

#AXEDRAX : WHY DRAX NEEDS TO HAVE ITS SUBSIDIES STOPPED, AND BE SHUT DOWN

Drax remains one of the top two coal burners and the single greatest emitter of carbon in the UK. Now it is also the biggest biomass power station in the world. Since 2015, it has been burning more wood every year than the UK produces in total annually.

In return for trashing forests and digging up communities, Drax is receiving massive subsidies when it should have been closed down years ago. They cashed in on almost £1.5 million in subsidies every single day in 2016 and will be getting even more in future. Meanwhile, subsidies for genuinely renewable and low carbon onshore wind and solar power are being slashed across the UK.

DRAX'S (PARTIAL) BIOMASS CONVERSION

The power station consists of six units and Drax has converted three of them to burn only wood pellets. In 2016, Drax burned 6.6 million tonnes of pellets, made from 13.2 million tonnes of wood. [1] By comparison, the UK's total annual wood production is only 10.8 million tonnes. [2]

Drax also burned 2.9 million tonnes of coal in 2016, putting it in the top two of UK coal burners, together

with Aberthaw Power Station. The previous year, Drax's coal-fired units had burned 6 million tonnes of coal and Drax makes it clear in its 2016 Annual Report [3] that the only reason it burned less coal last year was the lower price for electricity. If the cost of electricity goes up once more, Drax can thus be expected to increase its coal-burning to as much as 6 million tonnes a year once again.

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

Drax shouldn't be burning coal or biomass because of the huge impacts both have on communities, the environment, and the climate. Drax must be closed down instead. Without subsidies, Drax would be operating at a loss and would likely have to shut down.



THE IMPACTS OF DRAX'S BIOMASS BURNING

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

Per unit of electricity, biomass emits more CO₂ from smokestacks than burning coal does. [4] Biomass supporters claim that this CO₂ should be ignored because it will be absorbed by newly planted trees, but trees take decades to grow and minutes to burn. Clearcut forests may never be able or allowed to regrow. And when biodiverse forests are being clearcut and replaced with monoculture tree plantation, as is common in Drax main wood sourcing region, the southern US, carbon is irreversibly lost to the atmosphere. The real purpose behind Drax's biomass conversion is to keep this old, dirty power station alive for longer and to cash in on massive public subsidies. Far from replacing coal, Drax's partial

conversion to biomass allows the power station to continue burning millions more tonnes of coal year in, year out.

In 2015, Drax was estimated to burn nearly one third of all globally traded wood pellets. [5] Since November 2015, when E.On closed Ironbridge Power Station, Drax has been the only UK power station burning imported wood (though others are in the pipeline).

Most of the pellets burned at Drax are imported from the southern US, followed by imports from Canada and from the Baltic States. Drax has built two pellet mills: one in Louisiana and one in Mississippi. Between them, those will be able to produce just over one million tonnes of pellets a year from the end of 2017.

Furthermore, Drax has just acquired a large pellet mill development in Louisiana, which was commenced by the company German Pellets, which filed for insolvency in February 2016. The pellet mill will can currently produce 450,000 tonnes of pellets a year, but German Pellet had planned to expand it to a massive 1 million tonne capacity, which would require 2 million tonnes of wood annually. [6] Drax has also bid to acquire German Pellets' second pellet mill in the US, based in Woodville, Texas, with a capacity of 500,000 tonnes of pellets a year. Interestingly, Drax's biggest shareholder, Invesco Ltd, was the biggest debt-holder for those two mills.

Wood pellets from clearcut wetland forests in the southern US

Drax is by far the biggest customer of the controversial US pellet producer Enviva. Enviva has come under heavy criticism from US environmental NGOs for sourcing wood from clearcut coastal wetland forests.

Wetland hardwood forests in the southern US are amongst the most biodiverse forest and aquatic

ecosystems worldwide outside the tropics. Just 20% of the vast hardwood wetlands forests once found in the region remain, and just 1.2 million hectares of this are 'mature' i.e. they have not been logged for the past 80 years. Enviva and Drax have built pellet mills within a sourcing area which includes mature hardwood forests and biodiversity hotspots.

See [here](#) for an investigation by US conservation groups Dogwood Alliance and NRDC (Natural Resources Defense Council) in December 2014, which shows how an Enviva pellet mill in North Carolina is sourcing wood directly from clearcut wetland forests. Pellets from that mill are being burned by Drax.

Enviva and Drax claim that they are only using 'residues', but in fact the majority of the wood from clearcuts commonly goes towards wood pellets – and it is unlikely that forest owners would be clearfelling entire forests without this demand. US groups have submitted a complaint against Enviva's 'misleading claims' to the US financial regulator.

A cleared area of wetland hardwood forest in the southern US. Dogwood Alliance



Wood pellets from pine plantations in the southern US

A proportion of Drax's wood pellets is sourced from monoculture pine plantations in the southern US. Such plantations are being rapidly expanded across the region, at the expense of biodiverse native forests. Environmental campaigners from Dogwood Alliance visited Drax's pellet mill in Massachusetts in 2015. They wrote: "Orderly rows as far as they

eye can see like a cornfield, regular spraying of fertilizers and herbicides, and plantations are so quiet because they're almost devoid of wildlife. Before they can grow into majestic trees, the heavy machinery chops them down like mowing a lawn. This is the commodification of nature and our forests. We chop down our native forests (in this case likely natural pine or mixed

pine/hardwood forests) and destroy all the value these forests contained, replacing them with rows and rows of monoculture tree crops. Loblolly, slash and sand pine have replaced the dozens of species that used to call this region home."

You can read more about the impacts of Drax's pellet sourcing from the southern US on the

[Dogwood Alliance website](#) and [NRDC's Our Forests Aren't Fuel campaign page](#), and we've got [more resources on biomass and the carbon impacts of it.](#)



A loblolly pine plantation. USDA Natural Resources Conservation Service

THE IMPACTS OF DRAX'S COAL BURNING



Even when Drax's 50% conversion to biomass was almost complete, Drax still burned 6 million tonnes of coal in 2015. Thanks to low electricity prices, that figure fell to 2.9 million tonnes in 2016, but it could increase again in future. During 2016, 69% of Drax's coal came from Colombia, 28% from opencast coal mines in the UK, and 2.8 from the US.

Drax's Annual Report 2016 makes it clear that converting half its units to biomass has helped it by reduce its sulphur dioxide (SO₂) and oxides of nitrogen (NO_x) emissions and thereby comply with the EU Industrial Emissions Directive (IED), which came into force in 2016. Drax would have had to close down had it not complied with the IED. This is why, back in 2013, the Secretary of State for Business, Innovation and Skills at the time, Vince Cable, praised a Green Investment Bank loan to Drax by saying the power station "would have closed down because it has to meet European rules on coal use and it wouldn't have been able to survive". [7] Drax's partial conversion to biomass has caused its emissions of small particulates (PM10) [8] to increase, and those are linked to an increased risk of heart disease, strokes and breathing problems. [9] Switching three units to biomass has thus not protected public health

– it has simply helped Drax comply with legal requirements and to avoid closure and to continue burning large quantities of coal as well as wood.

The key impacts of coal mining in Colombia, the UK and US, i.e. the countries supplying Drax's coal, are shown in detail in a [2016 report by the Coal Action Network](#).

In Colombia, villages have been evicted to make way for opencast coal mines, including the Cerrejón mine, one of the world's largest. The establishment of opencast coal mines in Colombia has been associated with militarisation and serious human rights abuses, including disappearances, massacres and assassinations. Today, more villages are facing

eviction, freshwater is being polluted and depleted, and indigenous communities are going hungry as their food sovereignty is destroyed. Human rights abuses in Colombia due to conflict between communities and coal mining companies, have been extensively documented by many organisations over many years. For example see [here](#) and [here](#). In February 2017, Luz Ángela Uriana Epiayu, a representative of the indigenous Wayúu community in La Guajira in North East Colombia who live next to the Cerrejón mine, described the impacts on her child's and other children's health: "My son *Moisés Daniel* is sick with a high fever and a dry cough, and he is having trouble breathing. This started when he was about six months old. He is still only three years old...Because of the coal

Villagers resisting eviction to make way for a coal mine in Colombia. ESMAD



dust created by Cerrejón, Moisés gets this dry cough. He needs clean air in his lungs. That's why it is hard for him to breathe, he breathes contaminated air twenty-four hours a

day...Last year, a girl of just eight months died because of the coal dust that caked her lungs."

Opencast coal mining – whether in the UK or elsewhere – has severe impacts on the local environment and landscapes, and on air quality and public health, due to the toxic coal dust. It also pollutes freshwater with toxins such as arsenic, chromium, and lead. In Scotland and elsewhere, companies are simply abandoning opencast mines when they are no longer profitable, without restoring the land, leaving a legacy of long-term pollution and environmental destruction behind.

Fos-y-Fran opencast coal mine in Merthyr Tydfil. CAN



DRAX'S INTERESTS IN GAS



In February 2017, Drax acquired Opus Energy and the interests in four new gas power stations. Each power station would have a capacity of 299 MW but would only be allowed to operate for 1,500 hours a year. This means that the combined capacity of the four plants would be equivalent to that of one 224 MW gas power station operating full-time. Two of the power stations already have

planning consent: Hirwaun Power Station in Aberdare, near Merthyr Tydfil, and Progress Power Station at Eye Airfield Industrial Estate, Mid Suffolk. Full planning applications are pending for the other two: Abergelli Power station north of Swansea and Millbrook Power Station at Rookery Pit near Stewartby, Bedfordshire. [10] The power station will use Open Gas Cycle Turbines, which will make

them less efficient than many other gas power stations, which uses Combined Cycle Gas Turbines.

Drax states in its 2016 Annual Report that it relies on future Capacity Market subsidies in order to build and operate those plants.



During 2016, Drax 'earned' £541 million in renewable electricity subsidies. [11] That's almost £1.5 million every day. Renewable electricity subsidies are financed through a surcharge on electricity bills. During the same year, Drax's profits after tax amounted to only £194 million. Without the subsidies, Drax would have accrued losses of £165.13m in 2016. The company's 2016 Annual Report admits to a "reduction in profitability year on year".

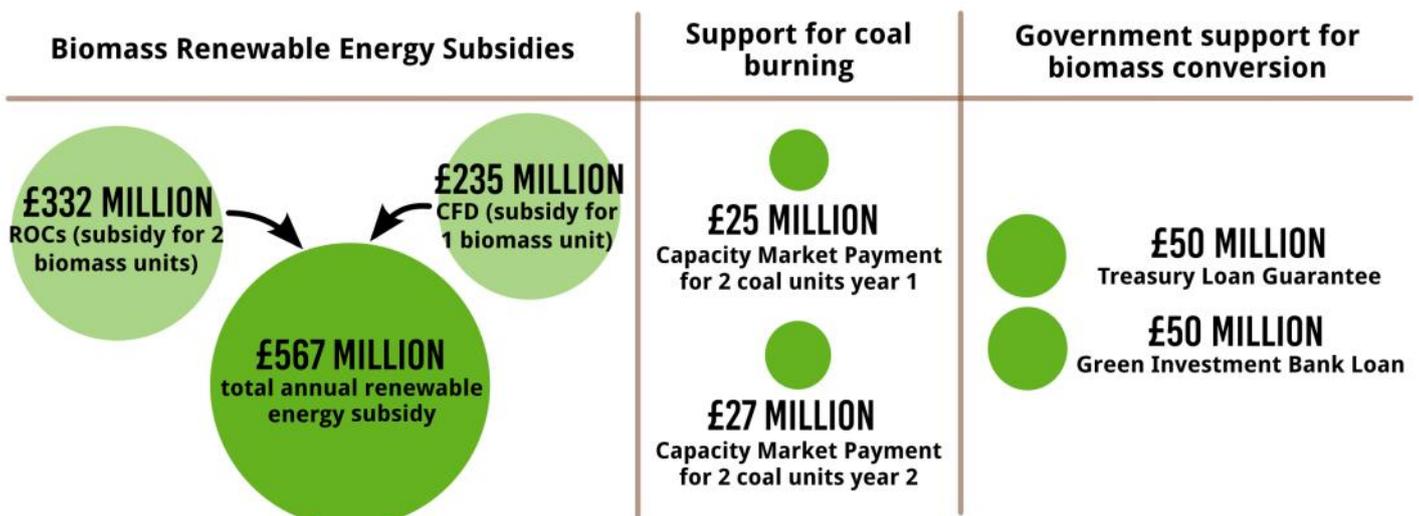
Clearly, Drax could not operate without biomass subsidies, and in future, Drax will be getting even more. [12] On top of all of this, the Government has also awarded Drax

a £22 million subsidy for burning coal in 2019/20 and a £27 million subsidy for coal burning in 2020/21. [13] Drax could win similar annual coal subsidies until 2025.

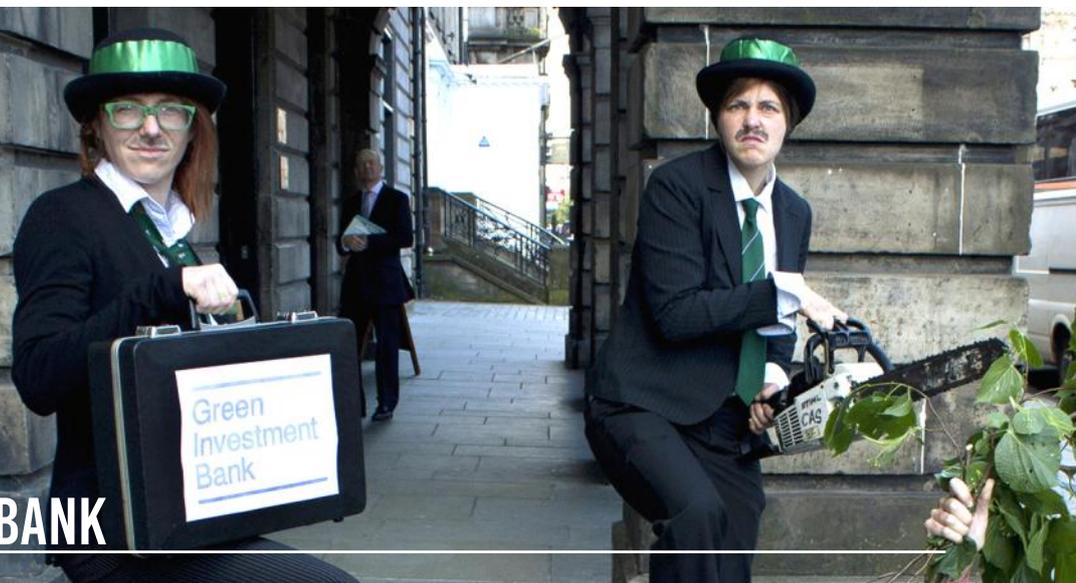
These figures do not include subsidies that Drax's pellet plants have been given in the US. Nor do they include a £50 million public loan guarantee granted by the Treasury, which states that the taxpayer will have to pay up if Drax defaults on a private loan of that amount.

Subsidising genuinely low-carbon, renewable energy such as sustainable wind and solar power makes a lot of sense. Using clean

energy subsidies to pay for a power station that burns millions of tonnes of imported wood, pellets from clearcut biodiverse forests, and millions of tonnes of coal, is unacceptable! To make matters worse, the Government has been slashing support for onshore wind and solar power.



DRAX AND THE GREEN INVESTMENT BANK



The Green Investment Bank (GIB) was set-up to help finance low-carbon projects, but its first big loan was given to Drax, which helped to seal the necessary finance for its biomass conversion. They initially loaned Drax £100 million, though Drax reduced that sum to £50 million after they procured an additional £50 million public loan guarantee from the Treasury. In effect, this loan has enabled Drax to avoid having to shut down and to continue burning both biomass and coal for the foreseeable future. This is the opposite of the type of green project that the GIB was set up to fund.

The GIB is thus directly responsible for keeping the UK's biggest polluter open and burning vast quantities of both biomass and coal.

The GIB has also funded other destructive big biomass projects (as well as unpopular waste incinerators) and continues to see biomass developments as a key part of their investment. Part of the problem is that, even though the

GIB has 5 guiding green principles, their loans only have to adhere to one of them. So if government policy says that biomass is low carbon, evidence of forest and biodiversity destruction by the pellet industry isn't enough to put the GIB off granting financial support.

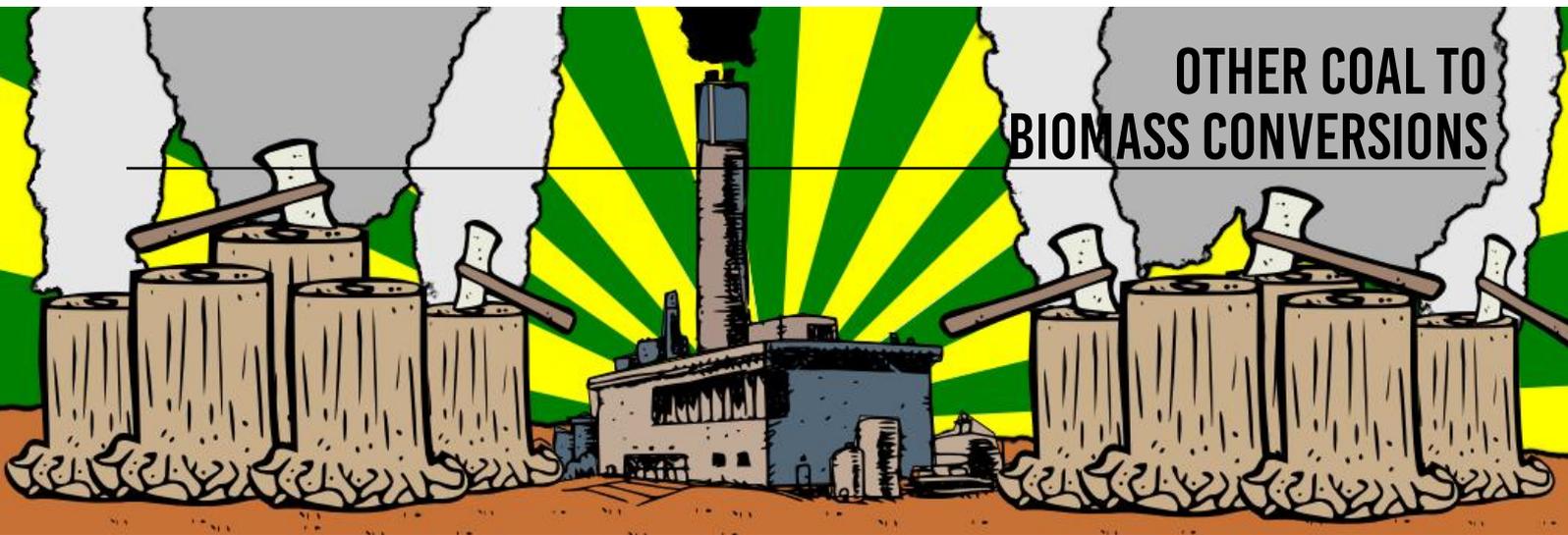
Things could get far worse in future: The GIB is in the process of being privatised. The Government's preferred bidder, the Australian Macquarie Group, is a major investor in fossil fuels. Macquarie

also owns 50% of shares in MGT Power's Teesside Biomass Plant, which will burn pellets made from 3 million tonnes of wood, most of them sourced from Drax's main pellet supplier, Enviva. Enviva has been shown to source wood from clearcut biodiverse coastal wetland forests in the southern US. [14] If the sale of the GIB to Macquarie Group goes ahead, far more investments in high-carbon, destructive projects such as Drax can be expected.



Protest at the GIB Annual Review in 2015, in Edinburgh. Biofuelwatch

OTHER COAL TO BIOMASS CONVERSIONS



Drax is currently the only UK power station that has been (partially) converted to biomass. RWE and E.ON previously converted Tilbury B and Ironbridge Power Station from coal to wood pellets, but both plants have been closed down, following major fires.

However, **Lynemouth Power Station** is also currently being converted to burning wood pellets. It had previously closed down, so once again, conversion to biomass

won't replace coal burning. Lynemouth Power Station was originally owned by Rio Tinto Alcan, who sold it to RWE. At the end of 2015, RWE sold it to a Czech energy company, Energetický a průmyslový holding (EPH). As a briefing by the climate NGO Sandbag shows, EPH is a privately-owned company without shareholders, which is buying some of the most controversial 'assets' from other energy companies, such as coal mines and coal power stations. EPH has entered into a

sourcing agreement with Enviva, to supply up to 800,000 tonnes of wood pellets to Lynemouth Power Station. Lynemouth is expected to burn up to 1.7 million tonnes of pellets a year, made from 3.1 million tonnes of wood.

Lynemouth Power Station in Northumberland. Matt Jones



REFERENCES

- [1] One tonne of wood pellets requires 2 tonnes of green wood, i.e. freshly cut wood.
- [2] forestry.gov.uk/forestry/infd-7aqdgc
- [3] drax.cdnist.com/wp-content/uploads/2017/03/Drax-Group-plc-annual-report-and-accounts-2016-Smart-Energy-Solutions.pdf
- [4] Drax's 2016 Annual Report shows that its CO2 emissions from burning biomass are 3.37% higher than those from coal burning per unit of electricity
- [5] carbonbrief.org/uk-now-burning-33-of-worlds-wood-pellet-imports
- [6] bloomberg.com/research/stocks/private/snapshot.asp?privcapId=326007767 and woodbioenergymagazine.com/blog/2016/german-pellets-fate-hangs-in-the-balance-in-louisiana/ and woodbioenergymagazine.com/magazine/2016/1216/in-the-news.php
- [7] ft.com/content/d46bfe86-b7e9-11e2-bd62-00144feabdc0
- [8] Referred to as "dust" in Drax's Annual Report 2016
- [9] who.int/mediacentre/factsheets/fs313/en/
- [10] See <https://infrastructure.planninginspectorate.gov.uk/projects/> for details of all four planning applications (two of them determined, the other two having passed the "Scoping Application" stage which precedes a full planning application)
- [11] Drax's 2016 Annual Report states that the company "earned" £536 million in Renewable Obligation Certificates (ROCs), plus £10 million from a Contract for Difference (CfD) which started on 21st December. Drax received ROCs for burning 100% biomass in two units and, until 21st December, for burning over 90% biomass in a third. 100% of the value of ROCs represent a subsidy. Since 21st December, Drax has been in receipt of a CfD for one unit which had been burning over 90% but less than 100% biomass. That CfD has replaced ROCs in respect of that one unit only (i.e. Drax will continue to be paid ROCs for the other two biomass units). A CfD is an electricity "strike price" guaranteed at a fixed level over and above the market price for electricity which Drax would have achieved in absence of a CfD. Drax's strike price is £100.- per MWh (see endswasteandbioenergy.com/article/1380984/uk-drax-confirms-cfd-strike-price). According to its 2016 Annual Report, the average price which Drax received for electricity in 2016 was £48 per MWh. This means that 52% of the CfD paid during the last ten days of 2016 – i.e. £5.2 million represented a subsidy. That subsidy plus the £536 in ROCs come to a total of £541.2 million.
- [12] Drax's subsidies will go up in 2017 because the CfD now being paid for one unit is more lucrative than the ROCs, paid for that unit until 21st December 2016 (and still paid for two other units).
- [13] Drax was awarded £21 million for two of its coal-fired units in the first Capacity Market Auction, which covers 2019/20, and £37m in the second such auction, in respect of 2020/21: <https://www.emrdeliverybody.com/Capacity%20Markets%20Document%20Library/2015%20T-4%20Capacity%20Market%20Provisional%20Results.pdf> (subsidy figure calculated by multiplying kw capacity by the generation price of £18.-) and http://www.lse.co.uk/AllNews.asp?code=x0h2znd0&headline=Drax_Wins_Contracts_Worth_GBP27_Million_But_New_Turbines_Miss_Out
- [14] banktrack.org/project/mgt_teesside_biomass_power_station