

International cooperation

Denmark takes part in various task groups through the International Energy Agency. The task group Task 32, part of the IEA Bioenergy Agreement, focuses on biomass incineration, including co-incineration of biomasses and fossil fuels.

By Anders Evald

Task 32 is a good example of a fruitful international cooperation, featuring outspokenness rarely found within a group of representatives from different nations, representing different professional and industrial interests. There is a very free tone within the group and the participants help each other wherever possible.

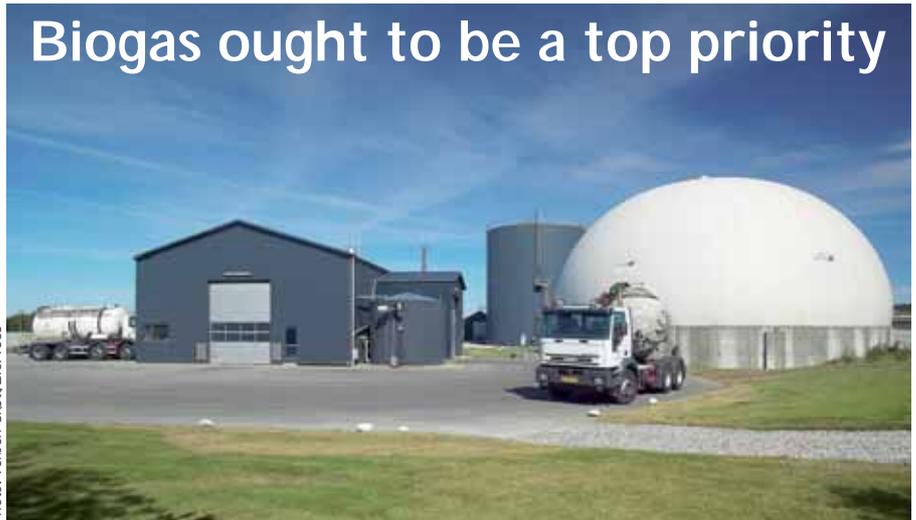
The task group is dominated by European countries, including Sweden, Norway, Finland, England, The Netherlands, Belgium, Germany and Switzerland. Other participants include Canada and at times also the USA and Australia.

The Canadians are quickly becoming more and more aware of the ways that their gigantic biomass resources may be utilised; however, they are working against tough odds, including very low electricity prices and limited possibilities of distributing the heating in common distribution plants.

Five years ago, the task group published the book "Handbook of Biomass Combustion and Co-firing". This book has now been revised and a new edition will be available as of November 2007. At the same time, the book has been translated into Chinese – perhaps a symbol of the fact that the current European interest in and dominance of biofuel research will not last forever.

On the website www.ieabcc.nl, the task group members have compiled a range of presentations, articles and reports, and a newsletter about the work of the task group is regularly distributed by the author of this article. If you want to join the distribution list, please write to aev@force.dk.

Photo: Torben Skøtt/BioPress



When it comes to reduction of CO₂ and substitution of fossil fuels, biogas ought to be a top priority compared to other types of bioenergy. This is the conclusion reached by two researchers from the Danish University of Technology, who have drawn up a life cycle analysis for the company Xergi A/S, a supplier of energy and environment-related plants.

If Denmark really wants to make an effort to reduce the emission of greenhouse gasses, then we need to produce as much biogas as possible. The reason is that not only are biogasses a replacement of fossil fuels and thus a contributor towards CO₂-emission reduction, but also that manure gives off large greenhouse gas volumes, unless it is de-gassed before being distributed on the fields.

This conclusion was reached in a life cycle analysis carried out by Katrine Anker Thyø and Henrik Wenzel from the Danish University of Technology for Xergi A/S. The analysis compares biogas from livestock manure, biogas produced on the basis of maize ensilage, two different types of biodiesel, and the utilisation of willow energy.

According to this report, biogas stemming from livestock manure stands out by leading to a significantly higher greenhouse emission reduction than other types of bioenergy and thus, it is able to replace fossil fuels at a higher level.

Today, only 5% of livestock manure is used for energy production, i.e. the potential is considerable. Taking this

process one step further by including energy crops into the production, biogas once again does very well. In this way, maize ensilage for biogas production and willow usage in CHPs is more advantageous for the environment than if the same acreage was used for crops utilised in the production of ethanol and biodiesel.

100,000 km. on one hectare of maize

The life cycle analysis also showed that a normal family car is able to go around 100,000 km. on biogas originating from one hectare of maize.

Biogas for transport purposes is not included as a solution in the report on alternative fuels in the transport sector, recently drawn up by a cross-ministerial committee. The report talks about natural gas, presented as the cheapest alternative to petrol and diesel seen from a socio-economic point of view.

Whereas biogas has not been considered because it requires pre-cleansing and upgrading procedures, natural gas is ready for immediate use within the transport sector. The committee behind the report thus concludes that it is better to substitute natural gas for biogas in CHPs and utilise the natural gas saved through this substitution for transport purposes.

According to a report published by the Danish Board of Technology, livestock manure is able to meet 20% of the fuel needs within the Danish transport sector. Apart from that, significant gas volumes, which can be produced by growing energy crops such as maize, add yet another advantage. TS