



Local biogas co-generation alimenting greenhouse complex

Riga, Latvia – 641 423 inhabitants

Biogas – Food production - waste landfill

The Greater Riga municipal solid waste landfill site called Getliņi is located outside the administrative territory of Riga city in the Stopiņi rural municipality. Since 2002, the landfill produces biogas, which is utilised in a cogeneration station.



Credits: Riga Municipality

Project in a Nutshell

The annual quantity of electricity produced is in the range of 30-34 GWh that is delivered to the power network. Since the landfill is located relatively far from the city centres and higher zones of heat consumption, it was necessary to develop an optimal, economically justified solution for heat utilization. Heat produced by the cogeneration plant was used for the infiltrate reactor technological processes, for heating the office and auxiliary premises and for hot water preparation. The heat surplus was discharged into the atmosphere.

To expand the appropriate use of heat energy produced in the cogeneration plant, in 2012, a modern greenhouse complex was developed in the landfill Getliņi and a second construction round was completed in May, 2014. The total floor area of the greenhouse complex is 11 448 m². Agricultural products with high market value - tomatoes (base product), also strawberries and flowers are produced there. Products are delivered to the store chains in Latvia.

Impact & Next steps

In the last years, the company Getliņi EKO jointly established by the Riga and Stopiņi Municipalities, received around 300 000 tonnes of waste per year and produced around 15 000 million m³ of biogas per year, allowing further production of 34 GWh of electricity. Taking into account that natural gas is used for electricity production in large combined heat-power plants, biogas use then provides approximately 16 thousand tonnes of CO₂ emissions savings per year. Additionally, thanks to the heat generated, the greenhouse can produce around 50 kg/m³ of tomatoes.

In order to reduce the amount of waste to be disposed, a new landfill has been created with a biogas collection system equipped bioreactor. Its capacity is around 450 thousand tonnes of sorted waste; the methane production potential of the entire bioreactor is estimated up to 58,5 thousand m³.



A biodegradable waste treatment technological complex (biodegradable waste composting in a closed volume, the planned capacity of around 200 thousand tonnes per year) is planned that will provide for the collection of gas generated in the composting process and its transportation to the existing cogeneration unit.

Replicability: Challenges & Success Factors

This is a very good example of an integrated strategy, where waste management, renewable energy and food production go hand in hand, benefiting the local community. Riga's municipality was driven by the need of reaching its 2020 CO₂ emission targets and it did so while promoting regional development. The initiative required high initial investment and technological requirements (hiring the skilled staff for engineering systems maintenance) but thanks to this project, the company Getlini diversified its revenue and increased its performance, providing locally produced food and creating new jobs.

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