‘Unlocking the workforce for the green transition.’ Institution of Chemical Engineers (IChemE) 27/2/24

Background to the event

The transition to green energy is a key policy objective for the UK in the 21st century. Delivering it will require significant growth and development in the workforce. With many IChemE members making green energy a reality in a wide range of sectors, we have a particular interest in this topic. We believe that work in chemical engineering can and should be a motor for social mobility, and this theme applies more broadly to the wide range of jobs connected to the green transition. It has been estimated that “around 85% of the jobs that today’s learners will be doing in 2030 haven’t been invented yet”,i and that “[a]t least 80% of the UK’s 2030 workforce is already in the workforce today[.]”ii This presents a challenge and an opportunity.

At this roundtable, IChemE convened a range of expert voices from parliament, industry, academia and the third sector to explore how to make this policy objective a reality, and how to ensure that talents from all areas and communities across the UK can play a part in and fully benefit from this crucial work. This paper summarises key themes from that discussion.

1. Key themes emerging

1.1. The need for greater public understanding of the challenges and opportunities presented by the green transition

Participants felt that the public need to become more aware of the urgency and severity of the challenges posed by the green transition, alongside the wide range of opportunities it presents. It was seen to be crucial that everyone understands that the green transition is a field in which they could make a career for themselves, and that a wide range of skills and types of work will be required to make it a reality. Points raised included the need to turn net zero from an agenda that can feel vague and nebulous into something tangible and grounded in real-world projects. This was linked to broader issues, including a more general lack of awareness of the value of STEM careers.

1.2. The need for greater public profile for engineering and greater awareness of its importance

Attendees felt that the profile of chemical engineering and engineering more widely needs to be raised in parliament, and among the public to promote better decision making, increased cognitive diversity, and better outcomes. It was noted that engineers are poorly represented among MPs, and that student placements in MPs’ offices are disproportionately taken up by politics students. It was felt that encouraging more engineers to take on such placements would be valuable.

It was also suggested that action on Equality, Diversity, and Inclusion would lead to significant gains in the workforce available for the green transition – for instance, the projected shortfalls of engineers would be drastically reduced if women participated at a more equal rate.

1.3. The need to coordinate activity through an ambitious industrial strategy

The importance of long-term planning for businesses – as well as for individuals making decisions about their careers - was a key theme in discussion, alongside the critical role that an industrial strategy has in facilitating consistent, long-term planning. It was felt that the related topics of industrial strategy and the green transition should provide a vehicle for political consensus and long term stability, so assisting business, the economy and society.

Participants agreed on the importance – and the current absence of – a consistent and concerted industrial strategy in creating an inclusive green transition. It was suggested that to be successful, this needs a level of coordination and prioritisation similar to that seen during wartime.

It was noted that there was a large variety of government strategies and taskforces relating to the area, but that they were operating without coordination, constraining their potential to have a meaningful impact. This lack of coordination was seen as driving other issues, including a disconnect between the education system and the needs of the workforce. Similarly, it was observed that there are currently 12 skills taskforces linked to government, with coordination between them being a profound challenge. Another issue is the lack of a clear approach to how to avoid replicating existing patterns of disadvantage in the new green economy.

The lack of regional consistency in industrial strategy was remarked upon. It was suggested that greater regional coordination among local authorities, businesses, industry, and universities, and a potential revival of regional development bodies, would be an important part of the solution.

1.4. The need for a greater recognition of the value of technical qualifications and training among employers as well as current and future workers.

A key theme from discussion was current and future workers undervaluing technical qualifications, and the persistence of misperceptions about the kinds of opportunities that these present (for instance, technical qualifications only being seen to lead to limited career paths).

Work experience, placements and apprenticeships were a recurring theme in the discussion. Whilst they were identified as having a crucial role in ensuring a suitably large and skilled workforce, various challenges and limitations were noted in their current operation (for instance the lack of placements for students). Similarly, training and reskilling were identified as particularly important given that most of workforce for the green transition will be drawn from people currently working in other roles. It was hoped that the forthcoming green skills strategy would cover this topic. The fundamental role of employers was recognised in each of these areas, with some discussion taking place as to how work experience and placements might be best incentivised. It was agreed that existing engineers had an important role to play in advocating for greater availability of placements and opportunities within their own and other companies.

2. Key asks for government and next steps

IChemE calls on the government to

- Publicly recognise the pivotal role of chemical and process engineers in achieving a sustainable world and in the transition towards this.
- Designate chemical and process engineering as subjects of national strategic importance.
- Prioritise funding for research into key chemical and process engineering-related topics
- Prioritise chemical and process engineering education and training at all levels – supporting significant expansions in technical and apprenticeship, undergraduate, post-graduate and post-doctoral routes as well as reinstatement of ‘National Engineering Scholarships’.

- Simplify the Treasury Green Book, to allow all parts of the country to use it to effectively make the case for green investment.
- Ensure that all conversations and plans about the green transition consider how to make sure that everyone can take part in and benefit from the opportunities it presents.

IChemE will

- Follow up conversations with attendees on specific topics of interest (e.g. apprenticeships) and explore opportunities for partnership and further work as appropriate.
- Actively engage with governments, industry and policy makers, to communicate the breadth and scale of the changes needed if the world is to achieve a more sustainable future, and to highlight the pivotal role of chemical and process engineers.

About IChemE

The Institution of Chemical Engineers (IChemE) advances chemical engineering's contribution for the benefit of society. We facilitate the development of chemical engineering professionals and provide connections to a powerful network of around 30,000 members in more than 100 countries. We support our members in applying their expertise and experience to make an influential contribution to solving major global challenges, and are the only organisation permitted to award Chartered Chemical Engineer status and Professional Process Safety Engineer registration.

Find out more about IChemE and our strategic vision of Engineering a Sustainable World at icheme.org

[i] https://www.delltechnologies.com/content/dam/delltechnologies/assets/perspectives/2030/pdf/SR1940_IFTFforDellTechnologies_Human-Machine_070517_readerhigh-res.pdf

[ii] https://industrialstrategycouncil.org/sites/default/files/UK%20Skills%20Mismatch%202030%20-%20Research%20Paper.pdf