



From Acronyms to Energy



The first thing that struck me when I read through the abstracts of the papers in this edition was that they are all the work of authors who are based in South Africa. This is a wonderful illustration of the capabilities that exist in South Africa to serve the mining and metallurgical industry.

A wide range of subject matter makes for some challenging reading, with topics that cover artisanal mining, continuous casting in steelmaking, mine design, procurement, exploration drilling, and tailings storage facilities.

I have become increasingly aware of the use of abbreviations and acronyms when reading any technical literature and I illustrate this with information that comes from Drax, a power generating facility near Selby, North Yorkshire, not too far from where I live in the UK.

Drax Power Station (<https://www.drax.com>) was constructed in the late 1960s and it produces about 6% of the UK's electricity. It has six boilers, four of which have now been converted to burn biomass instead of coal. The biomass is wood pellets that are sourced from the USA and Canada and shipped to the UK and then railed to the power station. Drax burns in the region of 8 Mt/a of wood pellets.

Drax is the home of the largest decarbonization project in Europe and is now the site of innovation for bioenergy with carbon capture and storage (BECCS), a negative emissions technology essential for fighting the climate crisis.

It was the BECCS acronym that hit me when I looked at the Drax website while I was trying to gain a better understanding of Drax's biomass operations. I have since been drawn into a state of confusion!

A press release dated 15 December 2021 states that:

'Drax has approved a further investment in the development of its Yorkshire carbon capture project that will see Worley commence work on the Front-End Engineering and Design (FEED) phase.'

'[The] Contract is part of a 2022 capital investment programme of around £40m that includes site preparation works for BECCS and decommissioning of coal infrastructure following the end of Capacity Market obligations at the end of September 2022.'

'BECCS is seen as an essential technology to tackle climate change with the project at Drax set to capture and permanently lock away at least eight million tonnes of CO₂ a year ...'

The UK's largest power station is looking for a new subsidy. Drax's £10 billion of subsidies to burn wood for power will come to an end in 2027, and with it Drax's means of generating profit. In order to continue operating past 2027, Drax plans to build the world's first bioenergy with carbon capture and storage (BECCS) plant. By capturing the carbon emissions of wood burned for electricity and storing them under the North Sea, Drax intends to generate the negative emissions the UK is reliant upon to reach national climate targets, and would seek to be rewarded for this through new public subsidy.

Drax received more than £800 million in biomass subsidies from the UK government (British taxpayer) in 2020 - with no obvious climate benefit. However, critics suggest that the scientific consensus on 'sustainable' biomass may soon change.

'Recent science demonstrates that burning forest biomass for power is unlikely to be carbon neutral - and there's a real risk that it's responsible for significant emissions.' Ember Chief Operating Officer Phil MacDonald stated. <https://ember-climate.org/>

'Before the government spends more taxpayer money on biomass, we should make sure we know we're getting the emissions reductions that we're paying for.'

It would be interesting to see an energy balance that details the energy consumed for the production of the wood pellets plus the energy required to transport, ship, and rail the pellets to Drax. In other words the energy input cost to Drax and compare it to the energy output cost.

It seems to me that the Drax story has a long way to go, and all this because of my interest in an acronym!

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