

With the energy crisis hitting the wallets of consumers and driving up inflation, the European Union is turning to biomass among a range of alternatives to replace Russian gas imports.

As part of its REPowerEU plan presented in May, the European Commission set out a target to ramp up domestic production of biomethane to 35 billion cubic meters (bcm) by 2030, up from around 3 bcm today.

Earlier this month, the European Commission kicked off the process by launching a new Biomethane Industrial Partnership (BIP) to ramp up production as quickly as possible.

"Europe has huge potential for the production of biomethane," said Frans Timmermans, Commission vice president in charge of the European Green Deal. "With biomethane, we can replace fossil gas from Russia with homegrown, sustainable and renewable gas," he added, saying this also brings new economic opportunities for rural areas.

The biogas industry is ready to deliver on the 2030 target but says this requires "€70 to 80 billion of investment" as well as commitment from policymakers to lower barriers for investment, production and use of biomethane.

Yet, there are doubts within the Commission itself about whether Europe can produce sufficient quantities of biomass to meet all of the EU's objectives without destroying the environment at the same time.

In an interview with EURACTIV last week, a senior official at the Commission's research and innovation directorate said the potential for an increase in the sustainable production of biomass "is limited by ecological factors like the need to protect biodiversity and maintain Europe's carbon sinks" – the forests which absorb CO₂ as trees grow.

"Studies suggest that the gap between the potential demand for biomass and its sustainable supply can be as big as 40-70%" by 2050 depending on the scenarios, said John Bell, 'Healthy Planet' director at the European Commission's DG Research & Innovation.

With demand for sustainable biomass on the rise, this means hard choices have to be made, with some uses of biomass prioritised over others.

According to the so-called 'cascading principle', woody biomass should in theory be used in priority where it adds the most economic value, in the following order: 1) wood-based products, 2) extending their service life, 3) re-use, 4) recycling, 5) bio-energy, and 6) disposal.

But translating the cascading principle into practice will imply difficult trade-offs.

According to Bell, what EU regulators can do for a start is to "at least prevent perverse financial incentives for the burning of such forest biomass whose quality would justify its use elsewhere".

In the European Parliament, lawmakers agree. Last month, they rallied behind plans to end subsidies for bioenergy – the burning of biomass for electricity production – as part of a vote on the EU's revamped Renewable Energy Directive.

The same goes for biofuels, Bell argues, saying “only advanced biofuels should be prioritised,” not first-generation biofuels which create direct competition with food crops for human consumption.

Put differently, the Commission seems to believe that there are more valuable economic uses for biomass than the production of biofuels for road transport or burning for electricity. Yet, it is forging ahead with ambitious plans to ramp up biomethane production.

Environmental groups, for their part, doubt that the EU can reach its 35 bcm target with sustainable biomass only.

“In this report, we project an absolute maximum of 18 bcm of biomethane that could potentially be produced from waste and residue feedstocks could be available in 2030. But most of this volume is too expensive to be realistic, even with high subsidies,” said Chelsea Baldino from the International Council on Clean Transportation (ICCT), a green pressure group.

The REPowerEU plan says the production of sustainable biomethane “should be waste-based, avoiding the use of food and feed feedstocks that would lead to land use change problems”. By 2024, EU countries will also have to collect separately organic waste, which can be valorised in anaerobic digestors, the EU executive adds.

But the ICCT's Chelsea Baldino says the availability of sustainable biomass will be limited due to competing uses from other industries such as aviation, which cannot rely on electrification to decarbonise at this point and are betting on advanced biofuels to meet their decarbonisation goals.

Wherever it turns, the EU is faced with the “ecological limits” of biomass. Instead of waiting to hit the brick wall, it should confront the issue head-on and decide now where to prioritise its usage, Euractiv writes.