

Potsdam, 7.10.2004

Press Release 6/2004

Biogas Fuel-cell on it's way!

Successful test runs with a biogas fuel-cell - for scientists at the ATB it is a big step towards an efficient power generation from biogas. It is the first time that the reasonably priced PEM-technology is being made available for the use of biogas.

The ATB team of scientists (head of the project Dr. Volkhard Scholz) uses a polymer electrolyte membrane fuel-cell (PEMFC) for a combined power and heat production (power-heat coupling). The configuration of the fuel-cell system corresponds to energy systems on basis of natural gas for private houses, as have been tested successfully by several energy providers. The system can be adopted without any problems to different ranges of performance.

In contrast to the natural gas, biogas possesses a lower energy density and requires an additional gas purification due to critical contents of other damaging gases. The gas used at the ATB derives from the institute's pilot plant for solid-phase biomethanisation. It is desulphurised in a preliminary stage and reformed to a gas rich of hydrogen, before it is run through a 1 kW fuel-cell.

Results confirm the principal applicability of PEM-fuel-cells for biogas and are promising in terms of variability of applications. „Particularly in small and medium sized biogas plants, increased electric efficiencies of more than 38 % even in part-load operational range, low exhaust gas emissions and a quiet, low-maintenance operation lead to an improvement in economic efficiency and environmental compatibility“, says Ralf Schmersahl, junior scientist at the ATB.

In terms of energy and environmental policy, the use of biogas in fuel-cells favourably combines a comparable cost-saving regenerative source of energy with a high-efficient and environmentally sound technology. This paves the way for a future local energy power supply in rural areas.

Contact:

Dr.-Ing. Volkhard Scholz
Institute of Agricultural Engineering Bornim e.V. (ATB), Department Post Harvest Technology
Max-Eyth-Allee 100, 14469 Potsdam
Fax: (0331) 5699-849
E-Mail: vscholz@atb-potsdam.de