

Knowledge exchange between academia and industry – Secondment in Uniper Hydrogen UK

Exciting projects led by enthusiastic engineering teams are emerging as the industry and power sector are shifting to low-carbon hydrogen as a key energy source. However, we are yet expecting which project goes live. In June 2023 through IDRIC Secondment funding, I took a secondment to collaborate with Uniper's Hydrogen team in the UK. The secondment allowed involvement with the Humber H₂ub[®] project developed by Uniper and Shell for blue hydrogen production with a capacity of up to 720 megawatts (MW), using gas reformation technology with carbon capture and storage (CCS) at Uniper's Killingholme site. This helped to bring closer a major developer of low carbon projects and the University of Hull, a local university leading in research on low carbon energy within the Humber cluster. This talk will describe what the Uniper's Humber H₂ub[®] project entails and share the experience of working the engineering team leading the project. As secondee, I brought expertise in developing and modelling carbon capture technologies, particularly for those less mature technologies than those currently established in our carbon-intensive energy systems. For my professional development in CCS subjects, this secondment provided me with access to commercial environments where such solutions at scale are sought. My experience was used to support the assessment of the use of carbon capture technologies for full scale deployment in the Humber H₂ub[®] project, therefore contributing to the final selection of technology and process configuration for that project. In return, Uniper offered a unique opportunity to gain experience in a commercial and technical environment, which assist in improving mutual understanding of academic and industrial environments, improving collaboration across the Humber. In addition to the technical knowledge exchange, this experience has highlighted the need for government clarity related to their support to the new hydrogen industry.