Co-funded by the Erasmus+ Programme of the European Union

OPTIMAL USE OF AVAILABLE BIOMASS RESOURCES, RECYCLING AND EFFICIENT USE OF BY-PRODUCTS AND RESIDUES

CORRESPONDING MODULE 5

The technology for biomethane cleaning is like that versus wasteful biogas stations easier.

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Description

The agricultural cooperative of breeders and growers of Litomyšl was one of the first in the Czech Republic to decide to change the technology of using the biogas it produces at its biogas station in Litomyšl. Instead of producing only electricity and heat, they clean biogas for biomethane. The one at the same time pushes into the existing one gas distribution networks. The project also includes the construction of a compressed natural gas (CNG) filling station in the adjacent area in the village of Dolní Újezd. Through this station, the cooperative uses the produced biomethane to power its vehicles and at the same time offers it to the public. This is achieved by technology special ones membranes. As biomethane is qualitatively identical to natural gas, it will be possible to inject it into the existing gas distribution network.

The mentioned the CNG station is located in another area of the agricultural cooperative, which is approximately 9 km away from the biomethane production plant. At this pumping station biomethane can be refuel to both types of vehicles - the agricultural cooperative and the general public in their tanks. There are filling stations connected to the gas distribution network and the transport of biomethane is taken care of by the natural gas distributor gas.

Currently the output is 1,000 kW in electricity, and when 3 of the 4 cogeneration plants are shut down units, we can approximately 360 m^3 of biogas per hour processed into biomethane station, while they get 200 m^3 of biomethane, equiv of earth gas. They can but to choose whether _ produce electric energy or gas – they can be flexible adapt the current

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one as they need.

Such a method of biogas production can be observed in more than 570 biogas stations in the Czech Republic. Until now, however, it has been used in the way that it was converted into electricity and heat in cogeneration units. The solution in Litomyšl is therefore groundbreaking with regard to the use of biogas.

Monika Zitterbartová, executive director of Hutira green gas

Advantages and challenges

The cooperative is for implementation biomethane station decided in 2019. Main reason was maximal use energy from biogas.

Cogeneration has in terms of production electricity efficiency only around 35 percent. Another 30 percent is then in the heat, for which for example in summer we don't have usage. When now goes to the gas company networks biomethane,

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customers ours energy they will use much more.

Biomethane the station should in 10 years operation process 30.6 million cubic meters biogas, that is roughly 3 million cubic meters biogas annually, which means production of 1.7 million cubic meters biomethane annually.

Main data

As for investment costs, we are lucky that there is a gas pipeline near the site, so we only had to build approximately 120 m of the extraction gas pipeline. In total, the investment will amount to approximately CZK 55 million, while part of the project also includes the CNG station, which was built in Dolní Újezd.

Total investment in a biomethane and CNG station should exceed 50 million crowns. By and large parts will cover it subsidy European the Union and the Ministry industry and trade from operational the OPPIK program. Biomethane the station would at the same time had for 10 years of operation process 30.6 million cubic meters biogas, that is roughly 3 million cubic meters biogas annually, which means production of 1.7 million cubic meters biomethane annually.

Further Information

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2. https://www.czba.cz/aktuality/biometanova-stanice-v-litomysli-zahajila-zkusebni-provoz.html
3. https://zajimej.se/biometanova-stanice-litomysl/
4. https://www.izolace-info.cz/aktuality/23130-v-litomysli-vznikne-zemedelska-biometanova-stanice-a.html#.Yjongk2ZO3A
5. https://

www.hutira.cz/cs/media/n_apsali-o-nas/v-litomysli-vznikne-zemedelska-biometanova-stanice-9/

ANNEX - STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

Module Name: The name of the partner: Country:

The name of the module	
Target group involved	
Current information about the topic	
Principles of the specific module	
Basic terms/measures of the module/topic	
Training materials (tasks, case studies, exercises)	
Short description of the materials	
Link of the online resources (film or video resources)	
Specific images (to support the purpose of the resources)	
Duration	
Materials	
No of Learners/Representatives	
Individual or group work	
Step by step guide	