

REPowerEU and its possible impact on biomethane and organic fertilizers production in the EU

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The biogas sector has been gaining importance in Europe in the recent years. First, because following the Russian invasion on Ukraine, the supply of natural gas seemed to be a major issue threatening stability of many countries. Here, around 90% of EU27 demand is covered by imports, with Russia having 40% of share in imports before 2022. Biomethane is an organic substitute for natural gas – an increase in its production leads to higher self-sufficiency of the EU. Second, because biogases are considered as one of the tools to achieve EU’s carbon neutrality by 2050. Last but not the least, because the digestate, a co-product of biogas production, can be considered as an organic alternative to synthetic fertilisers. In the case of the latter, the EU is heavily relying on imports that cover around 50% of total demand.

From the policy perspective, launched in May 2022, the REPowerEU Plan focused on the ways to reduce the dependence of Russian gas, oil and coal, with biomethane sector playing an important role. The plan foreseen an increase in bio-methane production from 3 bcm to 35 bcm by 2030 (and possibly to and 167 bcm in 2050), following the euro 37 billion investment program. Following the adoption of the REPowerEU, EU member states were encouraged to update their National Energy and Climate Plans to include plans regarding the biogas and biomethane production.

This paper applies the MAGNET model (The Modular Applied GeNeral Equilibrium Tool) to analyse different long-term scenarios related to the proposed increase in biomethane production in Europe. We verify what would be the impact of projected REPowerEU investments (euro 37 billion) on the biomethane production level, as well as the remaining key industries that compete for the same feedstocks (e.g., livestock sector). We also show what amount of investment would be required to achieve the production targets set in the REPowerEU. Finally, we assess the evolution of organic fertilizer (digestate) production and its potential impact on synthetic fertilizer use in Europe. To the best of our knowledge, there are no other papers that explicitly deal with the above issues.