Mr Darren Jones MP
Business, Energy and Industrial Strategy Committee
House of Commons
London
SW1A 0AA

CC: Lewis Pickett, Committee Specialist (pickettl@parliament.uk)

8th December 2022

Dear Mr Jones and the BEIS Select Committee,

Re: Biomass in the power sector - follow-up to BEIS Select Committee session on 22/11/2022

Thank you for your and the Committee's time to discuss the important role of biomass in the decarbonisation of the power sector. As previously discussed, I wanted to write to you to follow up on a number of points raised during the evidence session, as well as to highlight some issues which were not able to be covered in the time allotted.

Carbon Emissions from Biomass

Following the questions from the Committee, I wanted to set out clearly the scientific grounding for the use of biomass and accounting for CO_2 emissions.

As I described during the session, the key point is that **bioenergy systems operate within the biogenic carbon cycle**, meaning that, when sourced sustainably, emissions are balanced out by regrowth as part of a continuous cycle. On the other hand, burning fossil fuels transfers carbon from geological storage and causes a permanent increase in atmospheric CO_2.[1] By displacing fossil fuels, bioenergy keeps fossil carbon in the ground.

The UN IPCC framework for carbon accounting does **not** assume that the use of biomass for power is carbon neutral. Instead, any carbon stock loss associated with harvest is counted as a CO_2 emission in the land use, land use change and forestry (LULUCF) sector.[2] Proposals to count emissions at the point of combustion could have adverse climate impacts by disincentivising the displacement of fossil fuels and removing incentives to maintain forest carbon stocks.

As you correctly raised during the evidence session the focus, therefore, must be on whether the process can be done sustainably and if the carbon cycle is fast enough to be aligned with our net zero ambitions. Critics of the sector recognise that carbon can be recaptured, but claim that it takes decades to do so, due to a single tree taking a minimum of 30 years to regrow. However, this assumption is based on a misreading of how forest systems work. There are hundreds of millions of trees in the forest from which the UK harvests biomass, all at different stages of growth. These trees are growing all the time, increasing the carbon inventory of the forest. Given

the whole forestry sector is only harvesting a percentage of this (with a smaller percentage of that going to bioenergy), sustainable forestry practices ensure that the removal of carbon is more than adequately replaced by growth throughout the forest. This is in accordance with internationally agreed methodologies for measuring carbon, and carbon removals, from the land use sector. Arguments about carbon debt do not therefore stack up when considering the economics and practice of sustainable forest management.

Evidence from the UK's main supply regions for bioenergy is clear - carbon stocks are being maintained (or increasing). In the Southeast USA, which supplied 60% of the wood pellets imported to the UK in 2021[3], the relevant supplier forests have increased tree cover by 3% and forest inventories by 112% since 1953.[4] This trend has continued in the past decade, during which around 3-4% of standing forest inventories were harvested for multiple industries, mainly timber.[5] Of this harvested volume, around 4% typically goes towards pellet exports, meaning that around 0.1% of forest inventories are used for pellet production, compared to around 0.7-1% annual net growth (overall growth is around 4-5%). Therefore, the forests are increasing inventories year-on-year whilst also supplying multiple industries. Catchment Area Analyses in other sourcing regions demonstrate a similar story - biomass is a small yet important constituent part of the wider forestry sector.[6]

In the Southeast US, a recent peer-reviewed study examined the effect of the wood pellet industry over the last two decades. The study analysed FIA data to discern carbon impacts from 2000-2019 within a 50-mile radius of all pellet plants built during this period, and concluded, *"There is robust evidence that although some trade-offs between carbon pools exist, the wood pellet industry in this particular context and period has met the overall condition of forest carbon neutrality."*[7]

Finally, over 550 scientists recently reaffirmed the important role of bioenergy as part of "climate-smart" forest management, emphasising that with proper management and use of wood products, forests have the capacity to mitigate climate change and increase biodiversity whilst supporting a wider bioeconomy and renewable energy supply.[8]

Makeup of the Biomass Power Sector in the UK

The committee inquiry oral session focused heavily on large-scale biomass power production and their supply chains. This includes generators like Drax (2595 MW) which are coal-to-biomass conversions. By displacing coal generation these sites have been able to make a major contribution to the decarbonisation of the UK power system to date. They also provide firm low-carbon power generation that complements the high deployment of variable renewables such as solar and wind.

However, I wanted to take this opportunity to highlight this is not the full picture of the biomass power sector. There are more than 60 smaller, decentralised biomass power generators, typically between 15 – 65 MW in capacity. Overall, such sites account for more than 1300 MW of capacity, making a significant contribution to low-carbon energy supplies, while also providing important grid services within the localised distribution electricity grid.[9]

These smaller biomass sites use a range of feedstocks, predominantly sourced domestically, including waste wood and energy crops. Waste wood arises from the construction sector or civic amenity waste sites providing a valuable waste processing service along with power generation. Use of waste wood capacity sees three million tonnes of waste wood diverted from landfill annually. Equally, use of energy crops (like straw, short rotation coppice, willow or miscanthus)

provide valuable additional revenue streams to the agricultural sector, utilising less economically productive land. The Climate Change Committee has called for the expansion of the planting of UK energy crops to around 23,000 hectares per year for use in bioenergy applications.[10]

It is important that in considering the decarbonisation of the power sector, the Committee recognises the full range of Biomass Power sites and their supply chains. Realising the UK's net zero targets by 2050 will depend on both increasing domestic feedstock production and continuing to use biomass imports in line with strict sustainability governance arrangements.

Sustainability Governance Arrangements

In addition, I wanted to set out in more detail the existing sustainability governance arrangements for biomass. The UK's bioenergy sustainability governance arrangements are regarded as one of the most comprehensive frameworks in the world.

All government support schemes have associated bioenergy regulations and reporting requirements that must be fulfilled. Power projects supported under the Renewable Obligation or Contracts for Difference schemes must provide **information on the land from which the biomass is sourced**, to minimise impacts on carbon stocks and biodiversity.[11]

The sustainability criteria also include **GHG emission savings criteria**, requiring that life-cycle emissions savings associated with the biomass use (including production, cultivation, harvesting, collection, transportation, and processing of biomass) meet certain thresholds to ensure they deliver significant savings compared to any fossil counterparts. This includes UN IPCC-approved carbon accounting methodologies, which allow for robust life cycle analysis of supply chain emissions and consideration of impacts on land use change and other social issues.[12]

Additional sustainability requirements apply for the use of feedstocks for electricity or heat use that are based on virgin wood, whether imported or produced domestically. The Timber Standard for Heat and Electricity sets out wood-fuel land criteria covering a range of social, economic, and environmental considerations that reflect sustainable forest management practices and are based on internationally agreed principles.[13]

Finally, **voluntary independent certification schemes** provide a route for both complying with national requirements and going well beyond them. The Sustainable Biomass Program (SBP), for example, provides a comprehensive set of requirements covering carbon and other environmental, social, and economic criteria. This includes over 30 forestry specific indicators which are designed to ensure that forests are maintained or increased, biodiversity is preserved, and that forests of high conversion value are protected. Such indicators map against the Forest Stewardship Council (FSC), the Program for the Endorsement of Forest Certification (PEFC), and those systems recognised by PEFC, such as the Sustainable Forestry Initiative (SFI). Indicators specifically include labour rights, air, water, and conservation issues as well as GHG and biodiversity issues.[14]

The industry is very happy to further discuss any specific concerns around these sustainability governance arrangements under which the sector already operates. We believe it is important these arrangements are understood for the context of this inquiry.

Biomass Strategy

At the end of the oral evidence session, you asked for the panel to write to the committee stating what they would like to see delivered by the Government's Biomass Strategy. It is crucial that the strategy clearly sets out how the UK Government wants bioenergy to play its role in helping to get to Net Zero, updating the Government's 2012 Bioenergy Strategy. Given the Strategy has been delayed, I would ask the committee to call on Government to see the Strategy published as a matter of urgency in 2023.

In 2019 the REA produced a Bioenergy Strategy for the UK in which we set out how the bioenergy sector could sustainably provide up to 16% of the UK's energy needs across power, heat, and transport.[15] To see this delivered, the REA are looking for the following from the Government's Biomass Strategy:

- A clear Statement from Government recognising the role of biomass in reaching Net Zero where it is used in line with strict sustainability criteria. This includes recognising a role for both existing biomass infrastructure past 2027 (when the RO starts to come to an end) and the delivery of BECCS.

- The delivery of a clear timetable for the commercial delivery of BECCS and appropriate supportive policies.

- Maintain the UK's world-leading, science-based sustainability criteria, which operate at several levels and throughout the supply chain, supported by independent, audited certification.

- Recognition of the wide variety of feedstocks and supply chains, as well as recognising the role of biomass not only in power, but heat and transport. Government's 'priority use framework' for biomass must allow the market a role in determining where biomass is best used in accordance with market demand and supply.

- New policy support from DEFRA for the delivery of commercial-scale domestic biomass feedstocks – such as perennial energy crops like willow and miscanthus – to ensure growth in line with CCC recommendations. Alongside domestic scale-up, policy should continue to recognise an ongoing role for biomass imports done in accordance with strict sustainability criteria.

- Recognition of the role of bioenergy within the broader bioeconomy including the forestry sector, providing additional returns for the lowest-value forestry materials, and supporting the growth of the wider timber sector.

I would be happy to provide further detail or clarification on any points contained in this letter, either in writing or in a follow-up meeting.

Yours sincerely,

Dr Nina M Skorupska CBE FEI, Chief Executive, REA

(A copy of this letter has also been sent to the BEIS Select Committee clerk for circulation to the rest of the committee)

References

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[2] UN IPCC (2019) 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 2: Energy https://www.ipcc-nggip.iges.or.jp/public/2019rf/vol2.html

[3] BEIS (2022), DUKES: Renewable Sources of Energy, https://www.gov.uk/government/statistics/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes

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[5] Forest2Market (2022), New Markets for Wood Products Help Preserve Forests for Future Generations, https://www.forest2market.com/blog/new-markets-for-wood-products-help-preserve-forests-for-future-generations

[6] Drax, Catchment Area Analyses, https://www.drax.com/sustainability/sustainable-bioenergy/catchment-area-analyses/

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[8] REA (2022) Over 550 Scientists Back Bioenergy as Part of "Climate Smart" Forest Management, https://www.r-e-a.net/over-550-scientists-back-bioenergy-as-part-of-climate-smart-forest-management/

[9] BEIS (2022) Renewable Energy Planning Database, https://committees.parliament.uk/committee/365/business-energy-and-industrial-strategy-committee/

[10] CCC (2020) Land Use: Policies for a Net Zero UK, https://committees.parliament.uk/committee/365/business-energy-and-industrial-strategy-committee/

[11] For further Information see: for the RO: 'Biomass Sustainability Reporting' https://www.ofgem.gov.uk/environmental-and-social-schemes/renewables-obligation-ro/applicants/biomass-sustainability And for the CfD: LCCC "Guidance in Sustainability Criteria Reporting" https://www.lowcarboncontracts.uk/sites/default/files/publications/LCCC%20SC%20guidance%20final.pdf

[12] IPCC (2019) 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 2: Energy https://www.ipcc-nggip.iges.or.jp/public/2019rf/vol2.html

[13] BEIS Woodfuel Advice Note, 2017, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/594136/Woodfuel_Advice_Note_v2_Feb2017.pdf and DECC (2014) Timber Standard for Heat & Electricity, https://www.gov.uk/government/publications/timber-standard-for-heat-electricity

[14] Sustainable Biomass Program, Overview https://sbp-cert.org/wp-content/uploads/2018/10/SBP_Overview_Final_Mar18.pdf

[15] REA (2019) Bioenergy Strategy, https://www.r-e-a.net/resources/bioenergy-strategy-phase-3/