biofuelwatch

#AXEDRAX FOR THE CLIMATE, FORESTS, AND COMMUNITIES!

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Drax Power Station. Photo Greenpeace

Drax's portfolio covers three types of dirty energy: Biomass, coal and gas.

Drax Power Station is the single greatest emitter of carbon dioxide in the UK, burning more wood than any other plant in the world. Although Drax is phasing out coal burning, it wants to regain its power station's status as the UK's biggest fossil burners by planning to build the UK's largest ever gas power capacity.

Through acquisitions, the company currently owns four existing gas power stations with a total capacity of 2 gigawatts. It holds planning consents for four more. The giant gas power capacity at its main Yorkshire site was approved by the Government in October 2019, however a court challenge of this approval, raised by the environmental law organisation ClientEarth, will be considered by the High Court and construction cannot start in the meantime.

In return for trashing forests and fuelling climate change, Drax is receiving massive subsidies, when it should have been closed down years ago. In 2019, Drax cashed in on £2.36 million in subsidies every single day, of which £2.61 million were renewable energy subsidies for burning wood, and the remainder for burning coal. Meanwhile, subsidies for genuinely renewable and low carbon onshore wind and solar power have been slashed across the UK.

Drax's biomass electricity counts towards the UK's legal target of producing 15% of all our energy from renewables by 2020. Yet in 2019, Drax burned the equivalent of much more than the UK's entire annual wood production, to meet only 0.81% of the country's total final energy demand.

For forests, communities, and the climate, it's time to #AxeDrax!

DRAX'S BIOMASS CONVERSION AND IMPACTS

The power station consists of six units. Four of those have been converted to only burn wood pellets – three of them round the clock, with the fourth operating 'on standby', mainly when one of the others is shut down for maintenance.

Since 2015, Drax has been burning more wood than the UK produces every year.

In 2019, Drax burned 7.05 million tonnes of pellets made from at least 14.1 million tonnes of green wood.[1] By comparison, the UK's total annual wood production was just 11.6 million tonnes.[2]

Burning wood for electricity is no less disastrous for the climate than burning coal.

Per unit of electricity, biomass emits more CO_2 from smokestacks than burning coal does. Biomass supporters claim that this CO_2 should be ignored because it will be absorbed by newly planted trees. In 2019, Drax reported that its biomass power station units released 12.795 million tonnes of CO_2 into the atmosphere (in addition to 2.37 million tonnes from fossil fuels, mostly coal). However, Drax argues that almost all of the emissions from biomass burning can be ignored (except for ones from burning fossil fuel in pellet plants, shipping, etc.).

This flies in the face of science. In January 2018, a letter by 800 scientists was sent to the European Union, warning:

"*Even if forests are allowed to regrow, using wood deliberately harvested for burning will increase carbon in the atmosphere and warming for decades to centuries as many studies have shown even when wood replaces coal, oil or natural gas. The reasons are fundamental and occur regardless of whether forest management is 'sustainable'.*"[3]

Wood pellets being taken from Peel Port, Liverpool, to Drax. Photo Katy Brown.

DRAX'S PELLET SOURCING

In 2019, 65% of the pellets burned by Drax were imported from the southeastern US. In addition to those 4.6 million tonnes, Drax also burned 1.1 million tonnes from Canada and 773,811 tonnes from the Baltic States, as well as smaller quantities from Portugal, Russia and Brazil.

Wood pellets from clearcut coastal hardwood forests and monoculture pine plantations in the southern US

Drax now owns three pellet mills in the Southeastern USA: two in Louisiana and one in Mississippi. The 1.4 million tonnes produced at

those mills in 2019 are believed to be sourced mainly from monoculture pine plantation. Across the region, such plantations have been expanded at the expense of the rich forest ecosystems that are being clearcut. They are 'sterile' plantations with virtually no undergrowth, inhospitable to wildlife. According to a study commissioned by the Southern Environmental Law Center, burning pellets from SE US pine plantations in the UK will be worse for the climate than the UK's average electricity for a period of at least 40 years.[4]

Drax's single biggest external pellet supplier is the USA's – and the world's – biggest pellet producer, Enviva. Enviva has come under heavy criticism from US environmental NGOs for regularly sourcing wood from clearcut coastal hardwood forests – many of them swamp or wetland forests - as well as contributing to environmental injustice by siting its pellet facilities in places already exposed to high levels of industrial pollution and social deprivation.

Three US conservation NGOs have documented evidence about Enviva's practices, showing how Enviva pellet mills are sourcing wood directly from clearcut wetland forests.[5]

Those forests lie at the heart of a global biodiversity hotspot, home to a high number of animal and plant species found nowhere else in the world.[6] Just 20% of the vast hardwood wetlands forests once found in the region remain, and only 10% are protected.[7]

Logs being taken to an Enviva pellet mill, North Carolina. Photo Dogwood Alliance.


Clearcut, North Carolina. Photo Southern Environmental Law Centre.

Drax admits that most of its wood pellets from the region are made from whole trees, not residues. It claims that most of those pellets come from 'low grade roundwood' and 'thinnings'. This is partly true for pellets made from pine plane plantation wood – but logging of hardwood forests virtually always involves clearcutting. And forestry companies routinely classify the majority of trees as 'low-grade' simply because they are not of exactly the right size and straightness for sawmills.

Wood pellets from other regions – British Columbia and Baltic States

In British Columbia, where most of Canada's pellets plant capacity is located,[8] ancient forests are being logged on a vast scale. Insect infestations – which are natural in such forests, if exacerbated by climate change – are being used as one excuse to clearcut large tracts of forests which would otherwise recover and continue to provide habitat for wildlife as well as

Logging site near Pinnacle Pellets's Meadowbank pellet mill in British Colombia. Photo Mary Booth.

Log pile near Pinnacle Pellets's Meadowbank pellet mill in British Colombia. Photo Mary Booth.

sequestering carbon. Wildfires are escalating because of a combination of climate change and destructive logging. Timber companies then go in to 'salvage log', i.e. clear out all remaining wood. This has been shown to deprive soils of nutrients and prevent the forest regeneration that would naturally happen.[9]

The provincial government continues handing out logging permits in intact oldgrowth forests. According to research by the Canadian conservation NGO Wilderness Committee in 2019, the British Columbian government had granted 314 new licenses, extending over 16,000 hectares, located in southern mountain caribou habitat, in just five months. Oldgrowth forests logging is continuing apace across the region.[10]

One of the five biggest timer companies responsible for large-scale clearcutting is Tolko Industries. Tolko works in close partnership with Pinnacle Pellets, one of Drax's main suppliers, with joint investments in pellet facilities and co-location of sawmills with pellet plants. Pinnacle uses whole trees as well as so-called 'residues', thus boosting timber companies' profits from ancient forest logging.

In the Baltic States, Drax buys pellets from Graanul Invest, Europe's largest and the world's second largest pellet producer. Graanul Invest is an Estonian company with pellet mills in Latvia, Estonia and Lithuania. Members of Biofuelwatch visited Estonia in 2018 and 2019 and witnessed first-hand the scale of forest destruction in that country.[11] Half of the country is classified as forest – although an ever larger part of this area has been and continues to be clear-cut. Even the small remnants of oldgrowth forests are not safe from logging. Estonia is home to 12% of Europe's threatened species, including the Eurasian Flying Squirrel (close to extinction in Estonia), Black stork and other threatened birds, European brown bear and European wolf. Logging is one of the key threats to wildlife.[12] Between 2001 and 2015, Estonia lost 205,000 hectares of tree cover. The Nature Conservation Commission of the Estonian Academy of Sciences has warned: "*Today's forest management as a whole is unsustainable in its present trend, does not guarantee biodiversity conservation, takes little account of ecosystem services and therefore needs to change.*"[13] Yet the government wants to see annual logging rates increased further still.

Logging site close to Graanul Invest's pellet plant at Ebavere, Estonia.

DRAX'S SUBSIDIES

During 2019, Drax 'earned' £789.5 million in renewable electricity subsidies. That's £2.1 million every day.[14] Renewable electricity subsidies are financed through a surcharge on electricity bills. Drax receives two different types of those subsidies: Renewable Obligation Certificates (ROCs) and one Contract for Difference (CfD), with ROCs making up the larger part of what the company is receiving. Together Drax's biomass subsidies exceed its gross profits, which means that the company couldn't keep operating the power station without them.

On top of all of this, also in 2019, Drax received a one-off £72 million in subsidies for burning coal, via the Capacity Market scheme.

Redirecting the huge amount of biomass subsidies which Drax receives could create a windfall for genuinely low-carbon renewable energy and make an important contribution to reducing the UK's greenhouse gas emissions. Sadly, Government policy in recent years has seen subsidies for onshore wind and solar power as well as for energy efficiency and conservation slashed.

Demonstration outside Drax's AGM, 2019.

DRAX'S GAS INVESTMENTS AND PLANS

Following its takeover of Scottish Power assets at the start of 2019, Drax owns four gas power stations with a combined capacity of more than 2 gigawatts (Damhead Creek, Rye House, Shoreham, Blackburn). It also holds planning consents for four new gas power plants: Hirwaun Power Station near Merthyr Tydfil, Progress Power Station in Mid Suffolk, and Abergelli Power Station, north of Swansea, and Millbrook Power Station in Bedforsdhire. Unlike the existing ones, those four, if built, would be operated during peak demand only, and, altogether, will be equivalent to one 224-Megawatt power plant operating all year round.

Most alarmingly, in October 2019, the Secretary of State granted Drax planning consent for replacing its coal power units (to be mothballed by 2022) with a massive 3.6-Gigawatt new gas capacity, far larger than any gas power plant ever built in this country, and three times the size of the coal units being replaced. It would be 2.7 times bigger than the UK's largest gas power station today, West Burton.[15]

89 environmental organisations, 75 of them from the UK, have signed an Open Letter against those plans,[16] and over 95,000 people have signed a similar petition.[17] The Government approved the application despite the Planning Inspector (who had overseen a Public Inquiry) having recommended against it. The environmental law organisation ClientEarth has been granted permission for a Judicial Review challenge of this decision.[18] The project is on hold until this has been decided.

Power Beyond Borders anti-gas power demonstration, 2019. Photo Diane More

DRAX'S CLAIMS ABOUT "GOING CARBON NEGATIVE"

At last year's UN Climate Conference in Madrid, Drax announced its ambition to become the world's first carbon-negative company by 2030.[19] It would do so by capturing up to 16 million tonnes of CO_2 a year from its biomass units, which is more than those units emit in total right now. This process is called Bioenergy with Carbon Capture and Storage (BECCS). Drax added that this would require the right "policy and investment framework" – presumably more direct or indirect subsidies.

In 2018, Drax partnered with a small start-up company called C-Capture to trial capturing one tonne of CO_2 a day from biomass burning.[20] The plan was to sell that small amount of CO_2 to pubs in order to 'keep fizz" in beer – hardly a form of 'storage'.[21] In 2019, Government granted C-Capture £5 million to extend this trial to capturing 100 tonnes/day. So far, C-Capture and Drax are still trying to capture just one tonne daily, all of which is being released against right away.[22] The Government has granted another £500,000 to a different startup (Fuel Cell Energy) for a "study to assess the feasibility of building a second carbon capture pilot at Drax Power Station", with the aim of supplying CO_2 to greenhouses (again, not actually storing any).[23] However, this study does not even involve trying to capture any carbon dioxide at all.

Finally, Drax has partnered with the Norwegian energy company Equinor (formerly Statoil) and National Grid Ventures to try and attract government funding for a "Zero Carbon Humber" Hub to develop hydrogen production as well as storage of captured carbon dioxide.[24]

However, there are reasons to doubt that Drax has any viable plans to capture carbon from biomass burning: neither C-Capture nor Fuel Cell Energy have any prior experience in carbon capture. C-Capture is trialling a novel type of solvent, instead of ones widely used and tested. Experts in carbon capture, based in Norway, are due to test this solvent later this year – so far it has not been externally validated.[25] A recent peer-reviewed article by researchers linked to C-Capture[26] states that the new solvent is capable of capturing CO_2 particularly if used in conjunction with different chemical – amines – which the company has made clear is not what they are doing at Drax power station.[27] It further concludes that: "performance in an industrial-scale capture

system is uncertain and will be the subject of future studies." Clearly, this technology is a very long way off being scalable.

This raises the question whether Drax might be using the discourse about BECCS to attract long-term biomass subsidies (beyond 2027, when the current ones run out) on the pretext that its power station is 'capture ready'. This is, for example, how Scottish Power retained government support for its Longannet coal power station for many years, until forced to close it for economic reasons.[28] It is how several energy companies pushed plans for new coal power stations several years ago - plans which were successfully stopped by campaigners in the UK but were sadly successful in the Netherlands. There, at least one new coal power station was approved explicitly with the promise that carbon capture would be trialled and could be retrofitted to the whole plants.[29] It has never captured a gram of CO_2.

HOW WE CAN #AXEDRAX AND HOW YOU CAN HELP

Drax's 2019 Annual Report confirms that the company's survival depends heavily on long-term subsidies for biomass, and on the company's ability to combine a large biomass with a large fossil fuel portfolio.

We need your help to stop this!

- If you are part of an activist group, community group, public health group, trade union or NGO, please ask them to sign an Open Letter calling for subsidies for biomass electricity (on which Drax depends) to be redirected to genuinely low-carbon, clean renewable energy.

- Sign up to our announcement list to find out about future Twitter actions, protests, petitions and e-alerts against Drax's biomass subsidies and gas power plans.

- Email us (biofuelwatch[at]gmail.com) to find out how else you can get involved in building the campaign to #AxeDrax.

- Share resources from our website among your networks.

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