

Biogas production in Crete Technical assistance for Crete, Greece

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Crete is evaluating the potential production of local Renewable Energy Sources (RES) from livestock and other organic wastes that are available on the island. In particular, the island requested the Islands secretariat to investigate biogas-treatment facilities on various input streams and of different capacities taking into account the limitations on the island.

Based on assessment of statistical data, it was found that the biological conversion of municipal organic waste and manure of animals can provide about 65 000 000 m³ biogas, which with a methane content of 55%, the production equivalent per year is 28 MWe continuous.

Based on the information provided, and assuming that all the biomass would be available, 42% of the electricity and 100% of the heat demand could be theoretically generated by biomass.

Considering the context factors of:

- A high number of by-products related to olive growing and
- Important organic streams are cattle manure, crop harvesting residues, and organic by-products from the food industry and a limited amount of household waste,

Two types of biogas-treatment facilities were simulated:

- An agricultural biogas plant which operates with liquid manure, dung, crop residues or energy crops.
- A digestion type plant which operates with biowaste and kitchen waste

The costs and payback periods of both facilities were estimated as part of this project.