Bioenergy - essential for climate mitigation and rural development

Achieving a carbon neutral economy will be challenging and requires a portfolio of clean solutions. Sustainable bioenergy plays an essential role in all climate mitigation scenarios from European and International organisations. Today, bioenergy provides 57.4% of the renewable energy consumption in the EU and 11% of the total EU energy mix. To continue playing this important role, bioenergy must, with the support of a coherent policy framework, be generated sustainably, allowing significant greenhouse gas (GHG) emissions reductions compared to fossil fuels and thus contributing to achieve sustainable economic development.

Readily available solution for sectors lagging behind in decarbonisation

Bioenergy is particularly important in sectors for which other decarbonisation options are not available or lagging behind. In the transport sector bioenergy is by far the leading clean solution and key to cut emissions in aviation and shipping. The main market segment for bioenergy remains heating for residential as well as industrial consumers. Long term perspectives and fair market conditions are needed to support the development and innovation of bioenergy.

Bioenergy: creating jobs and facilitating green recovery...

Bioenergy is mainly utilising local biomass and its manufacturing value chain is solidly based in the EU. This results in abundant job creation and could contribute to rebound of the economy and green recovery. Being the largest renewable energy source in terms of direct and indirect employment, bioenergy accounts for 708,600 jobs in the solid biomass, biofuels, biogas and renewable municipal waste sectors. In 2018, its turnover represented €57.6 bn in the EU27 and the UK.

... supporting strategic autonomy of the EU

Despite its growth, the import dependency of bioenergy remains very low (3.4%), especially if compared with fossil fuels, which the EU energy system is still largely depending on. As witnessed with the recent gas price surge, Europe remains vulnerable to fossil fuels prices fluctuation and instability. While the consumption of renewable energy grew significantly in the last decade, their penetration in the market needs to be accelerated to achieve climate neutrality by mid-century.

Evolution of the gross inland consumption by main fuel type in EU27 (Mtoe)

Distribution of renewable gross final energy consumption in the EU27 in 2019 (%)
The European bioenergy industry is globally competitive and holds an undisputed leadership in terms of technology development, manufacturing, and fuel production processes. The EU exports advanced equipment and is largely resilient to the disruptions of global value chains. Bioenergy is also an enabler of other sectors’ decarbonisation such as commercial and industrial energy consumption. For these reasons, it is essential to establish a European industrial strategy recognising the decarbonisation potential of bioenergy as well as its potential for economic growth and job creation.

...and saving great amounts of emissions

In 2019, bioenergy allowed to save 285 MtCO₂eq in the EU27 Member States, which is equivalent to around 8.5% of the EU27 GHG emissions in the same year and corresponds to more than 2.5 times of Belgium’s annual emissions or approximately the annual emissions of Spain.

Key Messages

1. Biomass is the only fuel that must comply with strict sustainability requirements. The sector fully supports traceability and responsibility of the value chain. Yet, an ever-evolving policy framework and often changing rules could discourage investments and ultimately jeopardise achieving the EU climate objectives.

2. The decarbonisation of the H&C sector is lagging behind. The Energy Taxation Directive (ETD) and the EU Emissions Trading System (EU ETS) for buildings should give clear signals, phasing out support and exemptions for all fossil fuels and favour renewable energy solutions.

3. To reach climate neutrality by 2050, investing in negative emissions technologies such as Bioenergy with carbon capture and storage (BECCS) and biochar should become a priority. For this reason, an appropriate policy framework defying and incentivising these options should be timely developed.