

EBA position on EU's heating & cooling policy

The European Biogas Association (EBA) strongly supports the European Commission's plans to establish a common EU strategy for the heating and cooling sector. An estimate 46% of the European energy consumption is destined for heating and cooling, a sector which has an 80% dependency on fossil fuels. Natural gas has the largest share, producing 47% of the total energy in this sector. In order to decarbonise heating and cooling in a cost-effective manner – by maintaining the existing infrastructure – the EU should promote further production and use of biomethane, which is the only renewable alternative to natural gas known so far. Also other renewable energy sources, including raw biogas fed into CHP units, could significantly contribute to an increased share of renewables in this heavily fossil dependent sector.

EBA is convinced while applying conservative estimates that **by 2030 the overall potential for biogas production from anaerobic digestion** is at least 30 billion m³/year. **Taken together with biomass gasification, an estimate for the total production of biomethane is 50 billion m³ per year.** By 2030, the industry could produce renewable energy equivalent to approximately **10% of the EU's current natural gas consumption**, for electricity generation, heating/cooling and as a transportation fuel¹.

As the table of the Joint Research Centre (JRC) below indicates, biogas and biomethane can reach greenhouse gas emission savings of over 200%² in several energy sectors as a result of improved agricultural management. Thus, increasing the deployment of biomethane by a few percentage points would already result in notably greater emission reductions in the heating and cooling sector.



Table 1: Greenhouse gas emission savings (%) compared to EU fossil fuels (EU electricity mix/natural gas). Source: JRC (2014)

¹ GreenGasGrids: Proposal for a European Biomethane Roadmap, 2013

² If feedstock is composed only of manure; most agricultural biogas plants co-digest manure and crops which can also result in over 90% savings



Energy security through biogas and biomethane

Other benefits of the use of biomethane/biogas as a heating fuel include improved gas security of supply: the renewable gases are domestically sourced fuels that can be produced anywhere in Europe, thus avoiding gas imports from third countries and politically unstable regions. Various biodegradable residues and wastes can be used as feedstock including for example animal manures and other agricultural residues. Therefore, farmers can generate energy on-site with own residues and reach energy self-sufficiency, not only for their own farm, but also for the local communities. In addition, biomethane can make full use of the existing natural gas infrastructure and equipment: the gas grid, CHP units and domestic gas boilers. Biomethane is also, as natural gas, a flexible and storable energy source. Finally, in urban areas, biogas fed into CHPs can easily contribute to powering district heating.

How to make it happen

In order to realise the potential of biomethane and biogas as well as all their benefits, the EU needs to impose an ambitious policy framework and legislation to increase the amount of <u>all</u> renewables in the heating and cooling sector. This means indicative targets or benchmarks on renewable energy in the heating sector for each Member State for the decade 2020-2030. Member States should also be required to report about the sectoral share of renewables in their national reports to the European Commission, what would make it easier to detect progress and imbalances in deployment. In addition, there should be consequences for Member States if they do not fulfil their tasks.

More specifically in the biogas sector, the Commission should encourage Member States to maximise the full efficiency of their biogas plants through optimal **support for heat recovery**. The easiest way to valorise heat from CHP installations at biogas plants is to use it directly at the biogas plant and in surrounding buildings or to feed it into district heating systems. In general, any support schemes should as well acknowledge the important role that biomethane plays in decarbonising the European energy sector: current national support schemes, set up for renewable energies, tend to be limited to green electricity while green gas is often left outside these systems.

Furthermore, in order to effectively substitute a part of the natural gas supplies, **biomethane needs a common European market**, i.e. a possibility to be traded across the EU's internal borders. At the moment such trade is impossible due to the European mass-balancing requirements that do not take the specific requirements of the gaseous biofuel into account. In order to enable proper administration for mass balancing of injected biomethane, it is necessary that the European Commission defines the natural gas network operated on the territory of the European Union as a single, integrated unit, i.e. as a closed logistical facility with specific regard to mass-balancing of biomethane injected into the natural gas system. This must be accompanied by an independent, transparent documentation scheme for mass-balancing of biomethane within the European natural gas network.

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Suggestions for best use of incentive mechanisms

The aim here is to ensure that the use of the heat is not primarily aimed at generating the maximum income from the support mechanism. Otherwise there is a risk that the support schemes will lose credibility with the tax paying public.

- Equipment used to produce heat should be new or properly retrofitted. This should ensure the best efficiency at the plant.
- Each project should displace the use of fossil fuels.
- Thermal efficiency of equipment and piped heat to be at a minimum standard.
- The process or building to which the heat is supplied should be insulated to the highest standard available.
- The heat carrying medium should be easily metered, and be restricted to liquid and steam, but not air.

Best practices for the heating use of biogas

Outdoor pools in Germany: several outdoor swimming pools in Germany are heated by climatefriendly biogas. One example is a pool in Hirschau in Bavaria that saves yearly around 170.000 litres of heating oil and therefore also 420 tonnes of CO_2 through the use of heat from biogas. Read more here (in German).

Thermal health spa in Austria: The spa and saunas at Tauern Spa in Austria are heated by biogas from a neighbouring plant that produces both, biogas for CHP and biomethane for grid injection. Read more <u>here</u>.

Municipality of Trebon in the Czech Republic: Biogas produced in three local digesters passes through a 4,6 km long pipeline to the resort village. Locally, the gas is used in a cogeneration plant with the capacity of 820 kW to generate heat and electricity. All excess heat is used in spa and wellness centre. Electricity is fed into the network. The CHP is located in the immediate vicinity of houses and is particularly well sound-proofed. Read more here.

Vale Green Farm, Evesham, United Kingdom: Heating for a 5 hectare industrial greenhouse is provided from biogas. The feedstock for the digesters is agricultural waste. The total installation is equipped with a CHP unit and a Biogas upgrading unit. The CHP unit provides electricity and heat in the winter. The biogas upgrading unit (450 Nm³/h) provides two value streams: Biomethane, that is injected into the grid and sustainable CO_2 that is used as an extra fertiliser in the greenhouse.

Dairygold, in Mitchelstown, Ireland: a large dairy processor, Dairygold, has installed a large AD plant to treat dairy processing waste waters, cutting CO_2 emissions by 1900 t/year with a renewable energy benefit on the order of 10% of the site's heat demand. Heating requirements in waste water treatment are in general very high, and biogas can be a significant factor in reducing fossil energy demand. Read more <u>here</u> (Gabriel Kelly's presentation).

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