



# BIOGAS INDUSTRY CHARACTERISTICS IN LATVIA

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## Introduction

Today, energy has become one of the most important guarantors of the competitiveness and independence of the national economy. Latvia is rich in renewable energy resources, which are currently not used to a sufficient extent for energy production in the country. The use of indigenous energy sources in energy production must be encouraged.

The share of renewable energy in electricity generation in Europe is low, but in the European Union's long-term plans and energy policy, which aims to control the energy consumption of fossil fuels and promote the production of energy from renewable sources. Electricity from biogas, solar, water and wind are the dominant forms of renewable electricity, which will reduce the country's dependence on energy imports, increase security of energy supply and reduce air pollution.

The production of agricultural biogas, as well as biogas from water treatment and landfills, has a positive impact on the environment by reducing greenhouse gas (GHG) emissions. Methane produced in biogas fermenters is burned to produce renewable energy and emits less carbon dioxide than burning fossil fuels.

**The aim** of the study was to analyze the production parameters of biogas plants in Latvia according to the latest publicly available data, and to determine how much electricity is produced.

### Tasks of the research:

1. To find out how much renewable energy is produced by the existing biogas plants;
2. To find out the future perspectives of the biogas industry;
3. To study the distribution of Latvian electricity by sources.



## Methodology

**Research methods:** The numerical data to be analyzed and interpreted were taken from secondary data sources, which are published in public reports of public administration institutions. Data on installed electricity capacity and number of biogas plants are for 2020 and 2021.

**Data source:** Ministry of Economics; State Construction Control Bureau; High voltage distribution network; Latvian Biogas Association.

The collected data were used to analyze the distribution of biogas plants by type of raw materials and installed electrical capacity of the plants.

## Results

In 2021, there are 46 biogas plants left in the Mandatory Procurement. 39 agricultural biogas plants with a capacity of 41.60MW (77.35%), 5 municipal landfills 8.88MW (16.51%), 5 food waste biogas plants 5.33MW (6.14%).

Biogas plants operating in 2021 without the Mandatory Procurement have a total capacity of 3.01 MW and consist of 3 plants that sell electricity at the exchange price or use it for their internal electricity supply. Compared to 2019, in July 2021, the number of biogas plants has decreased by 5 biogas plants.

According to the data on electricity generation in 2020, the amount of net electricity consumed in Latvia in 2020 was 7,135,520 MWh, the average electricity exchange price in the Latvian area decreased to 34.05 EUR / MWh. Using local generation, Latvia covered 77% of electricity consumption.

In 2020, 1,256,195 MWh of energy was produced in renewable energy equipment, which was 22.8% of the total electricity generated in Latvia. The share of electricity from biogas cogeneration was 5.6% or 309,070 MWh of electricity.

## Conclusions:

1. In September 2020, Cabinet Regulation No. 561 entered into force for a part of biogas plants, replacing No. 261, where there are new requirements regarding the efficiency of cogeneration - the ratio of produced electricity to useful heat. From this ratio, the efficiency of the biogas cogeneration plant is calculated, which is a precondition for a stable income from the Mandatory Procurement. Due to efficiency requirements, some biogas plants may have chosen to reduce the amount of electricity generated in order to balance the efficient use of heat;
2. The Compulsory Procurement tariff has been reduced for several biogas plants since 2021, which may also be the reason for the reduction of the amount of electricity transferred to the network;
3. Biogas produced in biogas plants is used as a fuel in boilers and not in cogeneration plants. There are also producers who purify biogas to biomethane and use their farm in vehicles while planning to sell it on the market;
4. There are biogas plants that have terminated their cooperation with the Public Trader and use the produced electricity for their own consumption. Electricity produced from these biogas plants is not yet included in the total national production.