

Biogas in the European context-sustainable production, potentials, technology achievements and biogas full speed integration for transportation fuels: Danish case examples

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Biomass for biogas and bioenergy purposes is biodegradable products, wastes, and residues of biological origin from agriculture, forestry, and aquaculture. Future concerns are to evaluate what sources are sustainable biomasses. Biomass comes from a wide range of raw materials that includes forestry wood materials, agricultural crops, by-products from farming and forestry, manure and the organic fraction of waste products as well as a variety of aquatic biomasses. Biomass as a form of renewable energy has the advantage that it can be easily stored, transported and utilized with a flexible load and multiple applications at the place and time of energy and products needed. This makes the biomass unique among renewable energy sources. Biogas can without harming nature and food/feed sectors grow from today's 15-16 mill. Toe oil equivalents to 4 time's higher production in 2030 in EU. Biogas from sustainable lignocellulosic and manure-based biomasses need pre-treatment. This has to be low cost and robust. Case examples of integration of low-cost biomasses from the agricultural, farming and food sectors will be documented and results gained from R&D&D will be highlighted. The utilization of the large-scale production of biogas has to be flexible and dynamic integrated into the rapid growing Renewable Energy sectors in Northern Europe. Biogas is creating the backbone for the transfer towards the full supply of the societies by wind, solar and bioenergy. The storage and flexible utilization of biogas integrated into the Natural gas grid are outstanding. This contains a key role in the transition and disruption situation shifting from fossils towards 100pct. renewables. Biogas utilization in CHP-Combined Heat & Power or biogas upgraded for biomethane to natural gas quality and transported to metropole areas for bus and/or truck transportation fuel will be documented and demonstrated.

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