

RECOMMENDATIONS

Review of the Urban WasteWater Treatment Directive

13th March, 2023

Anaerobic digestion of sewage sludge: seizing the opportunity to contribute to the RePowerEU and Circular Economy Action plans

The European Biogas Association welcomes the European Commission's proposal for a revised Urban Wastewater Treatment Directive¹ published on the 26th of October 2022. The original 1991 UWWTD² led to a significant reduction of pollutant releases and a massive improvement in the quality of EU rivers, lakes and seas. Today, the proposal of the European Commission reflects the positive externalities that the urban wastewater treatment sector can offer for the environment and climate change mitigation, notably in terms of renewable energy development and nutrients recovery. In addition to the financing already identified by the European Commission in its proposal, a dedicated European Water Fund will be needed to help support such a level of transition for the wastewater treatment sector.

Considering the urgent need to address high energy prices and to reduce dependency on Russian fossil fuels, the European Commission set an ambitious target of **35 billion cubic metres (bcm) of biomethane produced per year by 2030 in its RePowerEU Plan**³. Anaerobic digestion (AD) represents an opportunity for the urban wastewater treatment sector to pursue energy neutrality and reduce emissions of process gases (methane), largely contributing to the footprint of wastewater operations. The energy neutrality obligation included in article 11 of UWWTD recast is coherent with the EU energy security priority and will contribute to climate change mitigation. The biomethane production potential from sewage sludge will reach **2 bcm per year by 2030**⁴ (and **11 bcm** counting industrial wastewaters). This volume represents more than the natural gas consumption of Sweden in 2021 and around 6% of the biomethane production target of 35 bcm.

Furthermore, valorising the potential for nutrients recovery from sewage sludge will help mitigating the current fertilisers crisis under the condition that there is a market demand. In this context, mandatory quaternary treatment of urban wastewaters will deliver on societal needs of decreasing the dissemination of the emergent pollutants while in certain cases positively impacting the quality of sludge and, consequently, its potential use.

To further improve the effectiveness of the UWWTD, EBA proposes two main recommendations to the European Parliament and Member States:

1. **Clarify the energy neutrality objective and ensure that all anaerobic digestion business models are taken into consideration (Article 11)**
2. **Support adequately the market of recovered nutrients from sewage sludge by setting demand-side drivers (Article 20).**

¹ [COM\(2022\) 541 final](#).

² Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment.

³ [COM\(2022\) 108 final](#).

⁴ Based on data from the [Gas for Climate report "Biomethane production potentials in the EU"](#) (July 2022).

1. Clarify the energy neutrality objective and ensure that all anaerobic digestion business models are taken into consideration (Article 11)

EBA strongly welcomes the new **article 11** of the UWWTD which introduces an obligation to achieve energy neutrality for all urban wastewater treatment plants above 10 000 p.e. by 2040. Additional treatments prescribed in the European Commission proposal as well as the nutrient recovery processes being very energy-intensive, it is even more necessary to improve the energy efficiency of the UWWT plants.

In that regard, AD must be promoted as a very valuable solution to achieve the energy neutrality objective. There are at least three major benefits connected to implementing anaerobic digestion in wastewater treatment operations:

- (i) AD of sewage sludge is a strong example of **circular economy**. Indeed, AD allows to convert sewage sludge – a feedstock sourced locally that is not in competition with other uses for any value chains in Europe – into renewable energy. Using waste to transform it into a very valuable asset, even more crucial at the time of a global energy crisis, is definitely part of the regenerative growth model praised in the EU Circular Economy Action Plan.
- (ii) AD allows to reduce significantly the volume of the sewage sludge. Indeed, as part of the sewage sludge digested in a biogas plant is converted into biogas, the sludge volume decreases. Since incineration is the most widely implemented disposal method of the sewage sludge, the reduction of the volume of sludge through AD represents a sound opportunity in terms of greenhouse gas (GHG) emissions savings. Scaling-up AD in Urban WasteWater plants would therefore contribute to achieve **climate neutrality**.
- (iii) Thirdly, with a feedstock that can be stocked and digested on demand, AD generates a flexible renewable energy. This prospect is of utmost importance to contribute to **energy security** in Europe.

Nevertheless, several business models for the utilisation of AD in UWWT plants exist in Europe. Due to space constraints or economies of scale, urban wastewater treatment plants often organise into clusters with a single plant being equipped with an AD unit and centralising sludges of the neighbouring plants.

- a) We believe that **Article 11** must remain flexible and allow for the renewable energy used by each urban wastewater treatment plant to be generated onsite or offsite.

The biogas and biomethane sector has proven strongly committed to reduce its methane emissions. This is why we support the inclusion, in article 11, of a methane emission reduction objective for the energy audits of UWWT plants.

- b) Nevertheless, we believe that the reduction of all process gas emissions, including nitrous oxide, should be addressed in **article 11**.

The potential of biogas and biomethane for UWWT plants of larger agglomerations of 100 000 p.e. and above is particularly strong and in compliance with the energy neutrality objective of article 11, more and more UWWTD plants using AD could become energy positive.

- c) In order to reach the RePowerEU target of 35 billion cubic metres of biomethane produced per year by 2030 and to facilitate the uptake of renewable fuels, **Article 11** must authorize injection of biomethane into the grid or production of Bio-LNG and Bio-CNG.

It must be noted that in several Member States, data on biogas production from Urban Wastewater Treatment are less available and, in some cases, only estimates on the number of plants and biogas production volumes exist. Biogas production from sewage sludge is often not encouraged and the track records are of poor quality.

- d) The monitoring of the energy neutrality target by Member States referred to in **article 11** should be reported in the National Energy and Climate plans to increase coherence and understanding of the pathways to climate neutrality.

2. Support adequately the market of recovered nutrients from sewage sludge by setting demand-side drivers (article 20)

EBA strongly supports the inclusion of the new **article 20** in the UWWTD which promotes the prevention, re-use and recycling of sludge. We believe that recovered nutrients from sludge can be an alternative to mineral fertilisers.

Following Russia's invasion of Ukraine, Europe has been experiencing an unprecedented energy crisis. Due to the EU's dependency on a major energy supplier, farmers have been faced with fertilisers shortages or high prices. With a 149% price rise in September 2022 on a year-to-year basis for nitrogen fertilisers⁵, experts have been concerned that food security could be jeopardised in the coming years⁶. In its communication on "Ensuring availability and affordability of fertilisers" published on 9/11/2022, the European Commission emphasized the need to *"extend efficient nutrient recycling of organic waste (e.g. livestock manure, anaerobic digestion, sludge and other organic waste streams) into renewable bio-based fertilising products"*.

We are convinced that organic fertilisers based on recovered nutrients from sewage sludge have an essential role to play as efficient alternatives to mineral fertilisers. In addition, it must be noted that, in comparison to mineral fertilisers, organic fertilisers also save GHG emissions and contribute to maintain soil health and fertility.

Nevertheless, the European market is still reluctant to consider organic fertilising products produced from sewage sludge mainly because of environmental (e.g. soil quality) and health concerns. At the same time, some alternative sewage sludge management approaches claim to be able to ensure nutrient recovery while controlling contamination. The current proposal includes a quaternary treatment step to treat micropollutants that is financed by an extended producer responsibility scheme. EBA supports this proposal as it might improve in some cases the quality of the sludge and can facilitate the recuperation of essential nutrients.

However, the current proposal lacks a clear signal to stimulate the market of products based on recovered nutrients from sewage sludge.

⁵ European Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Ensuring availability and affordability of fertilisers, COM(2022) 590 final/2.

⁶ [SWD\(2023\) 4 final](#).

- a) We believe that **article 20** must promote demand-side drivers to support the market of products based on recovered nutrients. The upcoming **Integrated Nutrient Management Action Plan**, which aims at reducing nutrient losses by at least 50% by 2030, could also set a target for the use of recovered nutrients from sewage sludge by Member States.
- b) In the interest of policy coherence, the delegated act for sewage sludge reuse and recovery should be aligned with the Circular Economy Action Plan, the Fertilizing Products Regulation, the upcoming Integrated Nutrient Management Action Plan, the recast of the Waste Framework Directive as well as the future recast of the Sewage Sludge Directive.

Contact

Giulia Laura Cancian – EBA Secretary General cancian@europeanbiogas.eu

Lucile Sever – EBA Policy officer, Circular Economy Lead sever@europeanbiogas.eu

About EBA

The European Biogas Association is the voice of renewable gas in Europe since 2009. EBA advocates the recognition of biomethane and other renewable gases as sustainable, on demand and flexible energy sources that provide multiple knock-on socio-economic and environmental benefits. Supported by its members, EBA is committed to work with European institutions, industry, agricultural partners, NGOs and academia to develop policies which can enable the large-scale deployment of renewable gases and organic fertilisers throughout Europe, supported by transparent, well-established sustainability certification bodies to ensure that sustainability remains at the core of the industry. The association counts today on a well-established network of over 200 national organisations, scientific institutes, and companies from Europe and beyond.