

Revision of EU Air Quality Rules – EBA Comment

Main recommendations:

- The European Biogas Association (EBA) is in favour of studying the feasibility and impacts of revising air quality standards and extending monitoring obligations for member states to other pollutants, for instance methane (CH₄); highlights the importance of anaerobic digestion and renewable gases to prevent methane emissions from agriculture;
- Welcomes the proposal to improve general public's right to more and better information;
- Does not agree setting penalties for non-compliance; recommends adopting more ambitious objectives and encouraging their respect by promoting capacity building activities, including a permanent EU platform/alliance for air quality;
- Highlights the important role of separate collection and recycling of bio-waste to prevent emissions of polluting substances from disposal activities.

EBA welcomes the publication of the roadmap for the upcoming revision of EU rules on air quality and stays ready to be involved in all the consultative activities, workshops, public hearings, conferences and webinars organised by the European Commission and other institutional or governmental actors. EBA is a network of national associations, private companies, universities and research centres. EBA operates in Brussels for more than 10 years and it allows politicians, public authorities, investors and other stakeholders to exchange information, ideas and statistics with the European main players of the renewable gas sector.

Our partners are experienced engineers, researchers, lawyers, business managers, agriculture practitioners and plant operators. Renewable gas is a multi-disciplinary and cross-sectoral activity that involves many different actors across the whole society. Nevertheless, the value chain of renewable gas is usually national or regional. Renewable gas is a powerful enabler of circular economy and local sustainable development. All the actors operating in renewable gas are moved by an inner desire of sustainability and we believe that renewable gas should be a cornerstone of the European Green Deal vision. We expect that production and consumption renewable gas will continue to grow in Europe in 2030 and 2050¹ because it is a clean source of renewable energy that is crucial in many economic sectors. Heavy duty transportation, maritime and aviation rely to a very large extent on renewable gas to decarbonise and depollute their operations and products. At the same time, renewable gas offers great opportunities for heating and cooling; energy intensive industries and the power sector.

Differently from other renewable energy sources, renewable gas can be stored more easily and more safely than electricity. It therefore provides more flexibility. As a matter of fact, renewable gas also offers opportunities for consumers that are not connected to the gas grid to meet their heating and cooking needs. For rural areas that are located off-the-gas grid, renewable gas offers a cost-effective heat decarbonisation solution for domestic and industrial uses. A significant share of rural dwellings in the EU currently rely on oil and coal for heating purposes. Switching away from more polluting fuels to renewable gas offers CO₂ savings and improves local air quality.

¹ European Commission (2020), *Impact assessment accompanying the document "Stepping up Europe's 2030 climate ambition"*, SWD(2020) 176 final

EBA is in favour of studying the feasibility and impacts of revising air quality standards and extending monitoring obligations for member states to other pollutants. Ambitious targets are a good instrument to ensure better air quality. However, it is too soon to share a more accurate opinion, given that the European Commission's document refers to WHO guidelines that will be adopted in spring.

Clearly, reduced economic activities and individual movements due to the pandemic situation, in 2020, have generated benefits for the quality of the air we breathe. It would be desirable that in the next 10 years these positive trends could be observed again. As renewable gas operators, we suggest that proper waste management based on more separate collection and recycling, and renewable gas (BIO-LNG; BIO-CNG) would help to clean the air from emissions of pollutants such as CO, NO, SO₂, PM₁₀ and PM_{2.5}². Separating bio-waste allows not only to directly prevent emissions related to their disposal. Additional benefits are the reuse of important nutrients in agriculture and horticulture - e.g. nitrogen, phosphorus and potassium - and organic matter that restores the quality, health and fertility of the soil through compost and digestate. This generates additional indirect benefits because the use of mineral fertilizers is reduced and emissions related to the extraction of raw materials - e.g. phosphate rocks - are prevented as well as emissions from their transport, their processing in industrial plants and the transport of finished products. Bio-waste separate collection is in fact the first rule of the circular economy for a recycling society, a cleaner environment and a more fertile soil.

The second proposal of the European Commission foresees to extend the obligations of the directive to give the general public more and better access to information and to introduce penalties for non-compliance with air quality obligations. While we agree that the rules should improve transparency, we doubt that introducing penalties will provide a considerable incentive to achieve the targets. We believe that the objectives set by the directive must be more ambitious to ensure greater protection of health and the environment. However, we also recognize that the conditions for verifying their compliance are suitable. We therefore recommend adopting more ambitious objectives and encouraging their respect by promoting capacity building activities; adopting guidelines; organizing seminars and workshops to share good practices; financing the development of clean technologies. We also recommend incentivising member states to adopt tariffs that promote good practices such as separate collection and recycling and discourage bad practices that require large disposal capacity. The disposal options are in fact energy-intensive, resource-inefficient and polluting.

Finally, we welcome the European Commission's proposal to extend the monitoring obligations to pollutants that until now were excluded from the directive's obligations. We expect methane (CH₄) to be among these, given the interest showed to reduce CH₄ emissions in 2019 and 2020 and given the European Commission has adopted a strategy to prevent such emissions. EBA participated in all the consultations and workshops that The European Commission held to adopt that strategy. We take this opportunity to thank the European Commission for every moment for collaboration and for transparency. Since introducing monitoring obligations for new pollutants will require member states to modify their national plans, we stress again that we recommend encouraging the exchange of good practices between member states and operators from different industrial sectors. It would be useful to set up an alliance, working group, round table or a platform that also includes civil society, NGOs,

² Suarez-Bertoa et al (2019) *On-road emissions of passenger cars beyond the boundary conditions of the real-driving emissions test*. The authors highlight in a comparison in real-driving emission that a CNG van is less impacting than all other diesel and gasoline cars, regardless that it weights twice as much as the passengers cars.
<https://www.sciencedirect.com/science/article/pii/S001393511930369X>

trade associations, researchers and scientific community, investors and international organizations (WHO, UNEP, UNECE, OECD). This would allow regular meetings and to achieve more ambitious goals at the lowest cost and in the shortest possible time.

The main outputs of bio-waste recycling are compost and digestate. Compost and digestate are stabilized and sanitized organic matter that are widely and safely used for improving quality, health and fertility of soil (Figure 1). Due to its higher nutrient content, digestate is used as an organic fertiliser with soil improving effects^{3, 4}.

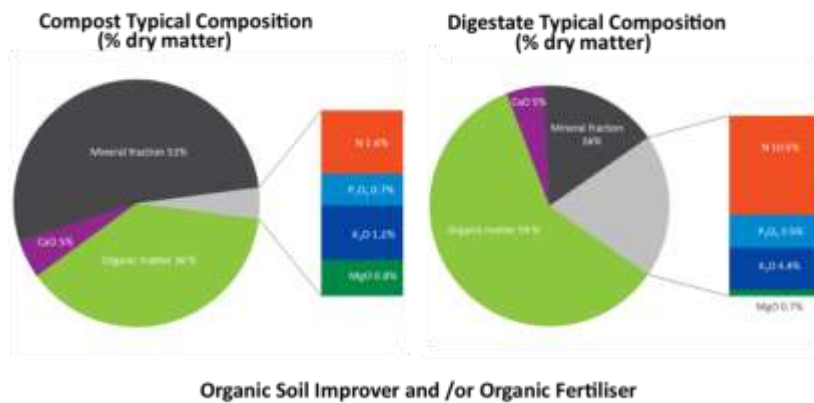


Figure 1: Typical composition of compost and digestate from bio-waste⁵

The main benefits of compost and digestate application to land are seen in the medium-to-long term (Figure 2). They replenish the fertile layer of humus in the soils. When soil is rich in humus, it can store more carbon and additional benefits materialise, such as enhanced water holding capacity; improved soil structure which reduces the risk of erosion; fostered nutrient exchange capacity which reduces the risk of nutrient loss; and increased microbial activity in soil which reduces the risk of disease⁶.

³ The European Compost Network has published two new factsheets on 'Soil Structure & Carbon Storage' and on 'Soil Fertility & Productivity' in its publication edition on the 'Sustainable Use of Compost and digestate'.

<https://www.compostnetwork.info/two-new-factsheets-on-the-sustainable-use-of-compost-published/>

⁴ The EU Fertilising Product Regulation establishes minimum quality and safety requirements for compost and digestate for being used as an organic soil improver or organic fertiliser.

⁵ ECN 2019: ECN Status Report 2019. Overview of bio-waste collection, treatment & markets across Europe. <https://www.compostnetwork.info/download/ecn-status-report-2019-european-bio-waste-management-overview-of-bio-waste-collection-treatment-markets-across-europe-2/>

⁶ Gilbert, J., Ricci-Jürgensen, M. and Ramola, A. (2020) Benefits of Compost and Anaerobic Digestate When Applied to Soil, ISWA, Rotterdam. https://www.iswa.org/index.php?eID=tx_bee4memberships_download&fileUid=295



Figure 2: main benefits of compost application to land

Another clean source of digestate is biomass. Agriculture is a major contributor of renewable energy. In 2010, 10% of renewable energy came from agriculture⁷ and its overall production has increased by 27% in 2018⁸. Renewable energy and biogas production help farmers to manage more efficiently and more effectively their waste and residues, thereby reducing the risks from pollution and valorising the organic resources from farmland. Anaerobic digestion can also create local jobs. Between 200 000 to 275 000 direct jobs and another 300 000 to 400 000 indirect jobs could be created by 2030⁹.

Rural areas cannot rely exclusively on landscape features in the future. Although they have been destinations for tourism and leisure for long time, the COVID-19 crisis has revealed the instability of this sector and the costs involved in adaptation. Rather than relying just on tourism, renewable gases empower the rural areas to diversify their activities and develop the local circular economy, for instance through nutrient recycling and reuse innovation.

Health, fertility and quality of soil are also crucial elements for the long-term sustainable development of rural areas. Sustainable renewable gas production through for instance the Biogasdoneright approach aims to restore soil quality and is based on two elements:

- 1) Adopting cover crops
- 2) Recarbonising soil with digestate which replaces the use of mineral fertilizers



⁷ European Union, Renewable energy in EU agriculture EPRS | European Parliamentary Research Service

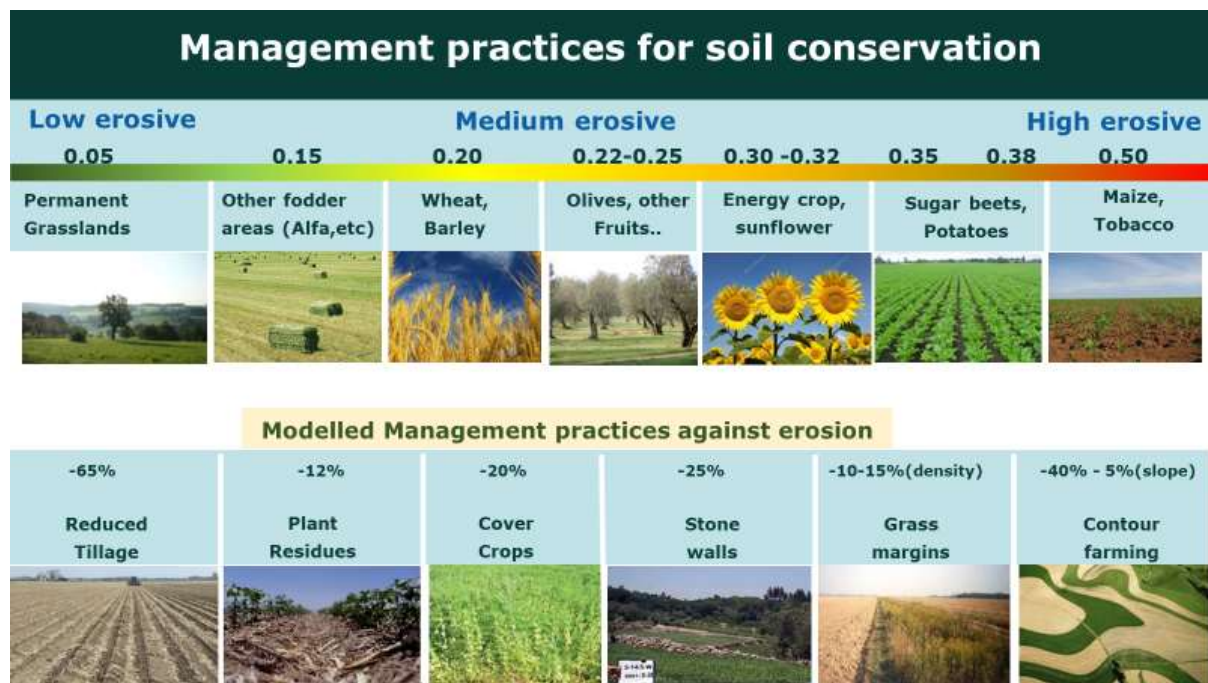
⁸ Eurostat – SHARES (Renewables)

⁹ Guidehouse (2019), *Job creation by scaling up renewable gas in Europe. Gas for Climate*
https://gasforclimate2050.eu/?smd_process_download=1&download_id=275

Cover crops¹⁰ are part of a farming system where an additional (second) culture is grown before or after the harvest of the main crop on the same agricultural land with the aim of enhancing soil quality and fertility by preventing soil erosion (see Figure 3) and compaction due to climate factors - e.g. floods or draughts, frost or burnt - and by promoting soil biological, chemical and physical activity. Cover crops are not normal winter crops or grassland but are sown specifically to protect bare soil in winter - and early spring - after the harvesting of summer crops.

The economic interest of the cover crops is low – its main goal is to protect soil and nutrients. However, their value increases if renewable energy policies allow their use for renewable energy production¹¹ and if incentive schemes recognise their land-based carbon removals.

Figure 3. Management practices for soil conservation



Source: Panagos et al (2020), Soil-related indicators to support agri-environmental policies

Anaerobic Digestion is also an important solution to prevent methane emissions from manure. The fermentation of farmyard manure in biogas plants is an efficient way to reduce agricultural greenhouse gas emissions from storage tanks for manure. According to the German Biogas

¹⁰ Panagos et al. have assessed the beneficial effect of cover crops to prevent soil erosion. They concluded that by extending cover crops to 35% of European arable lands would allow to reduce risk of soil erosion by 40%.

Panagos et al. (2015), *Estimating the soil erosion cover-management factor at the European scale*
<https://www.sciencedirect.com/science/article/pii/S0264837715001611>

¹¹ A study by Navigant from 2019 outlines the renewable energy potential in Europe from cover crops. They call them sequential crops. Navigant estimates that with sequential crops it can be possible to produce 41 bcm of natural gas equivalent of renewable gas – i.e. biomethane.

Navigant (2019), *Gas for climate. The Optimal Role of Gas in a Net Zero Emissions Energy System.*

<https://www.europeanbiogas.eu/wp-content/uploads/2019/11/GfC-study-The-optimal-role-for-gas-in-a-net-zero-emissions-energy-system.pdf>

Association, this utilization already saves greenhouse gas emissions of about 2.19 million t CO₂ equivalents each year in Germany.

Perennial crops could also offer many benefits for soil protection, prevention of erosion. Many perennial crops offer an alternative pathway to achieve the target of land degradation neutrality and ongoing research is already offering interesting results. Silphium Perfoliatum, Sida and perennial energy grasses (e.g. tall wheatgrass, reed canary grass, etc.) have the advantage that they will not require tillage and at the same time they provide a year-round soil cover which creates a habitat for wild animals and soil biota. These crops have also a high nutrient uptake capacity and thus they are very effective to prevent leaching of nutrients. In addition, cultures such as Silphium Perfoliatum form colourful flowers and offer a good habitat for pollinators.