

Bioenergy: A Sustainable Source that Benefits the Climate, Industry and Society

DISCLAIMER: All opinions in this column reflect the views of the author(s), not of EURACTIV Media network.

Promoted content



A biomass plant for district heating in Varna, Italy. Biomass is an invaluable tool to decarbonize heat and power, and to reduce dependence on natural gas.

As the world battles climate change, it is imperative for all elements of society, from governments to businesses to individual citizens, to work together. In Japan, this principle is deeply ingrained. It even has a name: “Sanpo Yoshi”, a centuries-old Japanese theory that a business can, and must, benefit society as a whole – the seller, the buyer, and the local community.

Marco Baresi is the Institutional Affairs Director at Turboden.

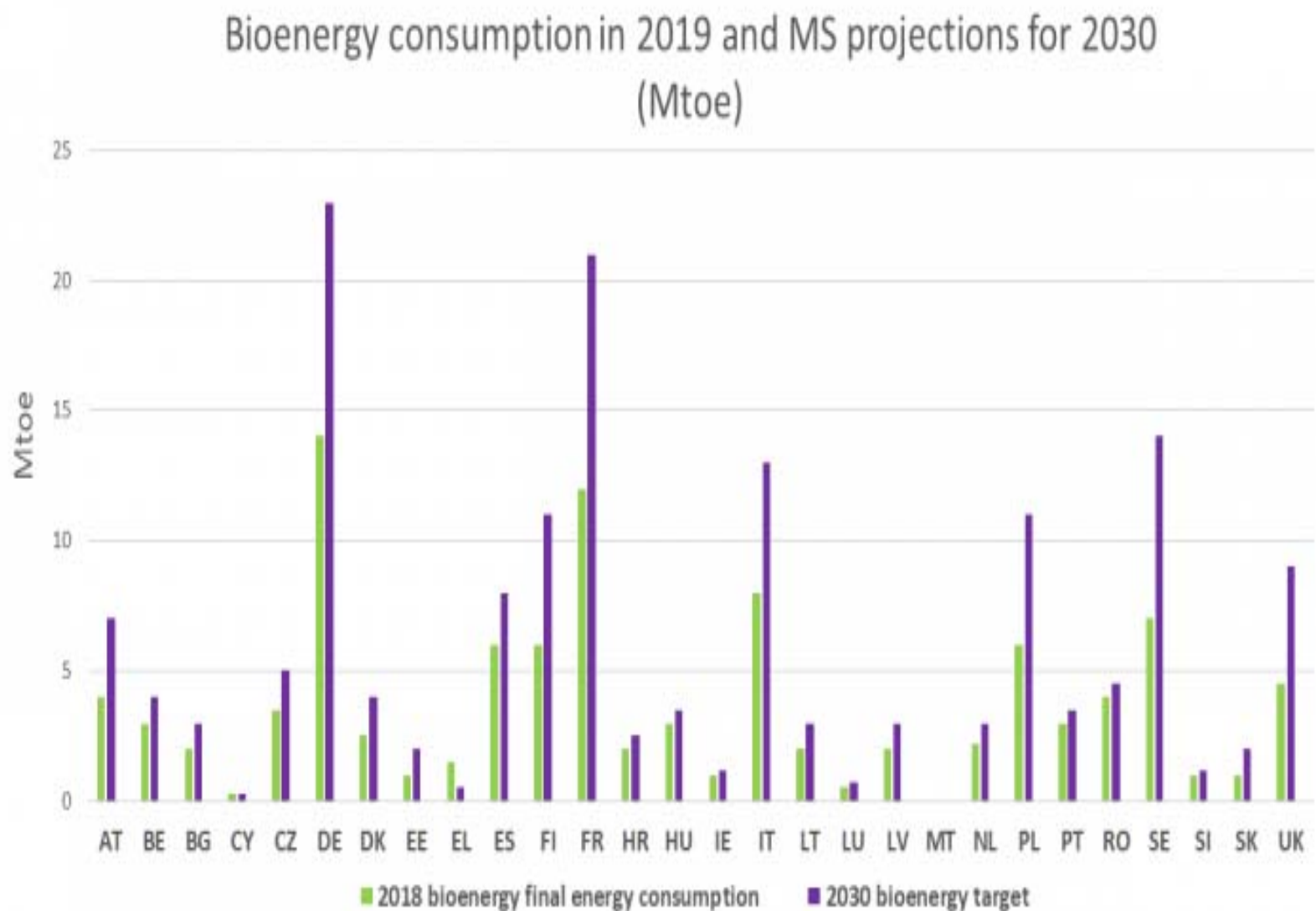
In Europe we can get inspired by this concept nowhere more urgently than in our attempts to decarbonise the economy. In southern Italy, for example, a company called Fiusis is producing more than 7,500 MWh/year of clean electric power from biomass – in this case, virgin wood chips from the pruning of local olive trees. This not only reduces carbon dioxide emissions, it also contributes significantly to the reduction of open field fires.

The pioneering nature of the Fiusis project has been recognised both by the Italian Ministry of Economic Development and by the European Economic and Social Committee in Brussels. How it demonstrates the “Sanpo Yoshi” philosophy is illustrated here.

Another instance of how bioenergy can benefit a local community comes from the heart of the Dolomite mountains in Italy. The town of Dobbiaco powers its district heating with wood biomass from its forest management programme, using local industries to generate heat and green electricity for the local community since 2003. The Dobbiaco supply chain covers the entire Pusteria valley, ensuring the supply of wood material from fir and larch is harvested within a radius of less than 70 km. This balanced and sustainable supply chain has a double benefit: downstream it generates renewable heat, keeping citizens’ utility bills stable – and upstream the woods are kept clean.

The power system installed in both electricity plants is an ORC (organic Rankine cycle) system. It allows the production of electricity and heat from multiple sources, including many kinds of biomass and residues (wood biomass, rice husk, furniture waste, olive pomace and pits, malt dust, sunflower husk, cotton gin waste and so forth). What is more, organic Rankine cycle solutions in cogeneration mode plants usually in a range up to few MWe, have an overall efficiency higher than 98%.

A large number of such biomass plants are currently in operation across the world, but the EU is the leading region, with bioenergy representing 57% of all renewable energy consumed. The sector employs 703,200 people, including all suppliers from the EU value chain, generating €60.6 billion in annual turnover. Projections until 2030 show an increase in the use of bioenergy for electricity and heat in several EU countries. One of the countries that will see the largest increases is France. [Source: Bioenergy Europe – *Statistical Report 2021*]



The widespread adoption of this technology is due to its considerable benefits. From an **energy point of view**, bioenergy contributes to the stability and resilience of the electricity and heat system while enabling the transition to an increasingly renewable and distributed generation model. It also promotes sector coupling and efficiency, thanks to the extensive use of high-efficiency cogeneration systems. And it reduces dependence on fossil fuels, which can be replaced with derivatives from organic residues. Particularly in 2021 also proved to be a reliable source for electricity and heat generation, able to mitigate the huge swings in gas prices.

Socio-economically, bioenergy advances the creation of local supply chains, essential for combating the depopulation of rural areas and the development of a dynamic, innovative and sustainable industrial sector focused on manufacturing complex cogeneration systems.

Finally, from an **environmental point of view**, bioenergy contributes to the circular economy, thanks to the enhancement of secondary raw materials which would otherwise be disposed, and to the decarbonization of hard-to-abate sectors, such as thermal power and transport.

European rules threaten extra burdens

Despite being a critical component of Europe’s renewable energy production, the EU regulatory policies being drafted to govern bioenergy present a decidedly mixed picture for the sector.

For example, the revised RED proposal sets stringent thresholds on the amount of greenhouse gas (GHG) emissions that need to be saved by solid biomass installations producing electricity, heating and cooling – lowering the limit of total rated thermal input from 20 MW to 5 MW (equivalent to about 700 kW power).

This proposal, if enacted, is going to damage the economics of small biomass plants severely. The expense of additional certifications with regard to GHG emissions could add up to 10% per year to the fuel costs of a high-efficiency cogeneration biomass plant of 1MWe capacity. Adding such bureaucratic costs without adding real benefits for these small size plants usually integrated in the territory as for the example mentioned before, will undermine business plans that are already very close to the bone.

Furthermore, plants that are benefiting from the first period of incentives born with the 20-20-20 package will face uncertainty. These plants in the coming years will leave the incentive period representing strategic assets for the community and for the renewable power and heat contribution to the decarbonisation of the economy. Without an adequate follow up the risk is to turn off many plants, throwing away the investments made, the local social and economic benefit and the valuable contribution to the ambitious “Fit for 55” package.

Conclusion

Bioenergy generated from solid biomass – which comes from byproducts, residues or sustainable forest management – can make an important contribution to Europe’s economic, environmental and social development. It will be particularly helpful in achieving the region’s ambitious decarbonization objectives for heating, cooling and power. At the same time, it can help us to regulate the local climate, contain fire outbreaks and manage water flows. It is a truly environmentally and socio-economically sustainable solution to preserve and to promote local economy. And it is key to mitigating the impact of the huge swings in gas prices that Europe is currently witnessing. This great potential should not be wasted by adding unnecessary bureaucratic burdens for operators of small biomass plants.

© [1999 - 2022](#) | Efficacité et Transparence des Acteurs Européens. EURACTIV MEDIA NETWORK BV. | [Terms and Conditions](#) | [Cookie Policy](#) | [Privacy Policy](#) | [Contact us](#)