

Seminarium Biogaz 2009

**Produkcja i wykorzystanie
biogazu rolniczego
Przegląd krajowych prac
i możliwości wykorzystania
doświadczeń europejskich
w Polsce**

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EXPO XXI w Warszawie**

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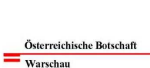


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Biogaz '2009 Summary

The first international seminar in Poland specifically dedicated to the biogas technology “*Biogas 2009. State-of-the art on the production and utilisation of agricultural biogas, practical application of European experience in Poland*” took place in Warsaw on the 19th of June 2009. The seminar was organized by the Institute for Renewable Energy (EC BREC IEO) and hosted at the EXPO XXI Warsaw International Fair Centre. The seminar was dedicated to local and international developers, investors, suppliers of equipment, representatives of industry and regional administration interested in agricultural biogas investments. This event was organised for the first time and is expected to become an annual event in the future.

Nearly 100 participants among them guests from Austria, Germany, Denmark, Sweden, Belgium, France and Ireland participated. The seminar was divided into topic blocs such as: O&M experiences, state of the art of the biogas market in Poland and in leading European countries, update for technology development and financing possibilities.

The President of the Board of the Institute of Renewable Energy, Grzegorz Wiśniewski in opening presentation introduced the state of the art of the biogas market development in Poland and in the EU, backed up by the results of the IEE EurObserv'ER project. New foundations for the development of the biogas market are stipulated in the *Directive 2009/28/EC of the European Parliament of 23 April 2009 on the promotion of the use of energy from renewable sources* binding Poland to achieve 15% of RES share in the final energy consumption in 2020, including electricity, heat and transportation fuels. An important step, which will be decisive for the implementation of this guidelines on the local market will be the announcement of the *Action plan of renewable energy up to 2020* by the Polish government, scheduled for June 2010. Moreover, an introduction of the new RES

support system in the amended version of the Energy Law is expected, which will determine the profitability of biogas investments in the forthcoming years.

The moderator G. Wisniewski compared the state of the art of the biogas market A.D. 2009 in Poland with the wind energy market in 2001 and noticed that biogas investments are smaller, more expensive both in terms of installed capacities and O&M specific costs, more dispersed and especially in terms of the exploitation costs they require larger support for the technology to become competitive on the power market.

The state of the art of the biogas sector in Europe in countries such as Germany, Sweden, Denmark and Austria was presented by:

- Gerd Carsten Hoher PhD from the Department of Energy Crops and Bioenergy at the Federal Ministry for Food, Agriculture, Consumer Protection and Regional Development of Lower Saxony;
- Józef Neterowicz PhD, environmental protection and renewable energy specialist at The Association of Polish Counties and the Member of the advisory committee for energy at the Polish Parliament,
- Jorgen Ballermann, Executive Director of Xergi A/S,
- and Thomas Amon PhD, the Department of Sustainable Agricultural Systems at the University of Natural Resources and Applied Life Sciences BOKU, Vienna.

The basic model of biogas utilisation in Sweden relies on the co-fermentation based on substrates such as communal waste, wastewater sludge and agricultural waste. Prices for agricultural co-substrates are comparable with food and fodder prices, therefore, they are applied only in limited range but as a supplement growing on importance in the biogas market.

The 20 years development of the Danish biogas market resulted in 20 centralized large biogas plants of 2-3 MWe each and 50 smaller plants (340 kWe) located usually on farms. Danish co-operative biogas plants are using around 366,577 t of waste (most of this amount are slaughter waste and waste from fishery, poultry, and dairy industry), which produces 325 Mm³ of biogas per year.

The Lower Saxony, which is hosting over 700 biogas plants of power reaching 365 MWe, and in terms of installed power is a leading German federal land. Currently in Germany as a whole 4,780 biogas plants are located of the total 1,400 MWe installed capacity. Biogas plants in Lower Saxony represent 18 % of biogas plants in Germany and 25% share of total installed biogas electrical power in this country.

In Austria well developed monitoring system delivers updated information on the technology, substrates, and energy crops, economical demands and management. Data analyses of daily input in 55 Austrian biogas plants revealed that co-fermentation mixtures of 4-5 substrates especially energy crops with animal manure (65.5 %), and energy crops, animal manure with organic waste (20.0 %) are usually used for biogas production.

The Experiences of Poldanor S.A in constructing and operating of agricultural biogas plants were presented by Anna Oniszk-Popławska from the Institute for Renewable Energy (EC BREC IEO). Poldanor, a company specialized primarily in pig-farming became in recent years a forerunner in building and operating agricultural biogas plants in Poland and the author of own solutions in technological process of biogas production. Poldanor is currently operating 4 biogas plants in Pawłówko 0.725 / 0.980 MWe / MWt, Płaszczycza 0.625 / 0.692 MWe / MWt, Kujanki 0.330 / 0.330 MWe / MWt, Koczała 2.126 / 2.176 MWe /

MWt. But the company already plans further construction of 9 instalations of the total installed capacity of 8.2 MWe and 8.6 MWth.

Suggestions for overcoming legal barriers and organisational obstacles for further developement of the biogas market were presented by Piotr Pasyniuk, PhD Ing. from the Institute for Building Mechanisation and Electrification of Agriculture as in the draft of the Programme: *Innovative Economy, Energetic Agriculture*, by the Ministry of Agriculture and Rural Development. The suggestion for changes refer in particular to amendments in acts on waste, fertilization, emission trading and taxes.

Professor Thomas Amon of BOKU presented experiences and conclusions from the realization of the EU-AGRO-BIOGAS project, from EC 6th Framework Programme for Research, Technology and Demonstration. The project is aimed at improvement of the yield of agricultural biogas plants. Project is realized by the consortium of partners from Austria, Germany, Denmark, Holland, Czech Republic, Poland (EC BREC IEO in co-operation with Poldanor S.A.), Italy and Great Britain. The objective is the development and optimization of the entire biogas chain by testing new solutions in real scale from production of substrates, acquire of biogas to utilization of heat and electricity made of biogas. Experiences of GE Jenbacher Gas Engine Division gained during the realization of the same EU-AGRO-BIOGAS project were introduced by Adam Czewiński from KWE Technika Energetyczna, the authorized GE representative for Poland. During the project the quality and quantity of used ignition oil, and it influence on the work of an engine, changes of oil condition and desulphurization requirements were examined.

Technical and engineering aspects of biogas plants construction was the subject of the presentation by Enprotech of Belgium and its domestic representative Mysak, which as partners of this seminar, presented own experiences in designing, financing, constructing and realisation of investments. The moderator of the seminar G.Wiśniewski noticed that especially in Poland, where majority of biogas plants will be built with the EU support, an increasing number of projects realized in the GRI, *Turnkey* and EPC (Engineering – Procurement -Construction) modes can be expected.

Sebastian Piwowarski and Lesław Janowicz, PhD from PNO Consultants presented 11 advices on how to effectively acquire financial support from the EU funds. Among them the most important seems to be not to postpone the project set-up till the last moment before the submission of an application. A project application should be well prepared for the competition, which means that especially formal and legal documentation must be collected as early as possible, another important element is the selection of the project co-ordinator.

Co-financing possibilities for biogas plants for the years 2007 – 2013 from the National Fund for Environmental Protection and Water Management were presented by Małgorzata Kijowska, the Director of the Air Protection Department and from the Regional Operation Programm of Mazovian Voivodship by Dariusz Kowalczyk.

The Biogas 2009 Seminar confirmed a growing interest in the agricultural biogas market in Poland, big demand for knowledge of practical applications and the market developments, which encouraged organisers to regularly host similar biogas events in the future. The discussion in the final part of seminar, moderated by G. Wiśniewski, led to a conclusion that developers and investors act under a constant legal, financial and technical risk. A more holistic approach is missing to legally support and guide the investors in terms of procedures, information on substrates, processes and technologies, reference specific costs and calculators. It was proposed to create an internet biogas forum for the improvement of information exchange and constant monitoring and review of legal regulations.