

The Damaging Impact of Biomass Power Generation on our Climate

Today's Opposition Day Debate (1st May 2019) will focus on the need for stronger action to tackle climate change. This briefing outlines ShareAction's recent research on biomass energy generation which highlighted key issues around how its use and consideration as a renewable energy source is inappropriate.¹

The debate today will focus on the need to tackle climate change and for the Government to act urgently to ensure the world remains on track to avoid more than 1.5 °C of warming. A rapid and far reaching transition is needed if we are to meet the required 45% fall in global emissions from 2010 levels by 2030, and for us to shift to a "net-zero" carbon society by 2050.² This short paper is designed to increase understanding of the complex issue of biomass that is derived from wood and used in the energy sector, amongst institutional investors and banks.

The problem with biomass

Biomass is often considered a renewable or sustainable form of energy generation, but this is wrong. Biomass urgently deserves greater attention because the climate impacts can be more significant than for coal. The financing of new biomass infrastructure would lock in future carbon emissions, which must be avoided. Key problems with biomass energy generation include:

1. The carbon emissions from burning wood are higher than coal when measured at the point of combustion in power stations. Data from Drax's 2017 annual report shows that emissions rates for wood pellets are 3% higher than for coal.³

2. Trees take many decades to regrow and reabsorb these carbon emissions. Therefore woody biomass is not 'renewable' or 'carbon neutral' over the timescale required to meet the goals of the Paris Agreement and will hinder, not help, the objective of reaching carbon neutrality by the middle of this century.

3. There is a flawed assumption that biomass is a carbon neutral fuel and carbon emissions related to the combustion of biomass have been ignored by utilities companies and policy makers. This is the basis for utilities companies making misleading statements about carbon emissions savings of biomass compared to coal: Drax states that the company 'saved around 86% of carbon emissions compared with the coal benchmark', however this only accounts emissions from their supply chain.⁴

4. The growth of the biomass power sector is unsustainable. As demand for biomass has risen in the UK, feedstocks have become more carbon intensive, with virgin biomass becoming the dominant feedstock over waste.⁵ The UK is now the largest importer of wood pellets globally, accounting for 40% of global trade.⁶ International wood pellet trade is expected to increase by 250% over the next decade.⁷

5. Forestry sustainability criteria are not designed to protect and maintain the carbon stocks of forests, but to ensure a future supply of wood are available for operations of biomass power plants.⁸

6. Trees and forests are critical in mitigating climate change. According to the IPCC '1.5 C pathways typically rely on [...] afforestation and reforestation [...] to drawdown CO₂ emissions on excess of the carbon budget.'⁹

40 scientists have also signed a letter stating that 'protecting, and sustainably managing the forests we already have, and restoring the ones we have lost, is the best use of trees in limiting climate change' and that 'the "natural" technology of forests is currently the only proven means of removing and storing atmospheric CO₂ at a scale that can meaningfully contribute to achieving carbon balance'.¹⁰

“ Biomass urgently deserves greater attention because the climate impacts can be more significant than for coal: financing of new biomass infrastructure would lock in future carbon emissions, which must be avoided ”

What should the Government do?

ShareAction is clear that biomass should not receive renewable energy subsidies or deflect support from genuinely low-carbon sources of power. The Committee on Climate Change has recommended that the UK Government 'do not provide further policy support [...] to large scale biomass power plants that are not deployed with CCS technology.'¹¹ MPs have tabled an Early Day Motion asking for the Government to 'end new subsidy for large-scale import-dependent biomass under the Contracts for Difference, and to remove subsidy for biomass under the Renewable Obligation scheme; and further calls on the Government to instead direct funding towards renewable, low-carbon electricity sources including solar and wind.'¹²

1. The Government should make a firm commitment that, due to the severe climate impacts of biomass, it will not provide any new financial support through subsidy for biomass energy generation.
2. The Government should review the carbon emissions intensity required to qualify for subsidies which have already been committed, to include emissions of combustion and a demonstration that biomass feedstocks are at least lower carbon than gas. If these conditions cannot be met, consider the case for termination of these subsidies.

References

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ShareAction (Fairshare Educational Foundation) is a registered charity that promotes responsible investment practices by pension providers and fund managers. ShareAction believes that responsible investment helps to safeguard investments as well as securing environmental and social benefits.

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