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Biogas Can Save the CO_2 Accounts of the Transport Sector

Biogas produced on animal manure can make a substantial contribution to the reduction of Denmark's greenhouse gas emissions. The biogas can be used not only for combined heat and power, as it is seen today, but also for the transport sector. Biogas can cover more than 20% of the transport fuel requirement in Denmark.

"Biogas should be given the highest priority compared to other bio-fuels such as bio-ethanol, bio-diesel and willow grown for energy purposes" conclude researchers from DTU (Technical University of Denmark) after having prepared a Life Cycle Assessment on various types of bio-energy.

Not only does biogas replace fossil fuels - and thereby contributes to the reduction of greenhouse gasses - but the animal manure also gives off substantial amounts of greenhouse gasses if it is not degassed prior to soil application.

"Biogas from animal manure stands out as having very high reduction in greenhouse gas emissions and very high fossil fuel savings compared to the conventional storage and soil application of the manure", says researchers Katrine Anker Thyø and Henrik Wenzel, who have made the Life Cycle Assessment.

Further, the report concludes that "biogas from animal manure stands out as having much higher reduction in greenhouse gas emissions than other bio-energy types and resulting in equal savings in fossil fuels."

The Life Cycle Assessment demonstrates that it is possible to drive approx. 100,000 km in a standard family car with the biogas produced from one hectare of maize.

The Life Cycle Assessment compares biogas from animal manure, biogas produced on the basis of maize silage, two types of bio-diesel, two types of bio-ethanol and use of energy willow.

"It is a new and extremely positive fact that biogas supplied to the natural gas network and used for transportation gives a high reduction in the green house gas emissions. In fact the results are so positive that it appears to be substantially more effective to use energy crops for biogas than for bio-ethanol and bio-diesel. Thereby the biogas is a strong solution - also it will avoid affecting the food prices when trying to improve the CO_2 accounts of the transport sector", says Frank Rosager,

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director of Xergi A/S, who has asked DTU to prepare the Life Cycle Assessment for the bio-energy sector. Xergi A/S is owned by Schouw & Co. and Dalgasgroup A/S.

The energy accounts for biogas show substantially better results for biogas than for bio-ethanol and bio-diesel as it takes a lot more energy to produce one energy unit.

At the same time there is an extreme potential in the biogas. At present 5 per cent of the animal manure in Denmark is utilized. If the entire amount of manure is used, biogas can cover 20 per cent of the overall Danish transport requirement shows a report from Teknologirådet (The Danish Board of Technology). In addition to this comes the potential of growing energy crops.

Even if Denmark has not previously used biogas in the transport sector, the technology is well-proven. In Belgium, Italy, Switzerland and Sweden it is possible to fill up the car with natural gas and biogas. Germany - the country with most focus on biogas in the transport sector - has more than 700 gas filling stations with biogas.

Therefore, cars for biogas fuel are also available. All large, well-known makes of cars have biogas models.

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