

NG Nordic's Response on Call for Evidence for an Initiative Towards a Circular, Regenerative and Competitive Bioeconomy

NG Nordic is a leading provider of circular solutions and environmental services, committed to tackling climate change and resource scarcity. As part of our work to scale access to circular raw materials and reduce emissions, we are developing carbon capture and utilization (CCU) solutions alongside a wide range of waste management services. We were the world's first industrial player to capture and transform waste incineration CO₂ into plastics.

NG Nordic's key messages

- CO₂ should be seen as a viable raw material for biological processes.
- Biological processes can transform both captured carbon and biobased feedstock into plastics; therefore, CCU should be treated equally to biobased sources in the EU Bioeconomy Strategy.
- EU funding is needed to ensure that European industry has a level playing field with global competition.
- CCU-based plastics face many of the same challenges as bio-based plastics, and the EU should create incentives to promote the uptake of these new and innovative materials.

CCU supports EU climate goals, circularity, and competitiveness

We are pleased to see that the European Commission recognizes bioeconomy as playing a key role together with the Competitiveness Compass, the Clean Industrial Deal, and the EU Climate Law. These elements support the EU in reaching its climate and energy goals by 2030 and achieving climate neutrality by 2050, while also addressing biodiversity loss and pollution.

We agree with the Commission's vision and believe our development is aligned with it, as waste incineration with CCU:

- can capture emissions and thus combat climate change
- may improve recycling rates, as carbon from waste is bound into new products
- can represent a truly regenerative bioeconomy, by transforming even non-recyclable waste into new chemicals and plastics

From CO2 to plastic

NG Nordic, previously known as Fortum Recycling&Waste, successfully piloted CCU technology in Riihimäki, Finland in 2022. The pilot focused on capturing waste incineration CO₂ and transforming it into methane. In the end of 2024, NG Nordic was successful in producing CCU plastic at R&D scale. At the moment we are building a pilot plant facility for CCU plastics production. The goal is to reach commercial volumes by the end of 2030.

CCU belongs in the EU's bioeconomy framework

We believe that captured carbon, whether from biogenic or fossil sources, should be considered a viable feedstock for the bioeconomy. Bioeconomy is typically understood to include biomass production, bio-based materials and products (including bio-chemicals), and bioenergy — but not CCU. However, the same biological processes that convert sustainable biomass into plastic can also convert captured carbon into plastics. Therefore, captured carbon should be treated equally to biobased sources in the EU Bioeconomy Strategy.

CCU-based plastics face many of the same challenges as plastics made from biomass: a lack of a level playing field with fossil-based plastics, limited demand-pull mechanisms for fossil-free materials, and insufficient funding instruments for development and investment.

Europe must invest now to lead in CCU innovation

The industrial sector needs funding from the EU to remain at the forefront of development. We were the world's first industrial player to capture and transform waste incineration CO₂ into plastics — but competition is fierce. China is making significant investments in developing plastics derived from CO₂, driven by its climate goals and the growing demand for sustainable materials. This includes government support, private sector investments, and research into carbon capture and utilization technologies.

EU financing is essential for both upstream and downstream industrial players, as well as for research organizations, so that consortiums representing the entire value chain can be established. These consortiums can bring new, innovative materials from the R&D stage to commercialization. Access to financing is also critical because investments in plastics production based on biological processes are at a low Technology Readiness Level (TRL) and are highly capital-intensive. These types of projects are typically not supported by banks or private investors. Investments must be made now in order to ensure these technologies are operational by 2030.

Market incentives are key to scaling CCU solutions

The European Commission's communication paper "Building the future with nature: Boosting

Biotechnology and Biomanufacturing in the EU” (COM(2024) 137 final, Brussels, 20.3.2024, p. 7) states: “Whilst the demand for biomass is increasing it is estimated that the supply of sustainable biomass falls 40-70% short compared with projected demand by 2050. This makes the use of additional renewable carbon sources such as recycled waste or captured carbon necessary.”

To support the use of captured carbon as an additional renewable carbon source, the EU should do more to create market pull for CCU plastics.

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About NG Nordic:

NG Nordic is a leading provider of circular solutions and environmental services, tackling the urgent challenges of climate change and resource scarcity. Through reuse, collection, recycling, and depollution NG Nordic transforms waste into valuable resources and removes hazardous substances from circulation – scaling access to circular raw materials, decarbonize society and help protect natural ecosystems. With strong presence across the Nordics, and in Poland and the UK, NG Nordic is a vital part of the Nordic industrial infrastructure handling 4.4 million of waste annually through 90 facilities and sites.