**Hello and welcome to Just Have Another Think, a new bi-weekly addition to the Just Have a Think channel with a sharper focus on the ecological, environmental and social issues that we all face as a consequence of the climate emergency we’re now in the midst of.**

**Now, if like me, you read a lot of articles and watch a lot of videos about the climate, then no doubt at some point you’ll have become aware of the term Biomass, and if you listen to the many of the governments around the world, then you’ll hear it being championed as a major factor in reaching carbon neutrality by 2050.**

**But how carbon neutral is it?**

**Well, to answer that question it’s worth having a think about how Biomass came to be a thing in the first place.**

**One of the inventions that came out of the industrial revolution was the automated printing press. It notched up the speed and efficiency of printing by several orders of magnitude and it had huge benefits to society, allowing far more folks in far flung areas to be kept up to date with the latest news and read the popular books of the time. But it also massively increased the demand for paper, which by then was mostly being made from trees. That meant that owning a pulp or paper mill suddenly became a very lucrative business indeed, and one of the biggest beneficiaries of that was the already well-established sawmills. Sawmill owners had always burned their own offcuts and saw dust to heat their workshops and homes, but as the volume of this waste product began to grow rapidly, the more astute among them spotted an opportunity to make some easy extra cash on the side by pressing their waste into wood pellets and selling them as a heating fuel stock to homes in the surrounding area, especially in the United States. Essentially that was the birth of the biomass industry. Business ticked over very nicely in the US and by the middle of the twentieth century wood pellets were being used in the wood stoves and backyard smokers of millions of American families.**

**As the decades rolled on it wasn’t just the waste product of sawmills that continued to drive the industry. Developers and speculators had moved in on the market and were stripping large areas of land to make way for monocrop tree plantations specifically for fast harvesting and conversion into wood pellets in brand new, purpose-built production facilities. And they weren’t just being sold to domestic households either. They’d found their way into the boilers of some of the country’s electricity grid power generators as well. It wasn’t an altogether successful financial gamble though. Burning wood to produce electricity is expensive and many plants proved to be uncompetitive even with government subsidies in the form of supplemental green energy payments. As a result, towards the end of last century the biomass industry in America began to slow down.**

**Meanwhile over here on this side of the pond in 2009 the European Union implemented something called the European Renewable Energy Directive which alongside solar wind and hydro power, and against the very strong advice of over eight hundred scientists, was also enthusiastically promoting biomass, mainly in the form of wood pellets, as a carbon neutral energy source.**

**That directive vastly accelerated wood consumption for energy in Europe. In fact, between the year two thousand and twenty seventeen, it more than doubled. That gave the European Union a problem because most European forestry is quite heavily protected by very clear strictures. So the EU started looking for ways to make up the deficit of wood fuel production that its CO2 reduction data needed in order to keep the United Nations happy. And that’s when they fell into the warm and welcoming arms of the struggling US biomass industry who were more than happy to send their wood pallets across the Atlantic in vast quantities.**

**Some countries outside of Europe started taking a lead from the EU and began building biomass energy infrastructures of their own, most notably South Korea. Their biomass sector has been growing at a rate of over a hundred and fifty per cent per year in the last seven years, becoming the world’s 3rd largest importer of wood pellets in 2018, after the United Kingdom and Denmark. They mostly import from Southeast Asia, but they also get pellets from Russia, the USA, and even from the ancient forests of British Columbia in Canada. Michelle Connolly, who directs the British Columbia-based organization** [**Conservation North**](https://conservationnorth.org/)**, said “International demand for wood pellets is driving increased logging in British Columbia forests, including the last remnant patches of old-growth inland rainforest, a globally rare ecosystem. Logging forests that are such massive stores of carbon and harbours for biodiversity means goodbye to any hope of climate mitigation or nature preservation, because the wood pellet industry vacuums up everything in the ecosystem.”**

 **The growth of Biomass in South Korea has been driven by heavy government subsidy amounting to nearly forty percent of total renewable energy subsidies issued between 2014 and 2018, the highest among all renewable energy sources according to** [**research**](https://docs.google.com/viewer?a=v&pid=sites&srcid=Zm9yb3VyY2xpbWF0ZS5vcmd8c2ZvYzJ8Z3g6Mzc0NDJlMmQ0Nzc2MmM1ZQ) **by Seoul based organization Solutions for Our Climate.**

**Their Managing Director, Joojin Kim, said “Data from the plant operators themselves show that biomass plants can emit even more air pollution per megawatt-hour than coal plants, yet the Korean government is increasingly dependent on bioenergy to meet our renewable energy goals, stunting the growth of vital zero-emissions technologies like solar power.”**

**International carbon accounting rules state that carbon losses from forest harvesting have to be reported in the land sector section of the carbon audit for the country where they were felled. That means harvested forest wood cannot be reported as a CO2 emission, even if it does get burnt. Instead, it gets counted simply as a reduction in that country's forest carbon uptake, and because that number is then already recorded in the overall report for that country, the rules say that energy sector emissions for CO2 from burning the resulting biomass have to be counted as zero, otherwise the carbon loss would be counted twice. That means the producers can treat biomass as being equivalent to zero emissions technologies like wind and solar.**

**One of the biggest windfall bonuses that this skewed regulation brings for South Korea is that their utilities are often able to co-fire wood pellets with coal in their older power plants, which allows those plants to collect renewable energy subsidies.**

**South Korea already has some of the most polluted air in the world. Last year their government passed** [**emergency powers**](https://edition.cnn.com/2019/11/29/asia/south-korea-coal-plants-pollution-intl-hnk/index.html) **to combat what it called the ‘social disaster’ of air pollution, leading to the temporary closure of a quarter of its coal-fired power plants.**

**Here in the EU the scientific community has been lobbying hard for constraints to be put 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 then EU President Jean-Claude Juncker in January 2018 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”**

**Now of course the Biomass industry takes great exception to this. In recent years they’ve pointed out all sorts of reasons why burning trees is a perfectly benign activity. So, it’s probably worth taking a quick look at their arguments.**

**Their first strategy was to suggest that a large slow growing tree had equal carbon neutrality to a comparatively small and extremely fast-growing corn plant. Corn can be refined into liquid biofuels like corn ethanol, with the biomass portion of the fuels net emissions being considered as carbon neutral, because yearly crop regrowth and carbon uptake are assumed to offset the CO2 emitted by fuel consumption the year before. The biomass industry argued that it's exactly the same principle with wood pellets. Environmental scientists point out though, that even the most optimistic proponent of tree harvesting for energy couldn't realistically justify this claim, because trees obviously take decades to grow, and we haven’t got decades to wait.**

**The second suggestion from the Biomass industry was that they only use the tatty, useless parts of trees that get left over as mill waste to make wood pellets. They say this scrap stuff would only be left to decompose anyway, so burning it to make fuel wouldn't result in any net increase in overall CO2 emissions. But those environmental scientists came back again, this time with some rather inconvenient documented proof from on-the-ground operatives and investigators showing that there was in fact widespread clear cutting of timber specifically for use as pellet feedstock. They also observed that, no matter where the source timber comes from, burning wood emits CO2 into the atmosphere immediately whereas leaving the wood scraps on the floor to decompose allows their carbon content to oxidise into the atmosphere extremely slowly, over the course of many years, so burning them still speeds up the release of carbon dioxide just at a time when the world needs to slow that process right down to a grinding halt.**

**To counter that one, the industry claimed that as long as they were planting and growing more timber than they were cutting down then they’d be harvesting sustainably. Which, according to the scientists is also a fallacy. In order to justify calling their product carbon neutral, then for every square metre of forest the biomass producers cut down they would have to find an even bigger area of newly planted forests somewhere else. In reality, carbon stores in forests are decreasing, not increasing on a global basis and there is simply no massive regrowth program anywhere on the planet that's large enough to compensate for this allegedly sustainable timber harvesting.**

**Now just for full disclosure, I don’t speak from a country with a sparkling track record of carefully managing biomass combustion either. The UK is a very enthusiastic proponent of shoehorning as much of this officially carbon neutral fuel into our energy mix as possible. Our largest power station, Drax, which has a capacity of four thousand megawatts supplying more than four million homes across the country, now runs four of its six enormous boilers on biomass and receives the best part of a billion pounds a year in renewable energy subsidies for doing so.**

**Mary Booth, the director of the US-based Partnership for Policy Integrity (PFPI), an organization that has been fighting these international legal loopholes for many years, said in an interview in 2020**

**“The big lie that burning forests for fuel is carbon neutral has taken hold around the world, signalling capture of renewable energy policy-making by the industrial forestry complex. We hope the courts will recognize that because burning wood for energy threatens forests, air quality, and the climate, governments should not promote it as zero-carbon renewable energy.”**

**If all this strikes you as a bit bonkers, then take a few minutes to write to your elected representative to find out what they know about it, and whether they’re campaigning in government on your behalf.**

**Just a little bit more midweek food for thought for you.**

**Thanks very much for listening, and I’ll see you on Sunday.**