



E-MISSION ZERO 2024

Energy CPT Field Trip

In a trip so full of insight and information, it is a challenge to bring out one key takeaway. Beginning with no knowledge of the subject, a whirlwind tour of the rich geology of the North East gave me an impression of the geological richness of the region, how it intimately links to a complex history and continues to shape its development through the energy transition.

Stood on a patch of coast just north of Newcastle, we beheld a band of cliffside with coal coming straight out of the ground, its contours preserved in the shape of the 19th century mine which once operated there. Turning around, stood on the sea horizon, still turning, the first offshore wind turbines ever constructed in the UK. Such a contrast in a single view was a powerful microcosm of the unique history and enormous future potential of the North East.

Across the three potential development areas looked at on the trip: mineral wealth, carbon storage, and geothermal energy, one obstacle that has stuck in my mind since. Namely, that there is a problem with the concept of 'green technology' as it exists in the common imagination. To cut to the the core of the issue, consider the following images:



Which of these would be generally seen as green technology? A paradigmatic example, wind turbines would be ubiquitously regarded as such. Yet for the others it seems far from likely that they would be placed into the category.

An open cast mine evokes environmental degradation, habitat destruction, and pollution. Mining, particularly open cast, tends to be lumped with the fossil fuels industry as a villain in the climate crisis, and is viewed as antithetical to sustainability. Yet it is an inescapable fact that the minerals extracted from such mines are critical for manufacturing almost all of the technologies which underpin the energy transition, including wind turbines, solar panels, batteries, and electricity grids.

Similarly, to those without expertise, a carbon storage facility is indistinguishable from an oil refinery, and as an ugly complex of heavy machinery would be no less of an eyesore. There seems to be a fundamental disconnect between the emotive image of a green and pleasant land evoked to argue for accelerating the green transition, and the reality that this will require a proliferation of such facilities rather than their diminution. Ensuring the energy transition can occur at a sufficient pace, and to universal benefit, will require significant efforts to educate communities and create a framework that allows for the necessary progress in a just and fair manner.

For instance, the UK's offshore wind industry has made astonishing progress over the previous decade; 13 gigawatts has been added to the UK grid and total renewable generation outstripped fossil fuels for the first time in 2020. The pace of this expansion is set to accelerate, but currently the race is dominated by European energy giants. Indeed, fewer than half of the parts manufactured for offshore wind come from the UK. As things stand, much of the dividend from the UK's phenomenal wind resource is lost to the country. Politicians frequently make noises about this issue, most recently with a Labour plan to boost manufacturing for floating turbines.



The mineral wealth of the North East, and its proximity to the major offshore fields, would make it ideally suited to such industrial expansion. Development creates jobs and brings wealth to an area, but can also draw strong opposition from those concerned with conservation and its other downsides. The increase in self-determination through the recently created North East mayoralty could give impetus in either direction. My enduring impression of the trip is that the region's potential is enormous, but the challenges it faces are complex. I look forward to seeing whether it will rise to the occasion.



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