RACHEL CARSON COUNCIL

Supply Chain and Biomass

Factsheet

The wood pellet industry is often marketed as “renewable,” yet every stage of the supply chain, from forest harvesting to overseas shipping to combustion, generates significant carbon emissions and environmental harm. Logging degrades forest ecosystems, pellet processing requires intensive fossil fuel use, and transatlantic transport magnifies total emissions. When the pellets are finally burned, smokestacks release more carbon dioxide per unit of electricity than coal. The cumulative impact reveals a fuel source that emits more greenhouse gases over its lifecycle than the fossil fuels it seeks to replace.

Key Facts

Natural Gas

Pellet mills are powered by natural gas and large industrial dryers, producing substantial upstream CO_2, methane, and volatile organic compounds (VOCs). [1]

Transportation

Transporting pellets by truck to ports and by ship to Europe emits millions of tons of CO_2 annually, making transport emissions higher than for coal on similar routes.[2]

Emissions

When burned in power stations, wood pellets emit 10–25% more CO_2 per kilowatt-hour than coal, due to lower energy density and higher moisture content.[3]

Carbon Dioxide

There are 780 kilograms of uncaptured carbon dioxide emissions for each megawatt-hour of power after burning wood pellets.[4]

Actions for Policymakers

- Direct EPA and DOE to use a comprehensive lifecycle analysis for all biomass-related permitting and subsidies.
- End taxpayer-funded subsidies that support pellet production, export, and combustion.
- Require utilities receiving federal funds to prioritize zero-carbon energy sources instead of biomass.
- Launch oversight hearings on pellet industry emissions and forest loss.

Our Recommendation

Congress should require full lifecycle greenhouse gas accounting for biomass energy and remove wood pellets from all federal definitions of “renewable energy” unless the industry demonstrates net climate benefits, an outcome current science shows it cannot meet.

Results

Taking these actions would: Reduce greenhouse gas emissions from the power sector by eliminating a fuel source that emits more CO_2 than coal; Protect Southeastern forests that currently provide of thousands of dollars in ecosystem services; Prevent annual upstream and transport emissions; And redirect federal funding toward genuinely clean, low-carbon energy that aligns with U.S. climate commitments.

Footnotes

1. Brack, D., Birdsey, R., & Walker, W., Greenhouse Gas Emissions from Burning US-Sourced Woody Biomass in the EU and UK (Chatham House & Woodwell Climate Research Center, 2021).
2. Robinson, E., The Climate Impact of Burning Wood for Energy (Land and Climate Review, 2020).
3. Tran, H., Juno, E., & Arunachalam, S., “Emissions of wood pelletization and bioenergy use in the United States,” Renewable Energy 219 (2023).
4. Rachel Carson Council, Drax: Destroyer of Forests (Rachel Carson Council, 2025).