

5.6 Oral presentation.

National incentives and barriers for the energetic use of manure in the Baltic Sea Region

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SUMMARY: *The European Union has set ambitious goals for renewable energy and reduction of greenhouse gas (GHG) emissions. Animal manure can be utilised as a source of renewable energy via different technologies, such as anaerobic digestion (AD) for biogas, combustion and thermal gasification. Manure based biogas is by far the most efficient renewable energy technology to reduce GHG emissions. Simultaneously, the valuable nutrients in manure may be recycled and the environmental burden of manure relieved.*

In this paper, an overview of the main barriers and incentives for the energetic use of animal manure in the Baltic Sea Region (BSR) is presented. The focus is on AD of manure which produces biogas to be used as a source of heat, electricity and/or vehicle fuel. Political approaches, subsidy systems as well as previous development and future objectives in the BSR countries are described and evaluated.

In 2007 the European Council adopted ambitious energy and climate change objectives for 2020 – to reduce GHG emissions by 20%, to increase the share of renewable energy up to 20% and to make a 20% improvement in energy efficiency. In order to reach these aims, local, sustainable potentials for renewable energy have to be mobilised and used.

Animal manure can be utilised as a source of renewable energy via different technologies, such as AD for biogas, combustion and thermal gasification. Especially with AD, the valuable nutrients in manure may be simultaneously recycled and the environmental burden of manure relieved. AD of manure shows particularly high potentials both for reducing GHG emissions and for increasing the share of renewables.

At present (2010-2013), the EU project “Baltic Forum for Innovative Technologies for Sustainable Manure Management (Baltic Manure)” works intensively with opportunities offered by the energetic and fertiliser use of manure. Here, we analyse the incentives and barriers for the energetic use of manure in the Baltic countries with the focus on AD of manure. This enables a comparison of eight European countries around the Baltic Sea (Finland, Sweden, Denmark, Germany, Poland, Lithuania, Latvia and Estonia) in order to identify the most suitable and sustainable approach for the energetic use of manure.

The situation in the countries of the Baltic Sea Region (BSR) varies widely regarding i) the awareness of manure being a resource for energy supply, ii) infrastructural conditions and

iii) financial and administrative support systems. Accordingly, the current energy use of manure for biogas in the BSR varies from none (Lithuania) to several thousand biogas plants using manure as at least one of the substrates (Germany).

In each of the eight BSR countries, a support system based on investment subsidies, tax exemptions, green certificates and/or feed-in tariffs is implemented, but the specific design and the amount of support differ significantly. There are also divergent definitions for the requirements on sustainability and efficiency, which reflects the different backgrounds and political approaches for the development of a biogas sector in the different countries. Currently, the national target for manure based biogas and subsequent support system in Denmark appear to be the most effective in increasing manure energy use via AD. Denmark is heavily investing in new biogas plants in the attempt to have 50% of all manure in energetic use by 2020. Also, the German tariff system has resulted in 7000 biogas plants and the amount of manure utilised is increasing. The Swedish, Polish and Latvian support systems have also resulted in increased manure based biogas, while those of Finland and Estonia are less effective and Lithuania has no biogas plants utilising manure at the time of writing.

The main barrier for implementing / increasing manure use in biogas plants in the whole BSR is the poor profitability. The national incentive systems often do not lead to a sufficient improvement of the plant economic situation. Also, the real environmental benefit from manure based biogas is not fully compensated in the incentive systems. Further, insecure long-term perspectives in manure and renewable energy related policies can deter potential investors, and lack of knowledge on manure based biogas hinders the development of energetic use of manure. In some countries, also attitudes towards manure based biogas, especially large biogas plants, may slow the development down, as the general public is concerned e.g. about foul odours and increased traffic.

The energetic use of manure is gradually growing within the BSR, but there are significant differences between countries. The potential to simultaneously produce renewable energy, recycle nutrients and decrease the environmental impact of manure via AD should be noted in all BSR countries and the conditions for implementing this potential improved. Overall, due to very low volumes of manure being currently used energetically, there is a potential of more than 150 million tons of manure in the BSR to be mobilised and harnessed for renewable energy production.

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