Negative Brief: Wood Pellets

By “Coach Vance” Trefethen

AFF Plan stops export of wood pellets (used for heating) to Europe due to biomass burning and its impact on climate change. Note: In this case, the term "carbon debt" refers to the burning of wood (which releases carbon into the atmosphere) thus incurring a "debt," a negative impact on the world environment if atmospheric carbon is a bad thing. That "debt" is paid back when trees are regrown to replace the wood that was harvested and burned, because trees remove carbon from the air (they absorb carbon dioxide (CO2) and emit oxygen). If the regrowth of trees equals or exceeds the wood that was burned, then the "debt" is paid and there is no net carbon impact. However, AFF is concerned about the gap in time during which the "debt" occurs. Burning wood today emits carbon into the atmosphere today. Maybe 50 years from now, all those trees will have been replanted and regrown, so if atmospheric carbon is bad, then during those 50 years it will be harming the earth's climate until the debt is paid by the new trees.

Note that there are two possible places where wood pellets might be polluting. One is in the manufacturing and processing stage in the US, where the wood is compressed and treated to manufacture the pellets. The second is in Europe where the pellets are actually burned to obtain energy.

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Negative: Wood Pellets

INHERENCY

1. Existing emissions regulations solve

Status Quo laws are being applied to wood pellet producers, and they remove 95% of the emissions

Eric Miller 2021. (journalist) WIRED 18 Nov 2021 "How 'Green' Are Wood Pellets as a Fuel Source?" (accessed 17 Jan 2023) https://www.wired.com/story/how-green-are-wood-pellets-as-a-fuel-source/ (brackets added)

In February, Drax was [fined $2.5 million by Mississippi state regulators](https://www.bbc.com/news/uk-england-york-north-yorkshire-56130166) for violating emissions limits for volatile organic compounds produced during the processing of wood pellets. The firm accepted the fine and promised to install new air pollution control equipment to fix the problem at the Mississippi plant. "We take our environmental responsibilities seriously and we are committed to complying with all local and federal regulations,” a Drax spokesperson [told the BBC](https://www.bbc.com/news/uk-england-york-north-yorkshire-56130166). "The safety of our people and the communities in which we operate is our priority.” Enviva agreed to do the same thing—add anti-pollution devices—to a North Carolina plant after agreeing to a settlement from [a 2019 lawsuit filed by the Southern Environmental Law Center](https://www.southernenvironment.org/news/legal-challenge-forces-n-c-wood-pellet-facility-to-install-pollution-controls/), a legal advocacy group based in Charlottesville, Virginia, and two other advocacy groups. The lawsuit alleged that North Carolina environmental officials had failed to properly scrutinize Enviva’s operating permit. In June, state officials ordered the company to reduce volatile organic compound emissions by 95 percent at a second Enviva wood pellet facility in North Carolina, according to a report in [The Fayetteville News and Observer](https://www.fayobserver.com/story/news/2021/07/04/faison-north-carolina-enviva-wood-pellets-filter-pollutants/7827502002/).

2. Carbon capture & storage (CCS) solves

Carbon is captured at pellet-burning sites. Example: Drax company will soon have negative total carbon emissions

Eric Miller 2021. (journalist) WIRED 18 Nov 2021 "How 'Green' Are Wood Pellets as a Fuel Source?" (accessed 17 Jan 2023) https://www.wired.com/story/how-green-are-wood-pellets-as-a-fuel-source/ (brackets added)

[Head of media & public relations at Drax, Ali] Lewis says Drax plans to install [biomass energy with carbon capture and storage](https://www.drax.com/about-us/our-projects/bioenergy-carbon-capture-use-and-storage-beccs/) (known as BECCS) technology at several new proposed plants in the UK and Europe. The first BECCS unit at Drax could be operational in 2027, with a second running in 2030. The idea is to capture carbon dioxide emissions from the pellets before they escape to the atmosphere, turn the gas into a liquid form of CO2, and then pipe it to a permanent storage site at the bottom of the North Sea, according to Drax. Lewis says each new BECCS plant will capture four metric tons of CO2 per year. “The combined eight metric tons will make Drax’s carbon capture project the largest CCS project in the world,” Lewis wrote. “This will also mean Drax will be capturing more CO2 than is emitted across its entire operations, creating a negative carbon footprint for the company.”

HARMS / SIGNIFICANCE

1. Carbon impact depends on the species of trees

Link: Most US wood pellet exports are from trees harvested in the South

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

A majority of U.S. wood pellets, particularly utility pellets intended for export, are produced in the U.S. South. Accordingly, this paper focuses on producers in the U.S. South because they account for most exports. The predominance of the U.S. South as a producer and exporter of utility pellets is likely due to, among other reasons, that region’s sizeable timber plantations, history of wood producing industries, existing infrastructure, limited forest protections, relatively low wages, and the relative proximity of U.S. Southern ports to Europe. The U.S. Pacific Northwest, despite containing large timber resources and being closer than the U.S. South to the growing markets of South Korea and Japan, is not currently a major producer or exporter of wood pellets.

Impact: No carbon impact if Southern species are used

Eric Miller 2021. (journalist) WIRED 18 Nov 2021 "How 'Green' Are Wood Pellets as a Fuel Source?" (accessed 17 Jan 2023) https://www.wired.com/story/how-green-are-wood-pellets-as-a-fuel-source/

[Bob Abt](https://cnr.ncsu.edu/directory/robert-c-abt/) has been researching the ecology and economics of southern forests for more than 40 years, and is an emeritus professor of natural resources at North Carolina State University. He says that, under the right economic and environmental conditions, the carbon footprint of wood pellets can be smaller than coal’s. Making this equation work—so that the amount of carbon being burned for electricity today is offset by future tree growth—has a couple of requirements. First, Abt says, owners of timberland have to harvest fast-growing trees, such as the pines or mixed hardwoods found in the South. The same process would not work as well in forests in New England or the Pacific Northwest, which take much longer to regenerate.

2. Insignificant harm of CO2

CO2 growth is insignificant and so are its impacts

Alex Epstein 2013 (Founder, Center for Industrial Progress) “The Moral Case for Fossil Fuels The Key to Winning Hearts and Minds” <https://industrialprogress.com/wp-content/uploads/2013/10/The-Moral-Case-for-Fossil-Fuels.pdf> (accessed 11 July 2022)

And while fossil fuel opponents tend to exaggerate the scale of CO2 emissions—in the last 150 years, CO2 has gone from .03% of the atmosphere to .04%—when consumers use our products it does have some impact on the atmosphere and thus the climate system. Although the average temperature around the world has only increased by a historically unremarkable 1 degree Celsius over the past 150 years, CO2 emissions likely contributed some of that (mild) warming. Is this a significant problem—let alone the epic scale problem that would justify restricting peoples’ ability to use cheap, plentiful, reliable energy? We believe that while doomsday speculation says yes, the evidence says: no. It is an empirical fact that the climate has becoming safer—in large part thanks to increased energy production. According to the EM-DAT (the authoritative International Disaster Database), overall climate-related deaths are down 98% in the last 80 years.

3. "Carbon debt" depends on how it's calculated

A standing forest contains massive carbon that has already been extracted from the air, locked in the trees, i.e. a "carbon credit." Burning it simply reduces the "credit" to zero, it doesn't create a "debt"

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) (ethical disclosure: Ireland in this context is describing ways of looking at wood pellets in terms of carbon "debt" or not. He discusses both views and does not take a position on which he supports) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

Under the second option, the carbon removed from the atmosphere by these trees would in essence create a carbon credit. Thus, the burning of biomass would be returning to the atmosphere carbon that the trees had previously absorbed from the atmosphere. The credit would be fully eroded once these trees are harvested, turned into wood pellets, and burned for energy. Theoretically, this would achieve net zero emissions over the entire—and lengthy—period.

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SOLVENCY

1. Export elsewhere besides Europe

Plan only stops exports to Europe. Exports will go instead to S. Korea or Japan, so no net reduction in emissions

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The United States, with its sizeable forests and timber plantations, reacted by intensifying wood pellet production for export, primarily to the United Kingdom and several EU member states. In 2021, U.S. wood pellet exports reached $1 billion for the first time. Wood pellet consumption is also rising in Asia with South Korea and Japan, driven by their own climate change policies, incentivizing rapid recent growth in imports.

Exports to Japan will definitely increase

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

Because of these developments and dynamics, there has been a quickening of Japan’s wood pellet imports (figure 8). Between 2012 and 2021, Japan’s wood pellet imports increased by a factor of 43 to 3.1 million metric tons.63 In 2021, Japan was the sixth largest importer of wood pellets globally; in 2012 it was the twelfth largest importer. The largest suppliers of Japan’s wood pellet imports in 2021 were Vietnam (52.8 percent) and Canada (34.0 percent).64 Like South Korea, Japan imported a tiny amount from the United States (27 thousand metric tons) in 2021, but this is expected to increase.

2. No other alternatives

Europe is using wood pellets because they have no other "cleaner" alternatives

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

Wood pellet consumption in the EU15 has grown robustly because of EU regulatory and financial support.16 Partially based on a United Nations Framework Convention on Climate Change and Intergovernmental Panel on Climate Change biomass carbon accounting methodology, this has entailed, most notably, designating wood pellets as a renewable energy; counting wood pellet combustion carbon emissions as zero; and providing subsidies to consumers and producers of wood pellets. Reportedly, the EU has provided such support and special carbon measurement calibrations because of the inordinate difficulty of otherwise attaining their climate decarbonization pledges. The current limitations on installed generation capacity of the classic renewable energies of wind, solar, hydro, and geothermal—and the diminishment of low-carbon nuclear power, particularly in Germany—make this particularly challenging.

3. More study needed

Amount of controversy over wood pellet emissions proves we need a lot more study before making any policy decisions

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

Interlocutors especially disagree on how to measure wood pellet life cycle carbon emissions. Consequently, more attention may be given to whether global carbon emission totals are accurately counting wood pellet related land use emissions that are not being counted as combustion emissions. Moreover, the proportion of wood pellet feedstock that comes from trees felled purely for transformation into wood pellets and the proportion that comes from forestry residues, remains debated as there is currently limited definitive information on these proportions. Policy analysis might also benefit from more discussion on the impacts of wood pellet production on biodiversity, soil health, and air quality. Thus, due to the complexity, myriad needed assumptions, and relatively small industry size compared to fossil fuels, deliberations on the environmental impacts of wood pellets have not yet reached a crescendo. Discord will thus likely persist on whether wood pellets should continue to be a feature of the climate change strategies of the EU, United Kingdom, Japan, South Korea, and others, and of U.S. forest product exports.

DISADVANTAGES

1. Urban sprawl

Link: Wood pellets create incentive to maintain forest land that would otherwise turn to housing and shopping malls

Eric Miller 2021. (journalist) WIRED 18 Nov 2021 "How 'Green' Are Wood Pellets as a Fuel Source?" (accessed 17 Jan 2023) https://www.wired.com/story/how-green-are-wood-pellets-as-a-fuel-source/ (brackets added)

The second thing is making sure landowners who sell wood to pellet companies continue to keep their land in production as working forests. [NC State Univ. professor of natural resources, Prof. Bob] Abt says that as the demand for wood-to-energy increases, so will prices for the wood. That will serve as an incentive for timber owners to keep their trees growing until maturity, rather than turning that same land into pastures for livestock grazing or farmland for seasonal crops, or selling it to housing developers. A [2017 study by researchers at the Oak Ridge National Laboratory](https://www.osti.gov/servlets/purl/1399931) found that sprawl from housing tracts and shopping malls could also endanger those forests. “Urbanization—currently the greatest cause of forest loss in the Southeastern US—is more likely to expand into forest landscapes if forest landowners lack adequate income generating opportunities for their wood,” the report stated.

Link: Forest land close to cities removes carbon from the atmosphere

Albert T. Han, Thomas Daniels, Chaeri Kim 2022 (Han - Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea. Daniels - epartment of City and Regional Planning, University of Penn. Kim - Department of City and Regional Planning, University of Penn) "Managing urban growth in the wake of climate change: Revisiting greenbelt policy in the US" January 2022 LAND USE POLICY (accessed 17 Jan 2023) https://www.sciencedirect.com/science/article/pii/S0264837721005901

[Greenbelts](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/greenbelt) are large areas of open land close to cities and suburbs and are found in several countries, including the US. The basic purposes of a greenbelt are to limit the extension of urban growth into the countryside as well as to protect and preserve farmland, forestland, and natural areas. Recently, the value of greenbelts has been recognized for providing carbon sinks to store and sequester carbon.

Impact: Turn the harms, they get worse with an AFF ballot

If atmospheric carbon is bad as AFF tells you, it gets worse after an AFF ballot.

2. Coal

Link: The alternative to wood pellets is coal. They're using wood pellets to transition away from coal

Robert Ireland 2022 (Environment and Trade Analyst. U.S. International *Trade Commission*, Division of Natural Resources and Energy) May 2022 "The Rise of Utility Wood Pellet Energy in the Era of Climate Change" (accessed 17 Jan 2023) https://www.usitc.gov/publications/332/working\_papers/wood\_pellets\_final\_052722.pdf

Drax Group (Drax), a British utility that is incrementally shifting from coal burning to wood pellet burning at its electricity generating power plants, owns or has interests in 17 pellet mills in the U.S. South and Western Canada, and exports the product from the United States and Canada to the United Kingdom.

Link: Wood pellets release no net carbon, even without Biomass Energy Carbon Capture & Storage (BECCS), because trees are replanted

William Strauss 2021 (president of FutureMetrics LLC, consulting firm specializing in global pellet market analysis) 16 Nov 2021 " A carbon negative future? How switching from coal to wood pellets can remove CO2" (accessed 17 Jan 2023) https://www.canadianbiomassmagazine.ca/a-carbon-negative-future-how-switching-from-coal-to-wood-pellets-can-remove-co2/

Wood, on average, is about 50 per cent carbon. One tonne of carbon atoms produces 3.67 tonnes of CO2. The 283,000 tonnes of carbon in the carbohydrate-based pellet fuel releases about 1,040,000 tonnes per year of CO2 in combustion. Without BECCS, that CO2 is released into the atmosphere. The new growth in the managed timberlands absorbs all of that and more, since only 40 per cent of the annual new growth becomes pellets. Even without BECCS, the atmosphere sees no net increase in CO2 from the combustion of pellets that are sourced, provided the total stock of forest resources in the mill’s supply region cannot be depleted.

Link: Trees are replanted, coal isn't, so the "Carbon debt" of wood is always better than coal

Even if it takes a while for trees to be replanted (that's the carbon debt), at least the "debt" gets paid when they are replanted. Nobody can "replant" coal. Even if wood pellets aren't perfect, they're better for solving emissions than coal is, and that's what wood pellets are replacing in the Status Quo.

Impact: Turn the harms, they get worse with an AFF ballot.

To whatever extent carbon emissions are bad, if you believe the AFF case, they get worse with an AFF ballot because we'll use more coal.

3. World hunger

Link: AFF claims to reduce atmospheric CO2

We don’t think they will, but they keep insisting, so they’ll have to accept this disadvantage.

Link: Increased CO2 would grow more crops that could feed more of the growing world population

Alex Nicolson and Dr. Lars Schernikau 2017. (Alex Nicolson M.Sc. Mech Eng., MBA, P.E Technical Writer, Burbank, CA. Dr. Lars Shernikau, MBA, BSc Finance Entrepreneur, Commodities Trader, Switzerland) CO2 Beneficial to Earth, Impact on Global Warming Vastly Exaggerated, Apr 2017 (accessed 11 July 2022) <http://www.dialogi.su/storage/b/2017/06/05/2017-05-Nicolson-Schernikau-Benefits-of-CO2-Coal-Asia-mail.pdf>

The rising stars of tomorrow’s industrial world are now being forced to comply with unrealistic targets and spend their money on CO2 mitigation – while in fact it would be urgently needed to develop their country’s infrastructure, improve the health system and reduce environmental pollution of the air, water and soil. At the same time, higher CO2 level will increase crop output and help feeding growing human and animal population.

Link/Brink: Hundreds of millions are on the brink of starving globally if we don’t dramatically increase food production

Dr Tammy Beckham 2015 (DVM, Ph.D., Dean of the Kansas State University College of Veterinary Medicine) testimony before the House Committee on Agriculture 4 Nov 2015 <https://www.govinfo.gov/content/pkg/CHRG-114hhrg97543/html/CHRG-114hhrg97543.htm> (accessed 11 July 2022)

In addition to understanding the importance of the agricultural industry in the U.S. and its role in supporting national security, it is also important and critical that we understand the role of global food security in securing the homeland. Currently, 870 million people around the world do not have access to safe and nutritious food in a sufficient supply. By the year 2050, the global population is expected to exceed 9 billion people. Nearly all of the growth is expected to occur in developing countries. Feeding 9 billion people will demand that food production is increased by 70% and more specifically, that food production in the developing world double.

Impact: Food shortages, political instability, social unrest, extremism, conflict.

Dr Tammy Beckham 2015 (DVM, Ph.D., Dean of the Kansas State Univ College of Veterinary Medicine) testimony before the House Committee on Agriculture 4 Nov 2015 (accessed 11 July 2022) <https://www.govinfo.gov/content/pkg/CHRG-114hhrg97543/html/CHRG-114hhrg97543.htm>

Meeting these growing demands will be critical if we hope to maintain political stability in increasingly volatile regions across the globe. Food insecurity and scarcity is well known to be one of the most potent drivers of political instability and social unrest. In fact, according to the Lugar Center, “global food security has both foreign policy and national security implications for the U.S. Diplomatic efforts to maintain peace and stability are much more difficult whenever there are food shortages contributing to extremism and conflict”. Perfect examples of this have been seen throughout the Middle East and North Africa, where countries import over half of their food.