Durham University
Durham Energy Institute

Centre for Postgraduate Training in Energy

PORT OF TYNE VISIT

Energy CPT Field Trip

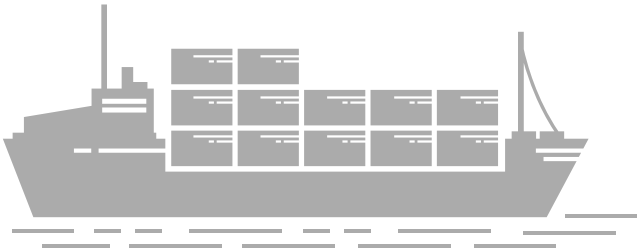
The Port of Tyne (PoT) exemplifies Britain's changing energy seascape. One of two deep-sea ports in the North-East of England, it is endeavouring to adapt and upgrade itself ahead of time to weather factors beyond its control. Across the maritime sector, whose lifeblood flows through ports, there is a drive to both decarbonise and develop smarter technologies in a bid to stay afloat. Significant steps for decarbonisation for the PoT occurred in 2016 and 2021, where the last coal imports, and then exports were handled through the port. As has always been the case for this industry in the North-East, the loss of this industry opened a gaping hole in the workforce. Direct employment at the port dropped from around 650 to 300 people over this time, with employment figures remaining relatively steady since then thanks to other established commodity routes such as Tetley tea and Nissan cars. As a part of the reorganisation from the loss of coal, 2019 saw the opening of the port's new Innovation Hub, and the laying of a Maritime 2050 roadmap. It was within this context that Durham's Energy CDT visited the PoT for a tour of the facilities.

We started in the innovation hub itself, with a presentation from the Innovation Manager for Energy and Sustainability at the port, Dr Eleni Bougioukou. She outlined the Maritime 2050 goals for the port, which included:

- Being all-electric by 2030, and all-electric including in-port boats by 2040,
- The use of smart-port technology, such as Alternate Reality (AR), Virtual reality (VR) and a new 5G network
- Clean fuel bunkering (methanol/hydrogen energy storage), and development of Green Corridors (end to end maritime routes ran purely on clean fuel).
- And an aspiration of having >30% CAPEX in the port in green energy projects

She also touted the recent development of Equinor's Dogger Bank Offshore Wind Operations and Maintenance Base on site, and how imports of biomass fuel (especially wood chippings) help to run local biomass generators.

So many literal green flags, and exciting plans for the future of this port. But why the rush to decarbonise? Why dedicate so much time and resource into new, cleaner, and greener projects?



In the past, decarbonisation had only ever been done to be compliant with government policy. But now and increasingly, customers are requesting low carbon processes, and the leadership team at the port are interested in pursuing this as a key strategy. PoT wants to be a leader and an example for how ports can operate smart and carbon free, and with more positive impacts onto the local community. Given the direction that policy, legislation, and public opinion are going, it makes most sense to be benefitting at the crest of the renewables wave, instead of floundering in its wake.

The port's ambitions were frankly relieving, and quite exciting to hear about. But will these set goals come to fruition? The answer is unclear, mainly because most port enterprise is strongly interconnected to other ports and businesses. Eleni described the overarching issue as a chicken or egg (what comes first?) situation. For example, if ships aren't built/retrofitted for clean fuel alternatives, it does not make any sense for the ports to build and provide clean fuel bunkering. And in cases where PoT is forcing the chicken to come first, as with the 200 acres of land PoT is setting aside for its clean energy park, enormous trust must be placed onto developers of clean energy business and governmental support. If these ventures are not successful, a place like PoT risks missing out on the wave of renewables and associated capital and employment our country is increasingly expecting.

A sunny guided walking tour proceeded our presentation, including impressive industrial warehouses, conveyer-belts, processing facilities and cars and cranes galore. The facility itself was impressive, and its potential to become a key player in the energy transition of the North-East was obvious. I am keeping my fingers crossed that it can become the green and technologically advanced port that it's innovation team envisions.

Will Burton

Energy CDT Student

** As part of their "living laboratory" vision, PoT are keen to provide a test-bed for innovative University Projects, offering facilities to test, trial and help out with what they can in the name of innovation. If you have an idea for such a project, please get in touch with Eleni at: eleni.bougioukou@portoftyne.co.uk