

Electricity from biomass



Biomass can make an important contribution to the solar energy revolution in the next few decades. The energy potential for Germany is at least 10% of present-day energy consumption. Solar energy obtained in the form of biomass is convertible into all forms of energy. It can be stored, and it is already being used as a substitute for fossil resources.

There is still a considerable need for research and development in the areas of biomass electricity generation, as well as a large untapped application potential. Used as distributed electricity generation plants in integrated grids, biomass facilities are suitable as background reserve systems that can compensate for the fluctuating capacity available from photovoltaic and wind generators.

Research and development requirements

- Processes for the production of carbon-derived fuels from biomass (in fuel cells, micro turbines, and block heat and power plants)
- Integrated decentralized/communal energy concepts for the large-scale use of biomass (logistics)
- Optimal coproduction of food stock and energy
- Optimization of biogas systems: Measurement systems and sensors for optimal plant management, customized control technology, standardization and modularization of system components
- Interface technologies for various thermodynamic energy converters such as conventional combined heat and power (CHP) plants, micro gas turbines, Stirling engines and fuel cells
- Integration of modern biomass systems into electricity supply structures – also into decentralized energy supplies in developing countries – as well as development of “micro gas networks” fed by biogas



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