



Leading carbon dioxide removal (CDR) specialists are calling for a radical update on UK biochar policy to help ensure net zero targets can be met.

The plea was made by the Future Forest Company following its participation at an AIMday® (Academic Industry Meeting day) event hosted by Edinburgh Innovations, the University of Edinburgh's commercialisation service, which links academia with industry.

Biomass contains carbon dioxide absorbed from the atmosphere through photosynthesis. Turning biomass into biochar, by heating it in the absence of oxygen, prevents it breaking down so that carbon can be usefully stored in the soil for hundreds or thousands of years. Current regulation permits biochar to be produced from biomass such as agricultural and forest wastes.

The Future Forest Company is now calling on the UK Government and carbon standards agencies to embrace biochar production from complex feedstock. These feedstock include waste streams where residual plastic limits their end-use. The CDR specialists say that a change in policy to include these materials has the potential to transition a high-cost value chain to one where companies can monetise waste removal as part of the biochar equation.

Simon Manley, Head of Carbon at The Future Forest Company, said: "One of the University of Edinburgh's recent studies showed that biochar from plastic-containing feedstock can still meet international material standards for quality so that it can go into things such as concrete, asphalt, and into the construction industry. Producing biochar from waste can potentially address environmental challenges around plastic pollution and energy recovery.

"We want to explore this further. We believe establishing these materials as eligible feedstock for biochar could have huge impact on pushing biochar production into the mainstream and unlocking its full CDR potential. The potential for biochar to help the UK achieve its net zero commitment is established, but not currently on to full realisation.

“Government and most importantly Department for Environment, Food & Rural Affairs (DEFRA) and the Department for Business, Industry & Industrial Strategy (BEIS) urgently need to review their policies around biochar production and use. Including this category of feedstock as an eligible material for biochar production will allow the biochar production process to become much more economically viable and therefore optimise its chances of fulfilling its full CDR potential.

“Radically updating and amending policy on biochar production and use in the UK will see it fulfil its potential as a CDR technology – until the government does that nothing is going to change.”

Dr Saran Sohi is Senior Lecturer in Soil Science and Biochar at the School of Geosciences, University of Edinburgh. He said: “Discussion of updated regulation is underway in Government, and in the light of the urgency around climate change, these changes must be strategic, comprehensive and integrated in policy. Waste materials account for about half of the CDR opportunity presented by biochar. Industry can help shape the frameworks that allow biochar CDR to progress in ways that are clean, economically viable and swift.”

Dr Ondřej Mašek is Reader in Engineering Systems at the School of Geosciences, University of Edinburgh. He said: “Plastic contamination, often in form of microplastics, is now ubiquitous in a wide range of biomass resources and this can present challenges to their uses. However, our work has shown that rather than being a hindrance, small amounts of plastic contamination improve the energy content in biochar co-products, without negatively impacting quality of resulting biochar.”

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