

Wood Bioenergy Essential for Net Zero: Industry Launches Sustainability Principles to Set Global Standard for Threefold Growth

- A new ***Glasgow Declaration on Sustainable Bioenergy*** sets out how wood-based bioenergy can help tackle climate change, with a world-wide industry standard for sustainability at its core.
- By 2030, sustainable wood-based bioenergy is projected to reduce net global emissions by 600 million tonnes of CO₂e annually and one billion tonnes of CO₂e by 2050 – more than is currently emitted by the world’s entire aviation industry.
- The UN Intergovernmental Panel on Climate Change says: “Bioenergy use is substantial in 1.5°C pathways with or without BECCS due to its multiple roles in decarbonizing energy use.”
- The *Declaration* sets a global standard of sustainability for the industry, aiming to launch a cross-sector dialogue about how wood bioenergy can deliver to its full potential as an indispensable tool for reaching global Net Zero.

The [Glasgow Declaration on Sustainable Bioenergy](#), published today, uses International Energy Agency (IEA) data to highlight the indispensable role that sustainable bioenergy will play to help the world achieve global Net Zero by mid-century. This target would help the world to meet the Paris Agreement’s 1.5°C target, and the IEA’s ‘Net Zero Scenario’ projects threefold growth in the use of sustainable bioenergy to achieve it.

The *Declaration* has been signed by a coalition of thirteen wood bioenergy companies and organisations from around the world, setting out a vision for the sector’s ambitious growth to support the push to global Net Zero.

The document also details a framework of sustainability principles that are already helping to deliver sustainable wood-based bioenergy and must continue to underpin the entire industry as it grows internationally. The framework includes robust carbon accounting and supply chain transparency, resource management, biodiversity and supporting communities.

The IEA’s Net Zero Scenario anticipates that sustainable wood bioenergy must increase threefold to deliver 4% of the global energy supply by 2050. This will reduce emissions by one billion tonnes of CO₂e per year compared to 2020 - more than is currently emitted by the world’s entire aviation industry. These reductions will come from a combination of replacing fossil fuels with renewable energy and delivering negative emissions through bioenergy with carbon capture and storage (BECCS).

The expansion of wood bioenergy could also support more than 200,000 additional jobs in the supply chain by 2030, and more than 450,000 additional jobs by 2050, providing

employment and investment in under-resourced communities in both rural and industrial areas.

The group invites all participants in the broader bioenergy sector, including industry, civil society, academia, and governments, to join the signatories and help achieve the full potential of sustainable bioenergy to help deliver global Net Zero.

Background

Sustainable wood bioenergy is recognised as essential for meeting our climate goals by the leading authorities on climate change, including the UN's Intergovernmental Panel on Climate Change (IPCC), the IEA, and the UK's Climate Change Committee.

The *Glasgow Declaration on Sustainable Bioenergy* has two main parts:

- 1) A vision for the sustainable growth of the global wood bioenergy sector over the next 10 to 30 years, based on pathways set out by the International Energy Agency and IPCC.
- 2) A framework of sustainability principles that are already helping to deliver sustainable wood bioenergy and must continue to underpin the entire industry as it grows. These principles outline a sustainable approach to wood bioenergy covering four key areas: managing natural resources responsibly; transparency and science-based carbon accounting; protecting biodiversity; and supporting and protecting communities. The principles are not intended as a replacement for detailed regulations and certification schemes, which are necessary to ensure sustainability.

Bioenergy is the world's leading form of renewable energy, supplying five times more energy than wind and solar combined (across transport, heat, and power). Sustainable wood bioenergy has already contributed significantly to decarbonising the energy sector by providing a reliable, low-carbon, renewable alternative to fossil fuels. It has directly replaced coal in some cases where coal power stations have been converted to run on sustainably sourced biomass. It also provides flexible energy, which supports a diverse low-carbon energy mix, including wind and solar power.

When sustainable wood bioenergy is combined with carbon capture and storage (known as BECCS), it provides negative emissions by capturing carbon at scale and burying it permanently underground, which helps to offset emissions from hard-to-decarbonise sectors such as aviation and agriculture.

Quotes

Christian Rakos, President of the World Bioenergy Association, said:

“Sustainable bioenergy is an essential tool for delivering on the ambitious goals of the Paris Agreement and helping to tackle climate change. The International Energy Agency says that bioenergy is one of seven “key pillars of decarbonisation.”

“The anticipated contribution of bioenergy to net zero targets must go hand-in-hand with an unwavering focus on the highest standards of sustainability. As the global bioenergy industry continues to deliver decarbonisation, innovation and crucial green jobs throughout the supply chain, sustainability must remain at the very heart of business models.

“The Glasgow Declaration on Sustainable Bioenergy is an invitation to all participants in the broader bioenergy sector, including industry, civil society, academia, and governments, to join the existing signatories and help realise the full potential of sustainable bioenergy in delivering global Net Zero.”

Dr Nina Skorupska, Chief Executive of the Association for Renewable Energy and Clean Technology, said:

“Meeting the commitments being made in Glasgow at COP26, and keeping the 1.5°C Paris Agreement alive, means recognising the role that biomass has to play in helping to decarbonise the world’s energy needs. Today, bioenergy is providing immediate carbon savings through its use in the production of power, heat and renewable transport fuel. Internationally accepted global energy scenarios recognise that this role is going to grow, including the delivery of negative emissions through the deployment of bioenergy carbon capture and storage.

“However, the bioenergy industry fully recognise that further growth must go hand in hand with firm and transparent commitments to ensuring that biomass continues to be done right. The Glasgow Declaration on Sustainable Bioenergy is an unambiguous statement, making clear that ensuring the sustainable use of natural biomass resources is at the centre of industry activities, both today and in the future. The principles reaffirmed within the Declaration go beyond a statement of intent, and form a foundation for how all bioenergy stakeholders can continue to review industry practices, ensuring that bioenergy delivers demonstrable carbon savings along with further environmental and social benefits. The REA look forward to continuing to work with the UK bioenergy sector to ensure these principles are not only embedded in their businesses but continue to be maintained in all future practices, helping the UK to reach Net Zero.”

Drax Group CEO Will Gardiner, said:

“The climate crisis is the greatest challenge the world faces and the world’s leading climate scientists are very clear that biomass has a critical part to play in both reducing emissions as well as removing carbon dioxide from the atmosphere.

“Biomass is unique because it can be used to replace fossil fuels in the delivery of low carbon, flexible and renewable energy, and when combined with carbon capture and storage technology, it permanently removes carbon dioxide from the atmosphere. No other technology can do both.

“This declaration is the start of a process. We invite all stakeholders, especially fellow biomass producers, users and NGOs, to discuss the principles and reach consensus on what good biomass looks like, so the industry can sign up to the agreed principles and commit to only using biomass which meets them.

“Drax has world-leading sustainable biomass sourcing standards and as an industry we must continually use the latest science to ensure our operations keep making a positive contribution to the communities in which we operate and the growing forests we source from.”

John Keppler, Co-founder, Chairman and CEO of Enviva, said:

“The IEA has distinguished sustainable bioenergy as one of seven ‘key pillars’ of decarbonization and technology that must scale exponentially to help meet global Net Zero. The Glasgow Declaration serves as recognition that as the industry grows, we must continue to lead in our sustainable sourcing, demonstrate transparency, and foster engagement with all stakeholders. Enviva is proud of the role it has played in enabling countries to reduce their carbon emissions and supports this initiative to ensure biomass delivers on its full potential.”

Fiona Macleod, Lynemouth Power Limited Managing Director, said:

“As an operating biomass power station, the first one in the UK to have fully converted from coal to biomass, Lynemouth Power is proud to have contributed to a significant reduction in greenhouse gases. But, if we are to meet the international commitments made during COP26, we can, and must, go further. The launch of the Glasgow Declaration is a landmark moment for the Sustainable Bioenergy sector and Lynemouth Power is proud to be one of the signatories.”

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Editor's Notes

- The [Glasgow Declaration on Sustainable Bioenergy](#) has been signed by companies operating in different parts of the supply chain. They are: Associated British Ports, Drax Group, Eco2, Enviva, Fram Renewable Fuels, Graanul Invest, Great Resources Co., Ltd, Lynemouth Power Limited, Pellet México: Bioenergía, PD Ports, Port of Tyne, Association for Renewable Energy & Clean Technology (REA), and the US Industrial Pellets Association (USIPA).
- Independent advisers to the Glasgow Declaration include Bioenergy Europe, National Farmers' Union (NFU), Supergen Bioenergy Hub, and the World Bioenergy Association (WBA).
- Sustainable bioenergy is the world's leading form of renewable energy, generating five times more energy than wind and solar combined. Currently, bioenergy in all its forms provides 11.6% of total global energy supply. Wood bioenergy constitutes around a fifth of overall bioenergy supply. [Source: IEA.](#)
- The IEA says that the use of sustainable wood-based bioenergy will expand to deliver around 20 Exajoules (EJ) by 2050, up from 7 EJ today. This will account for around 4% of global energy supply, as total energy supply will also increase significantly. [Source: IEA.](#)
- Sustainable wood-based bioenergy can remove over one billion tonnes of CO₂e per year by 2050 by providing sustainable alternatives to fossil fuels and by delivering negative emissions at scale. This is greater than current annual global aviation emissions. [Source: Air Transport Action Group.](#)
- The world is on track to miss the IPCC's assessment of the amount of negative emissions needed by 2025 by more than 80%. ([Source: Coalition for Negative Emissions](#)) Bioenergy provides an immediate, proven way to deliver negative emissions at scale, by combining it with carbon capture and storage. This can enable permanent carbon dioxide removal from the biosphere (the combination of atmosphere and living organisms).
- 2-4Gt of CO₂ removals through BECCS by 2030 are possible from sustainable sources without changes in land use, with the figure remaining consistent to 2050, according to the Coalition for Negative Emissions. [Source: Coalition for Negative Emissions.](#)
- Sustainable wood-based bioenergy supply chains could support more than 200,000 additional jobs by 2030, and more than 450,000 additional jobs by 2050, based on data from IRENA and the IEA.

- The IEA says \$4 trillion per year of clean energy transition-related investment is needed by 2030 to get the world on track for net zero emissions by 2050. [Source: IEA.](#)
- Analysis in the *Glasgow Declaration* suggests more than \$355 billion by 2030 will be required to scale up the wood-based bioenergy industry, and \$822 billion by 2050. This is equivalent to \$27 billion per year.
- The IEA NZE scenario is the world's first comprehensive study into how the world can deliver a global energy system with net zero emissions and universal access to affordable energy by 2050. As part of this scenario, bioenergy's role expands from its current level in order to replace fossil fuels and also to contribute to greenhouse gas (GHG) reductions via carbon capture and storage (CCS).
- To calculate the figures in the Declaration, we used data from the International Energy Agency's (IEA) Net Zero Emissions Scenario and compared it to industry data about investment, employment and typical energy outputs.
- The Net Zero Emissions Scenario and detailed supporting data are available at the IEA website. [Source: IEA.](#)
- Data on jobs in the bioenergy industry was also sourced from the International Renewable Energy Agency's (IRENA) authoritative annual review of employment in the renewable energy sectors, available at their website. [Source: IRENA.](#)