

**Biofuelwatch would like to submit two further items and summary comments for the benefit of the Examiner:**

### **Capture Capture success at other facilities**

*Petra Nova Mothballing Post-Mortem: Closure of Texas Carbon Capture Plant Is a Warning Sign Red Flags for Investors on Coal-Fired CCS Projects; Shutdown Lays Bare the Risks Around Proposals That Include Enchant Energy's in New Mexico and the Tundra Project in North Dakota, Dennis Wamsted, Analyst/Editor David Schlissel, Director of Resource Planning Analysis August 2020 Institute for Energy Economics and Financial Analysis.*

For ease the 9 page paper is also submitted in its entirety, given the ExA's previous interest and request for additional information on this area.

This paper casts further doubt on the ability of Drax or any other carbon capture plant to consistently achieve the high capture rate that Drax is claiming it will achieve. This paper warned against using the now mothballed plants alleged success to support the development of other CCS projects:

*The 240-megawatt Petra Nova carbon capture and storage project at Unit 8 of NRG Energy's W.A. Parish Generating Station near Houston is the only operational coal-fired power plant CCS facility in the U.S. As such, it is frequently cited by promoters of CCS retrofits at other coal-fired power projects as proof that the process works and that it is an economically viable option for cleaning up coal-fired generation. As such, it is frequently cited by promoters of CCS retrofits at other coal-fired power projects as proof that the process works and that it is an economically viable option for cleaning up coal-fired generation.*

*But there have long been serious questions about the performance at Petra Nova. These questions have only been heightened by NRG's official announcement in late July that it mothballed the carbon capture project in the spring due to falling oil prices. NRG's plans for the project remain uncertain, with the company only saying it could be brought back online "when economics improve."*

*The mothballing of Petra Nova highlights the deep financial risks facing other proposed U.S. coal-fired carbon capture projects, including Enchant Energy's plan for the San Juan Generating Station in New Mexico and Minnkota Power Cooperative's Tundra Project at the Milton R. Young Station in North Dakota. NRG's decision to shutter Petra Nova also underscores the serious lack of transparency surrounding the plant and its operations. **This lack of transparency is all the more worrisome given that the plant's alleged success is being used to support the development of other CCS projects.** [emphasis added] In truth, essential questions about its performance and feasibility have never been answered, an awkward fact that should give potential investors in similar projects serious pause.*

Six questions persist:

- Before it was mothballed, was Petra Nova really consistently capturing 90% of the carbon dioxide in the 240MW slipstream it was processing?
- Why didn't the project capture as much CO2 as proponents had predicted?
- What has it cost to capture a ton of CO2 at Petra Nova?
- Has the captured CO2 actually boosted oil production at NRG's affiliated oil field?
- Has the Petra Nova project been economic?
- What does the mothballing of Petra Nova mean for the project's future financial viability?

The answer to the first question is that overall, Petra Nova captured 662,000 fewer than the 4.2 million metric tons of CO2 than projected during its first three years of operation - well below its projected 90% capture rate.

### **Drax's scientific advisory board recommending Drax move away from stating that biomass is carbon neutral.**

It has recently come to light through media reports (although this information was already publicly available) that Drax's own scientific advisory board made a number of recommendations including that Drax move away from stating that biomass is carbon neutral. This may already have been partially addressed by the Applicant changing its terminology from 'carbon neutral' to 'zero rated'.

The full set of the recommendations Independent Advisory Board made are as follows:

In response to these presentations, the IAB made the following recommendations: 1. In presenting its narrative, Drax should: 1) avoid using the word "waste", 2) ensure the narrative is region specific and includes counterfactuals 3) employ more methodologies, such as statistical models (e.g., using large datasets). 2. Drax should reassess its criteria for determining carbon neutrality. For example, Drax should move away from saying "carbon stocks are increasing/stable" and stating biomass is carbon neutral. Drax needs to understand what alternative criteria there might be for carbon neutrality and how it can be measured cost effectively. 3. Drax's Senior Scientific Officer should develop the evidence base/science tracker as quickly as possible

We also submit the one page report in its entirety separately.

### **Conclusions of our submissions**

#### **BECCS at Drax is not compatible with the UK's ambitions to reach Net Zero by 2050**

- Drax is unlikely to achieve the carbon capture rates it aspires to - other plants have not yet been able to do so
- Woody biomass is not carbon neutral casting doubts on Drax's carbon negative claims
- The payback period for woody biomass - which Drax relies on - is far too long for it to be considered as part of the solution for Net Zero 2050

- Based on the current slow trajectory of the technology BECCS at Drax is unlikely to come online in time to make a contribution to the UK achieving Net Zero in the required timescale (by 2050)
- Powering Up Britain's carbon budget delivery plan strongly suggests re-emphasis on perennial energy crops and short rotation forestry and thus a move away from woody biomass making biomass burning and therefore BECCS at Drax redundant
- BECCS at Drax is incompatible with the need for the UK to increase electricity generation