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Electricity generation from biomass booms worldwide

ecoprogram and Fraunhofer UMSICHT expect the worldwide capacities of electricity generation from biomass to increase by 8,000 MW_{el} until 2015. Currently, about 1,000 biomass power plants are operational in Europe alone.

Mono-incinerating biomass is experiencing a boom like never before. At present, almost 2,000 biomass power plants with a capacity of 22.5 GW_{el} are operational in more than 40 countries throughout the world. There are more than 1,000 active biomass plants in Europe alone. Almost 800 power plants with a capacity of more than 8,700 MW_{el} were commissioned in the past five years. Another 900 plants are supposed to be constructed by 2015. Investments in new construction and maintenance will increase from currently 12.2 to 15.5 billion euros annually.

The largest market driver for the biomass boom is the increasing number of feed-in tariffs for electricity from biomass. Almost all of these promotion schemes are financed by the electricity customers, which makes them comparatively independent from national budgets and thus from the financial crisis. Price increases of fossil energy fuels and the introduction of CO₂ certificates also increase the competitiveness of electricity from biomass.

Still, biomass is most extensively used in Europe, especially – due to their large amounts of woods – in the Scandinavian countries Finland and Sweden. In Germany, there are – due to the long-term and intensive subsidisation – many, although on average very small plants. Outside of Europe, most of the power plants are located in Brazil, China and India. China and India subsidise electricity from biomass; in Brazil, about 400 ethanol factories use their own bagasse also for electricity generation. Only few biomass power plants exist in the USA and Canada, however, they are large.

In terms of plants and capacities, the trend changes. In the next five years, Asia will supersede Europe as the worldwide leading market. In monetary terms, however, Europe remains in the lead. This is because European biomass power plants and biomass heating power plants respectively are comparatively large, as they use the generated heat to a large extent. Plants in China or India are often designed for electricity generation only.

The recently published multiclient study “Biomass to Energy – The World market for Biomass Power Plants” of ecoprogram/Fraunhofer UMSICHT analyses the global operator and plant market in electricity generation from solid biomass. It can be ordered at www.ecoprogram.com.

Cologne-based consultancy ecoprogram specialises in the market of environmental and energy technology. The Fraunhofer Institute for Environmental, Safety and Energy Technology (UMSICHT) develops, examines and optimises techniques within the sectors of environmental engineering, safety engineering, process technology and energy technology. Together, ecoprogram and Fraunhofer UMSICHT elaborate market studies for selected sub-segments within environmental engineering.