run at optimal efficiencies, and energy can be sourced at rates at or below our key competitors.
8. The establishment of a **Strategic Investment Bank** or a Bank for Industry, that works, where engineering companies of all sizes have access to investment funding at affordable rates.
9. To vigorously encourage the government and engineering community to work in **partnership**. Such an integrated approach should not only help to see the UK engineering sector grow but, through the combined efforts of unions, employers, the government and educators working in partnership, issues such as training can be dealt with in a positive joined up way, ensuring the outlook for the next 20 years is bright and prosperous for all concerned.

Unite would like to thank members of our General Engineering Manufacturing and Servicing National Industrial Sector Committee, Unite Union Reps, National Officers, the EEF, Engineering UK, Semta, and the Unite Equalities and Research Departments.