Environmental Paper Network
BIOMASS ACTION NETWORK

Cofiring is not abatement

Explaining the 'abatement" issue

A potential step forward in doing away with coal-fired energy was hailed in the key Decision of Glasgow COP 26 when a commitment was made to "phase down unabated coal power". This undertaking was repeated in the first global stocktake in Dubai last November[1].

What is abatement?

The OECD has considered what constitutes abatement when issuing export credits and states that "Only carbon capture, utilization, and sequestration technology, or "CCUS," qualifies as abatement"[2].

CCUS is widely critiqued on the basis that it is not developed and operational at scale despite efforts by proponents that leave questions over feasibility, is expensive and consumes a huge amount of energy to achieve, and permanence of such storage (sequestration) is dubious.

But there's more... we are faced with expansion of the definition of "abatement" on the part of some countries, to include co-firing other fuels (such as biomass) with coal in existing coal-fired generators.

This is a controversial and dangerous interpretation. It is outside of widely accepted norms and relies on a misapprehension about emissions from burning biomass for energy that is perpetrated by flawed carbon accounting methodology of the UNFCCC. Briefly, carbon emissions from combustion of fossil fuels for energy generation appear in the energy sector accounts, but the very real emissions from combustion of biomass are left out.

OVERVIEW

"Abatement" is being hijacked

Some countries are expanding the definition of "abatement" to include co-firing other fuels (such as woody biomass) with coal in existing coal-fired generators

Beware of this interpretation

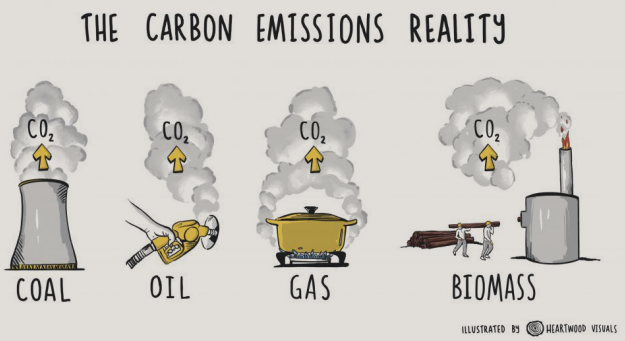
This interpretation will increase emissions, destroy forests, and damage communities by alienating their land and resources, while it entrenches the use of coal.

Co-firing woody biomass with coal *is not* abatement

Biomass power is unabated power just like coal is.

Carbon emissions from burning biomass

Forest biomass is a carbon-based energy source. Burning wood (biomass) for energy in huge volumes releases significant amounts of greenhouse gases (GHG) into the atmosphere.



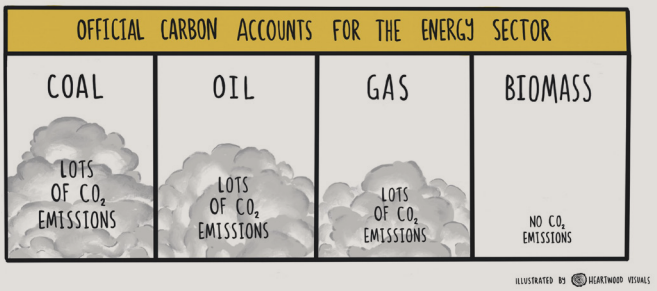
In fact, burning wood for energy produces at least as much CO2 as burning coal per unit of energy produced, and usually more[3].

Yet energy sector carbon accounts do not show biomass emissions

The carbon emissions released when biomass is burned to produce energy are not reported nor accounted for in the energy sector accounts of the country where the biomass is consumed.

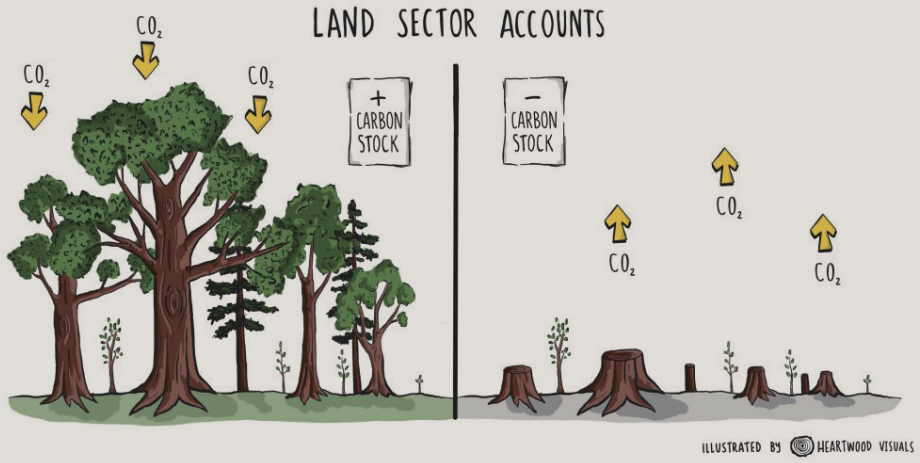
This is in stark contrast to how emissions are recorded for all fossil fuel energy sources, which are accounted for in the energy sector of the country where they are consumed.

Treating biomass differently creates a false impression of zero emissions for biomass energy, in comparison to emissions from burning fossil fuels.



Policy makers and those who don't know about this carbon accounting anomoly are misled into thinking that replacing 5-10% of coal with woody biomass will reduce emissions by 5-10% simply because they're left off the books for energy generation. It's not true, it's an artefact of the accounting system. But this is what they are calling abatement!

Do the emissions get accounted for, and if so, where?



Sort of... not really

Allegedly these are covered in the accounts of the land and forests sector, but in reality the emissions attributable to biomass combustion for large-scale energy generation are never specifically identified. Land and forests accounting is notoriously inaccurate, plagued with scams that understate the emissions, and frequently does not cover all the activities. The sum total of emissions minus sequestration for whatever made it to the books is all we see.

Only the overall change in carbon stock appears on paper, the emissions from forests burned for energy are never shown.

As if this isn't bad enough, it gets more confusing and less attributable to a country that imports and burns biomass for energy – as is the case in Europe, the UK, Japan and South Korea. When the forest biomass has originated in another country, which is increasingly the case as international trade increases to fill ever rising demand, then it is the producing country that must be responsible for the emissions in their land and forests sector, and not the consuming country that burnt the biomass and used the energy.

Using this accounting trickery, the UK has determined that the appropriate means to guarantee the closure of unabated coal by 2025 will be to set a new emissions intensity limit to generating units. This is broadly set at the emissions intensity of an unabated gas generator, and it is recognised that co-firing with solid biomass at relatively high levels is one way that generators might be able to meet the emissions intensity limit.

Japan is also embracing co-firing biomass with coal as an abatement measure, as are Indonesia and Vietnam. Some co-firing is also in place in Europe and other places.

What about claims to carbon neutrality?

Claims to carbon neutralty are increasingly recognised as untenable – a false solution. When the woody biomass is cut and burned a carbon debt is created. It will take as long as it took a natural forest to grow for it to regrow to capture the carbon back again. That is way outside the Paris Agreement timeframes for action and in the meanwhile ongoing combustion of biomass in huge quantities is exacerbating the climate crisis.

Do the forests ever regrow? Unlikely since the plan is to keep using them daily as feedstock. To secure an ongoing supply of dedicated energy wood, countries like Indonesis are converting forest ecosystems and other natural ecosystems to monoculture “energy” plantations. This process emits a lot of GHGs as well as destroying biodiversity. Monculture plantations contain significantly less carbon than the natural eccosystems they replace – that is, most of the carbon lost to atmosphere is never re-sequestered.

In the case of Indonesia it is calculated that a minimum of 2.3million ha of energy forests will be required to fulfill the government mandate to co-fire in all 52 locations comprising 107 government owned coal generating units[4].

Additional problems are the carbon opportunity cost of logging and burning forest biomass, meaning that foregone sequestration during the period of carbon debt is another adverse impact on climate. Then there are the emissions of transport and production of wood pellets.

Clearly co-firing woody biomass with coal is not abatement. The UNFCCC should follow the lead of the OECD and rule it out.

References

1. paragrahs 28-29 and 68 of 1-/CMA.5
2. https://home.treasury.gov/news/press-releases/jy0427
3. Booth, M. S. 2018. Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy. Environmental Research Letters 13:035001.
4. https://environmentalpaper.org/2023/11/co-firing-with-biomass-in-indonesia-debunking-emission-reduction-claims/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Time to go beyond burning forest biomass

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