

Biomass Bridging Subsidies briefing for Simon Lightwood MP

The UK has two large biomass plants generating electricity: Drax in our region and Lynemouth in Northumberland. There is a potential third plant in Teesside. By large, we mean over 100MW. Drax is by far and away the biggest, having previously been the country's biggest coal fired power station.

The two large generators have been receiving subsidies to burn imported wood pellets through a mix of ROC (Renewables Obligations Certificates) and CfD (Contracts for Difference). These subsidies are paid by bill payers through the "green levy", and are due to end in 2027.

The Secretary of State for Energy Security and Net Zero (DESNZ) is currently consulting on initiating a new round of subsidies from 2027 with no defined end date, called bridging subsidies. These claim to be designed to enable the two existing plants to continue working between now and when they can install operating Carbon Capture plant, at which point they would be described as "power BECCS" units. These are supposed to connect to undersea storage via a pipeline that has not yet obtained planning permission.

On the face of it, this might seem sensible. In reality, it is anything but. There are three sets of objections: environmental and technical; economic; political. They are all discussed in our response to the bridging subsidy consultation, but to give you a "way in", they are summarised here:

Environmental and Technical

The fact that wood pellets are being burned to generate electricity relies heavily on over simplified school science: that trees are "renewable" because they regrow and recapture (re-sequester) the carbon emitted from their combustion.

Real science is rather more complex. Depending on the type of tree, the type of forest it grew in, and how much of it is burned rather than used in other products, it can take between 40 years and 200 years to recapture the carbon from a burning tree. (Typically, sawmill waste has the shortest recapture time, as some of the tree's carbon is locked up for several decades in wood products such as roofing timbers.) Typically, hardwood from a mature, biodiverse forest takes the longest, and will probably never be fully recaptured. This is because softwoods are more likely to replace it, biodiverse forests are more carbon-dense than monoculture plantations (because they store a greater proportion of carbon in their trunks and less in the soil), plantations are likely to be re-harvested when the trees are younger, and so on. Therefore, it is clear that within the UK's legal deadline to achieve net zero by 2050, no wood pellet harvested from 2020 onwards will have its carbon fully recaptured. Hence we say that woody biomass can never be part of a net zero solution with a target date of 2050, and almost certainly never.

Forests do not only capture and store carbon – they are biodiversity hot spots, home to many species of plants, animals (insects, birds, mammals, soil organisms, etc), fungi, and soil microbes. Some of these will be endangered, such as Caribou in British Columbia and an estimated 2,500 species in the swamp forests of the south eastern USA. Licenced or not,

logging mature, biodiverse forests is not compatible with the UK's or global commitments to protect and restore nature, whatever that timber is used for. This is further argument against burning forest derived wood pellets.

There are also technical points which are a bit more arcane. Because of the reliance on simplistic school science, and to make the carbon accounting system easier to operate, biomass is "zero rated" as a fuel. This does not mean it is zero carbon or carbon neutral, it is a bureaucratic nicety. However, the system fails to count the emissions from transport and processing, it fails to count soil emissions from clear felled forests, it fails to account for the loss of existing and growing carbon sinks, and fails to account for the time delay between burning the fuel and recapturing the carbon. Thus, burning biomass is NOT carbon neutral and Drax power station is still the UK's biggest single emitter of carbon dioxide.

Finally in this section, the biomass sustainability criteria are currently under review. How can a whole new subsidy regime be signed into contract before the new sustainability criteria are decided or agreed on?

Power BECCS/Carbon Capture and Storage.

The original application to retrofit CCS to Drax relied on the assumption (since corrected) that biomass is zero carbon in operation, so all captured carbon would count as "negative emissions" and to allow carbon credits to be sold to other polluters. Now that all parties have agreed that this is not the case, that it is merely "zero rated", the case for BECCS has to be reconsidered, as does the case for negative emissions. **This reconsideration has never happened, not is it planned to happen.**

Further, the glossy literature says that BECCS will capture 95% of carbon emissions from the power station. This is highly contestible. No other CCS system on a power station has achieved more than 60% capture rate, and all but one have been cancelled pre or post construction, or after several years of expensive failure to deliver on its promises. There can be no confidence that power BECCS will perform any better than any other CCS fitted power station.

Also, the whole basis of the consultation to extend a new subsidy regime to biomass generation is based on the principle that power BECCS will be "dispatchable". This means that it can be switched on at periods of high demand or low wind, and switched off at other periods so that we prioritise cheaper renewable generation. Unfortunately, the CCS equipment takes several hours to power up and to power down, so power BECCS is only suited to baseload generation. This was explored carefully in the planning enquiry, with the inspector asking direct questions and receiving direct answers. **We do not understand why the Secretary of State is persisting with this consultation into bridging subsidies, when the object of the subsidies is to deliver a flexible, dispatchable system to balance the grid when renewables under deliver – that we know power BECCS cannot deliver.**

Economic

Biomass from forests is a product from a finite resource, and we have very accurate details from satellite observations of the amount of forest left in the world.

Biomass is currently an expanding industry globally.

The UK cannot produce the amount of timber each year even to run Drax, never mind Lynemouth and the other smaller power stations.

As well as producing wood pellets, society also expects forests to produce timber for construction, furniture, paper, textiles... All of which lock up carbon longer than burning it, all of which provide greater social good, all of which compete for the same raw material – trees.

Forests are in demand as biodiversity sinks – places to conserve and regenerate nature and natural systems.

Forests are in demand as carbon sinks – long term carbon stores to protect from further climate change.

With all of these competing, and socially beneficial uses for trees and forests, wood pellets to burn must be near the bottom of the pecking order. It is fair to assume that as climate breakdown worsens and accelerates, as global treaties to protect and enhance nature and to end deforestation are enacted and enforced, and as nations take protectionist actions to preserve their own resources, that there will be a significant upward price pressure on biomass like wood pellets.

Locking consumers into subsidising a process with predictable upward price pressures is NOT in the best interests of the UK, or future governments who need exit routes from badly designed subsidy regimes.

Political

Even under a worst case scenario, we are less than a year away from a general election and it is widely predicted that the current government will be replaced with a new governing party or coalition. This consultation ends on February 29th, and by March 31st, within one month, eligible providers (Drax and Lynemouth) are asked to apply for the bridging subsidies. This is indecent haste and will lock any incoming government into contracts to continue subsidies with no defined end, in an environment of rising prices.

As we speak, there are a number of legal challenges underway: the challenge to the government's net zero strategy is in court now, which may well cause another re-write of the net zero strategy. This taken by Friends of the Earth, Client Earth and the Good Law Project. There is a challenge to the biomass strategy itself by Lifescape

(<https://www.leighday.co.uk/news/news/2023-news/environmental-charity-seeks-judicial-review-of-government-s-plans-to-promote-the-use-of-biomass-fuel-in-its-strategy-to-cut-greenhouse-gases/>) . There may be other challenges in the pipeline -

(<https://www.leighday.co.uk/news/news/2024-news/biofuelwatch-uk-threatens-legal-challenge-to-decision-to-allow-carbon-capture-installation-at-drax-power-plant/>).

How can this consultation lead to legally binding subsidy contracts when the whole basis of the industry is being legally challenged?

I apologise that this easy summary is still 3 pages long, however, I hope that it makes the subject more accessible.

We ask that you support us, in the interests of good government, by asking the following questions of the Secretary of State for Energy Security and Net Zero:

- How can this consultation lead to legally binding subsidy contracts whilst the whole basis of the biomass power industry, and the Net Zero Strategy supposedly propped up by biomass, are both being legally challenged?
- Why is the Secretary of State persisting with this consultation into bridging subsidies, when the object of the subsidies is to deliver a flexible, dispatchable system to balance the grid when renewables under deliver, when we know that power BECCS cannot deliver flexibility and dispatchability?
- As part of the review into the sustainability criteria for the biomass supply chain, will the secretary of state commit to sustainability criteria that ensure zero supply chain emissions and zero negative impacts on ecosystems or endangered species? Or in fact no negative health impacts on workers and blighted communities?

- Can the Secretary of State confirm that if these bridging subsidies go ahead, they will only be applied to biomass units that are committed to retrofit CCS within a defined timescale.

Stuart Boothman
Just Transition Wakefield