**One of the myriad revolutionary innovations brought about by the arrival of the nineteenth century industrial revolution was the steam powered printing press.**

**The resulting very rapid acceleration in output volume that this new technology facilitated, also meant a similar uplift for the owners of steam powered paper and pulp mills as they struggled to keep up with demand.**

**One of the biggest consequences of that was huge piles of sawdust and wood chippings at the already well-established sawmills. Standard procedure back in the day was to burn this waste product to provide a free source of heat for the mill operation itself. And if it had stayed that way it might have been a reasonably sustainable industry, with newly planted trees replacing the stock.**

**But it wasn’t long before more savvy mill owners spotted an opportunity to make some easy extra cash on the side by pressing their waste into wood pellets and selling them into the domestic American market to run millions of wood stoves and backyard smokers. By the end of the twentieth century that entrepreneurial endeavour had morphed into an enormous global biomass industry, with ancient forest being chopped down, and existing ecosystems being destroyed to make way for huge monoculture plantations producing timber to be shipped thousands of miles across oceans.**

**Arguably the ultimate symbol of how out of control this sector has become is the DRAX power station here in the United Kingdom, with a generating capacity of about fourteen terawatt-hours per year – enough for more than four million British homes. Several years ago the company converted four of its six enormous boilers from burning coal to burning wood pellets and received billions of pounds of government subsidy for what they claimed was now a renewable energy source. That claim is hotly disputed by scientists and environmentalists, and I made a video about it back in twenty-twenty-one. Now, new analysis has been published which finds that the North Yorkshire power plant has become Britain’s largest single source of carbon emissions, producing four times more CO2 emissions than the country’s only remaining coal fired power station.**

**So, how the heck is that OK?**

**Hello, and welcome to Just Have a Think,**

**The analysis in question comes from an energy industry thinktank called Ember, who are a well-respected outfit that I’ve quoted several times in recent videos.**

**Before I get to their data though, it’s worth a very brief recap of how we got to where we are today.**

**Back in two-thousand-and -nine, the European Union implemented something called the European Renewable Energy Directive which, alongside solar, wind and hydro power, also endorsed biomass - mainly in the form of wood pellets - as a carbon neutral energy source.**

**Largely as a consequence of that ruling, European wood consumption for energy more than doubled between two-thousand and twenty-seventeen. But because vast swathes of European forestry land are protected by very clear laws, the EU started to look further afield for its timber supplies.**

**It just so happened that around about the same time across the pond, the American industrial biomass industry was starting to slow down as operators found they simply couldn’t turn a decent profit without sizeable government subsidies in the form of supplemental green energy payments. So, an apparently symbiotic relationship came into being, with American pellets manufacturers supplying the EU in enormous volume.**

**According to US industry journal ‘Wood & Panel’, US pellet producers increased their shipments to Europe in twenty-twenty-two to a record eight-point-six MILLION metric tons, up from seven-point-four million tons in the previous year, more than seventy percent of which goes to just four countries –the Netherlands, Belgium, Denmark, and of course the UK.**

**Now, here’s the thing… the carbon content of trees is quantified by international carbon accounting rules.**

**Those rules state that the embedded carbon in living trees, that forms part of a country’s overall stored carbon inventory, has to be accounted for as a minus figure in the deficit column whenever those trees are felled. And that deficit column has to sit in the so-called ‘Land Sector’ of the country’s overall carbon inventory report, not the emissions sector. And as any decent accountant will point out, you can’t count the same stock twice, so that means even if that timber is burnt for fuel, the carbon dioxide released during combustion has to be counted as zero, because it has in theory, already been accounted for. And it’s this loophole that allows producers to treat biomass as being equivalent to zero emission technologies like wind and solar.**

**That convenient arrangement has been fought for and won by decades of political lobbying by powerful industry groups. Their strategy goes something like this.**

**Firstly, create a false equivalence between a large slow growing tree and a small, fast-growing crop like corn, which can be refined into liquid biofuels like corn ethanol. If we disregard the land use change involved in planting corn for fuel (which is not insignificant by the way) then the biomass portion of the net emissions from corn ethanol can reasonably be considered as carbon neutral because yearly crop regrowth and carbon uptake are assumed to offset the CO2 emitted by fuel consumption the year before. But large trees don’t grow back in a single year, do they? They take decades to reach a harvestable size, so carbon dioxide is being release into the atmosphere far faster than newly planted trees can suck it up again, and in the context of the climate emergency, time is very definitely not on our side. Ah yes, say the industry lobbyists, but we don’t use whole trees for biomass, we only use the crappy parts of trees that are a waste product of the paper and pulp mills. If it wasn’t burnt, they say, then it would simply be left to decompose anyway, and that would release exactly the same amount of carbon dioxide. But, again, burning timber emits CO2 into the atmosphere straight away. Decomposing trees can take decades to release their stored carbon and a good chunk of it gets absorbed into the ground anyway, to provide energy for new life. And in reality, the industry does NOT rely on mill wate for its feedstock. Environmental groups have produced voluminous documented proof from on-the-ground operatives and investigators pointing to the widespread clear cutting of timber specifically for use as pellet feedstock.**

**Well, yeah OK said the lobbyists, but as long as the quantity of timber being planted and grown is larger than the quantity of timber being cut down then, in the grand scheme of things, that must surely be sustainable land management. Nice idea on paper, but a terrible idea on a forest floor. It means that for every square metre of forest biomass producers harvest they’d have to find an even bigger area of newly planted forest somewhere else to justify calling their product carbon neutral. In reality, carbon stores in forests are decreasing on a global basis and there is simply no massive regrowth program anywhere on the planet that's large enough to compensate for the scale of biomass timber harvesting.**

**Over in EU the scientific community has been lobbying hard for constraints on the use of forest wood as a renewable fuel.**

**In fact, the European Union's own team of advisers, the European Academies Science Advisory Council, warned the European Commission back in twenty-eighteen that**

 **“the legal mandate to record forest biomass fired energy as contributing to the EU renewable energy targets has had the perverse effect of creating a demand for trees to be felled in Europe or elsewhere in order to burn them for energy thus releasing the carbon into the atmosphere which would otherwise stay locked up in the forests and simultaneously drastically reducing the carbon sink strength of the forest ecosystems”**

**And nowhere is that rather perverse phenomenon better demonstrated than in the Drax Power Staton in North Yorkshire.**

**According to the ecologist Mary Stuart Booth, from the Massachusetts-based Partnership for Policy Integrity,**

**a year's worth of pellets consumed by Drax represents the equivalent of clear-cutting a forest area extending to eighteen miles on each side.**

**Not content with shipping over existing supplies of pellets from large US producers like Enviva and others, Drax now has its own wood pellet plants in many southern US states, and in British Columbia and Alberta in Canada. The company is actively expanding its production capacity and aims to increase its annual pellet production to eight million metric tonnes by twenty-thirty.**

**This latest analysis from Ember found that the UK biomass power sector is responsible for twenty percent of this country’s overall power sector emissions while providing less than five percent of the nation’s power. Across the UK’s electricity sector, burning wood is now the second largest CO2 emitter after fossil gas.**

**Biomass has lower energy density than fossil fuels, which means it has to be burnt at higher volumes to produce the same amount of energy. The result is that burning wood emits more carbon dioxide per unit of electricity than either coal or gas.**

**The** [**Drax**](https://www.theguardian.com/business/draxgroup) **power station alone was responsible for twelve-point-one million metric tonnes of CO2 in twenty-twenty-two. Not only was that four times more than the last remaining coal fired power plant in the country, it was also more than the next four most carbon heavy power plants combined.**

**Even on the twenty-twenty-two European power emissions league table, which included some of the dirtiest lignite burning facilities, DRAX could be found at number eight in the top ten of worst emitters.**

**While the scientific debate increasingly suggests that burning biomass could actually be contributing to climate change, energy bill payers in the UK are bearing the cost.**

 **In 2022 Drax received an estimated £617m in public subsidy under the assumption that it provides emissions-free power.**

**The UK Climate Change Committee’s path to net zero relies heavily on so-called ‘negative emission technologies’ like Bioenergy with Carbon Capture and Storage, or BECCS. And Drax leans heavily on this analysis to justify its operations.**

**In fact, according to Ember, Drax is the only power sector company in the UK actually developing BECCS technology, and the company is looking to secure long-term financial commitment from the UK government to support this project.**

**We took a look at BECCS in a previous video, which you can jump back to by clicking up there somewhere. It’s a highly disputed solution to out climate predicament and the idea of it being carbon negative relies entirely on the source biomass being genuinely carbon neutral, which as we saw earlier is debatable, to say the least.**

**The authors of this report suggest that the Drax BECCS project represents a risky method of emissions removals that would come at significant economic cost to the Great British public. They argue that the technology needs to demonstrate beyond doubt that it can deliver negative emissions before any public funding is ploughed into a full-scale operation.**

**The view of the Ember team, and apparently many other industry analysts and environmental groups is that the UK and other countries should be deprioritising technologies with high emission risks and focussing instead on solutions that are already demonstrating their ability to provide low emissions generation, like wind, solar, hydro and nuclear.**

**Now these sorts of videos always seem to provoke a fairly enthusiastic burst of commentary from you good folk out there, so whether you work in the biomass industry, or you’re a campaigner against it, or even if you have no connection to it at all but you just feel the urge to express your opinion, then as always, the place to leave your thoughts is in the comments section below.**

**That’s it for this week though. A massive thank you, as always, to our amazing Patreon supporters who keep this channel completely independent AND enable me to keep ads and sponsorship messages out of your way.**

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**As always, thanks very much for watching! Have a great week, and remember to just have a think.**

**See you next week.**