



Summary Progress Report Biogas-E 2014

European Union Directive 2009/28/EC aims to increase the share of renewable energy sources in the total European energy consumption and production. With this Directive, the EU strives at attaining several sustainability targets, among others reducing the emission of greenhouse gases (important for climate change), conserving non-renewable resources and the development of a knowledge industry, economic growth and employment among others in the country side. The overall binding targets of this Directive are as follows: 20% for the share of renewable resources in the total energy consumption; at least 10% for the share of biofuels for transportation to be realized by every Member State; and to realize by 2020 binding national targets in agreement with the general EU target of 20%. All Member States proposed national action plans in 2010. For Belgium the target is 13% renewable energy by 2020. To reach this objective, a number of sub-targets were defined: 21% for green power, 12% for green heating and cooling, and 10% for transportation. The Flemish Government has issued a policy objective of 10.5% renewable energy by 2020. For biogas the sub-target has been fixed at 760 GWh green power production by 2020.

Biogas, produced from biomass by anaerobic digestion, contributed with an output of 602 GWh in 2013 significantly to the production of green energy in Flanders, amounting to 9.7% of the gross green energy production. This is an increase compared to last year, when the share of green power from biogas was 8.5%. Biogas can be produced from various biomass sources, mainly organic biological waste. Hence anaerobic digestion is not only a renewable source of energy, but also a step in the valorization of residuals and waste streams. Flanders has an international leading position in the processing of organic wastes with concurrent energy recovery. The unique challenges in Flanders (strict norms for nutrient processing, spatial planning, available biomass sources) pioneered many innovative solutions and qualitative employment. Until now most of the biogas in Flanders is energetically valorized through cogeneration of energy and heat.

The diverse facets of biogas are however not sufficiently well known, therefore Biogas-E strives to emphasize them even more: decentralized energy production, green heating and cooling, an energy balance in equilibrium, an easily manageable energy carrier, nutrient recycling, waste stream processing and above all sustainability. In addition, the biogas sector realized a more efficient use of input streams and avoids manure transport to other regions. The resulting digestate can also be used as green fertilizer.

Next to the well-known CO₂-reduction as a consequence of reduced primary energy usage, anaerobic digestion has another advantage by reducing greenhouse gas emissions (CH₄) from the intensive cattle breeding sector. Indeed, frequent collection and rapid processing of fresh manure from cattle breeding not only results in significantly higher biogas yields per ton of manure, but it also limits 'natural' methane emissions from the manure pit to the atmosphere. Because the global warming

potential of CH₄ on a 100-year basis corresponds to 25 times that of CO₂, any small gain in reducing methane emissions from cattle breeding implies a significant gain in overall greenhouse gas emission reduction. For this reason, the biogas sector has an enormous added value in terms of CO₂-reduction, despite the rather limited magnitude in terms of business units.

In 2013, the biogas sector processed 1,022,010 tons of organic-biological waste. In doing so, the sector did not only tackle a societal waste problem, but it also created a positive economic value through the creation of a market for residuals streams from various agro-food related sectors. Indeed, in the past five years, the organic-biological waste treatment has changed from a processing cost (negative value) for the food sector to an additional source of income through the marketing of energy rich organic-biological wastes. The international position of the food sector, the second largest economic activity in Belgium, is thus strengthened.

At present there are 40 digesters in Flanders, with a total capacity of 2,513,000 ton/year and a total installed power of 102.56 MWe. The net green power production from biogas amounts to 602 GWh, an increase of 94 GWh compared to last year. Despite the fact that the number of digesters stagnates, the output continues to increase, which means that the digesters are working more efficiently and make better use of their installed capacity. This is however in stark contrast with the fact that seven installations have been shut down or are in stand-by, two because of a take-over and one because of repairs. Four digesters went bankrupt, two of them have even been dismantled. These figures show that the sector finds itself in heavy weather. Various factors have contributed over the past couple of years to an increased insecurity and lower financial returns: (i) availability of biomass and raise of raw material prices, (ii) more difficult marketing of and higher costs for processing digestate, (iii) low commodity prices for electricity on the Energy Index in comparison with previous years, (iv) insufficient governmental support for green energy from biogas.

Biogas-E does not believe in a blind raise of support but strives towards the following important improvements:

- Reducing the dependency on subsidies for biogas by making companies intrinsically more profitable, partly through technological innovations (e.g. biomethane production and usage) but also through adjustments in the administrative procedures (e.g. more timely compensation of VREG certificates, changing the statute and hence marketing cost of digestate). Also dual fuel and intra-day trading of power offers opportunities.
- Correctly awarding the truly necessary support without capping it.
- The 10-year support period is too short. Although there is a possibility to apply for an extension, the procedure for that is unclear and is initiated too late. Past experience has shown that it is difficult to survive without support. This situation is worrying for the biogas sector. Biogas-E therefore requests a clarification of the extension procedure by means of an interactive stakeholder consultation.

Also for the future Biogas-E foresees an increasingly difficult path for new projects and realizations: the environmental legislation is continuously becoming more strict and problems remain with neighborhood protest, network connection and financing. Biogas-E also sees a need for innovation aimed at biogas as biorefinery, with the concurrent production of not only green power but also other renewable resources, such as mineral fertilizers.

The biogas sector in Flanders has an important economical and societal added value. The societal task of the sector, i.e. contribute to the realization of the European renewable energy and climate targets, is clear. In addition the sector not only produces green power, but also an important share of green heat. Moreover, the sector has many additional functions related to waste management, nutrient processing and employment. In comparison with other environmental and energy generating technologies, this sector does create local employment and a symbiosis with the Flemish economy. Not only by the exploitation of digesters, but among others via the waste sector, consultancy companies, construction companies, research centers and analytical laboratories, whereby invested capital reinforces the further development of the Flemish economy. In this way most of the support for green power is reinjected in the Flemish economy.

If the societal advantages of integrated waste management and renewable energy production are counted together with the economic advantages, then the anaerobic digestion sector in Flanders will continue to fulfil its societal role as sustainable resource manager and renewable energy producer.