

PREVENTING A MISSED OPPORTUNITY: SKILLS FOR THE ENERGY TRANSITION

Kickstart energy transition projects now to save jobs and hit net zero targets say ECITB Board members Lynda Armstrong, Jane Cooper, Daniel Gear and Professor Joe Howe.

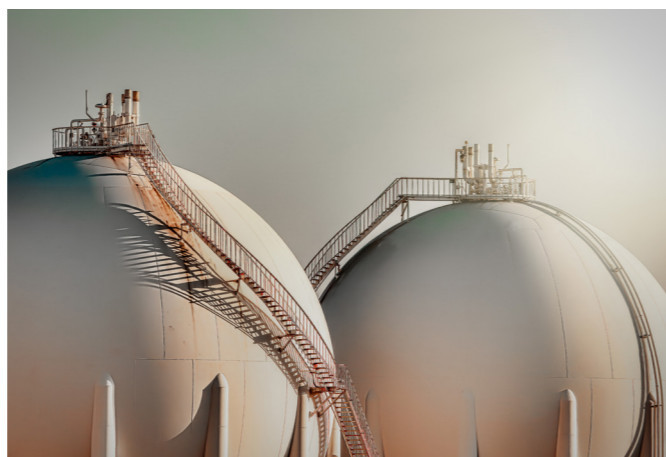
Achieving net zero carbon emissions by 2050 is an ambitious and deliverable goal; however, on current trajectory, it is unlikely to be realised. The post-Covid economic recovery is a clear opportunity to accelerate the transition to a green economy. And we have a further opportunity – to transfer a skilled workforce from oil and gas, with minimal re-skilling, to deliver Energy Transition projects.

Industry accounts for 21% of UK emissions¹ yet has received far less attention than transport and home energy efficiency in debates about decarbonisation. Further action is also needed to reduce emissions from energy supply, including oil and gas extraction.

Decarbonisation of industry and our energy system will depend on a number of factors – including the ability to deploy technologies such as carbon capture, utilisation and storage (CCUS) and fuel switching (e.g. hydrogen and electrification) at scale, as well as increasing the UK's energy generating capacity in wind and nuclear. These in turn need the right policies to support investment and a supply chain ready and capable of delivering low-carbon projects that require a skilled workforce.

Thankfully, the supply chain already has many of the skills and expertise needed. This network of engineering construction companies have significant experience of designing, project managing and delivering industrial-scale projects in the UK and internationally. They are already playing their part by building clean energy generation capacity in offshore wind, nuclear and waste-to-energy, and early engineering work is underway on industrial scale CCUS projects.

However, progress is slow. According to a recent report from Atkins², the rate of construction of UK clean energy projects is only 43% of the required build rate needed to hit the 2050 net zero target. Under the Industrial Clusters Mission, one industrial cluster will need to reach net zero by 2040; the remaining five will need to do so by 2050. In addition, the UK's entire nuclear power fleet will also need to be replaced with new nuclear plants, but only one is currently being built. Thirty years may seem like a long way off, but the size of the task dictates that greater action is needed now.



Prime Minister Boris Johnson's announcement earlier this month to increase offshore wind capacity to 40GW by 2030, alongside £160m of investment in port infrastructure upgrades, is therefore a crucial and timely development. There is a real opportunity to build on this momentum. The Government's ambition to 'build back greener' must now translate into concrete action to fast-track decarbonisation across other parts of industry.

Some areas of industry are advancing at a faster pace, but this is currently being done in the absence of clarity around policy and regulatory frameworks. Carbon pricing is needed to drive adoption of CCUS and hydrogen, while the nuclear industry awaits the details of a new financing model for nuclear new build. The UK Government's Energy White paper, scheduled to be published this Autumn, is anticipated to provide much needed clarity in these areas.

Why is this important for skills? The economic fallout of Covid-19 is likely to see a significant skills outflow from parts of the industry in the next 12-24 months. In oil and gas, which has been subject to a collapse in global oil prices, Oil and Gas UK estimate up to 30,000 workers – a fifth of the workforce – could be lost³. In the short term, it is difficult to see where this skilled workforce might be redeployed, and as a result, there is a major risk that they, and others from similarly affected sectors, will exit the industry for good.

By the time energy transition projects reach the engineering construction stage, the risk is there will be a shortage of skilled labour. The industrial clusters could require upwards of 40,000 workers – the Teesside cluster has suggested it alone will need 5,500 workers at the construction phase. Nuclear and offshore wind are also set to grow their workforce. There is therefore a major opportunity to retain and mobilise the existing skills base for decarbonisation projects.

At an occupational level, the skills required for net zero are likely to be the same as those already held by the workforce. ECITB-commissioned research by Element Energy shows that there is good alignment between existing engineering construction skills and those required for low- and zero-carbon industrial projects, albeit with some notable exceptions. Technology is a growing focus for the delivery of net zero projects and we will need data analysts to monitor CO2 storage and transportation systems. Systems thinking – namely how to integrate multiple engineering systems such as a CCGT plant, gas reformulation and hydrogen production technologies, CCUS and waste-to-energy facilities – will also be a critical discipline and is central to achieving a circular economy where resources are recycled and reused.

Net zero also presents a major opportunity to attract the next generation of talent into engineering roles. Young people are increasingly likely to want to pursue careers that align with their values and environmental concerns feature high on their list of priorities⁴. The Energy Transition is therefore an opportunity for the industry to reinvent itself and reach out more effectively to a wider, younger and more diverse talent pool.

The ECITB has a key role in supporting this agenda. Our remit is to ensure the workforce has the skills it needs and that includes preparing them for deployment on net zero projects. This work has started and we are working with partners in industry, government and academia to identify the skills that will be required, assess the labour demand profile, and ensure that we are in a position to deliver timely and targeted training and skills solutions.

This includes building on ECITB schemes that are already running, such as Train to Retain, which is helping industry retrain and reskill engineering talent. We will also ensure that young people coming into the industry have the requisite knowledge and training to deliver net zero projects, through initiatives such as our Scholarship programme as well as a new All-Energy SuperTec programme that we will start to deliver next year.

There is a real opportunity to deliver a green recovery, yet we are facing a missed opportunity both for net zero and the labour market unless we act quickly to bridge the gap between the skills outflow that is happening now and the skills inflow that will be required in the near future.

The Prime Minister's recent announcement on reforming the further education system is therefore a welcome and timely development. Delivering a Lifetime Skills Guarantee, alongside further support for learners and apprenticeships will be vital to ensuring we have a highly-skilled net zero workforce. Similarly, the Scottish Government's Transitional Training Fund will provide retraining and careers support to workers facing redundancy so that they are in a prime position to fill low-carbon roles. The ECITB is working closely with both Governments on this agenda, harnessing our ability to bring together employers and providers and drive investment in training across the UK's energy and industrial heartlands.

It is vital for the longer-term UK prosperity, and ambition to create a high-skill economy, that we retain and develop UK-based skills across the value chain. The UK is at the vanguard of decarbonisation being the first country in the world to legislate for a net zero target with other countries now following suit. UK engineering expertise can once again become an export asset with the right support and mobilisation strategy.

At the same time, the Covid pandemic has shown us the importance of having viable supply chains and skills on UK shores to make our economy more resilient in the face of future challenges. Net zero is an opportunity to enhance domestic economic performance and our global footprint, but only if we retain and develop the UK engineering skills base.

About the Authors



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¹ Committee on Climate Change, *Reducing UK emissions, Progress Report to Parliament, June 2020*, p 108 <https://www.theccc.org.uk/wp-content/uploads/2020/06/Reducing-UK-emissions-Progress-Report-to-Parliament-Committee-on-Cli...-002-1.pdf>

² <https://www.atkinsglobal.com/en-gb/media-centre/news-releases/2020/sep/2020-09-07-b>

³ <https://oilandgasuk.co.uk/call-for-three-stage-framework-to-help-head-off-thousands-of-job-losses-in-oil-and-gas-industry/>

⁴ See for instance, EngineeringUK's recent *Engineering Brand Monitor* research. 36% of young people say that when choosing a career, finding one that has a positive impact on society is the third most important factor to them, behind only job security and job availability <https://www.engineeringuk.com/media/232356/our-careers-our-future.pdf>