

TOP TECHNOLOGY FOR OUR ENVIRONMENT



fossile & regenerative BHKW-Anlagentechnik

Mothermik®

EXPERTISE AND EXPERIENCE FOR RENEWABLE ENERGY

Energy generation from renewable resources – this concept is our present and our future. Being independent of fossil fuels not only saves money, but helps conserving the environment and preserving it for future generations as living space. We use our know-how and our passion to further promote this concept. That's why the name Mothermik® stands for modern, powerful engine-driven combined heat and power plants and most of all for the trend-setting and environmentally sound technology of power generation from wood.

Since 1983, we have been developing and producing components and entire installations for the combined heat and power unit technology (CHP). We invested our know-how and skills mainly in the development of the technology

of power generation from wood. Therefore, we are among Europe's leading companies with the most experience in this field – measured by the hours of operation of such plants. Our 40 employees, among them four engineers and ten master craftsmen, work with their full innovative force to further develop this special technology. We impart our knowledge to new employees during their training to further strengthen our team and to ensure our outstanding position also in the future.

Our customers receive a powerful CHP technology from one source plus the entire service – we supply our customers with everything that is needed for the operation of such a plant. Thanks to our in-house production of all essential components, we are able to work independently and

flexibly and can react quickly and reliably to our customers' requests. As a company of the Wilms Group, we are able to use the synergies within a strong group of companies.



Plant for the power generation from wood with 500 kW electric power.



ELECTRIC GENERATION FROM WOOD – OUR CONCEPT FOR OUR ENVIRONMENT AND FUTURE

Trees enrich our lives. Healthy forests are essential for the climate and the natural cycles. And wood not only is a natural and multifunctional building material, it is also a renewable resource for environmentally sound and



efficient ways of CO₂ neutral energy generation. This use guarantees our independence of fossil resources such as natural gas and crude oil and thus helps conserving the environment and saving money. In order to be able to use the wood resources in this way, a technology is needed that preferably works in a simple and functional way. This is our commitment at Mothermik® – and we are successful at it.

Our automatic, fully integrated Mothermik® system for the power generation from wood includes a specially developed wood gasifier, a gas and water treatment unit, wood logistics including dryers and the adjustment of the proven Mothermik® pilot injection engine technology and thus enables permanent operation. Our developmental achievement of more than ten years

combined with our experience grown over more than 25 years led to a unique product in the market, which has won several awards already – for instance the Innovation Award 2004 and the Environmental Award 2007 in Rhineland-Palatinate.

We continue to invest the know-how of our highly qualified personnel in the improvement of this technology, which combines the persistent climate, environment and emission protection with high cost efficiency and complies with the highest safety standards. Since we develop and produce our products internally, we are mostly independent of other suppliers. We offer our customers a full service with planning, production and assembly of the entire installation plus an extensive maintenance, repair and spare parts service.

Trunk wood



Milling



Storage



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THIS IS HOW THE POWER GENERATION FROM WOOD WORKS

Efficient, environmentally friendly, cost-saving – this is how the Mothermik® plant for the power generation from wood works. The plant is fuelled by unpolluted wood cuttings from forestry and landscaping in the form of wood chips. The wood chips are transported reliably and automatically with an energy-saving, intelligent, laser-controlled clamshell system from the storage location to the wood gasifier. In the gasifier, wood gas is produced continuously by adding air as gasification medium. The wood gas, then, is treated in several steps and is burnt with a pilot injection engine by continuously adding a low quantity of ignition oil (biodiesel RME) and is thus used for the generation of energy.

The engine-powered combined heat and power plant,

consisting of the pilot injection engine with a waste gas heat exchanger and a generator, is completely operated with the cogeneration of heat and power. The heat flows of the gasifier unit and the engine are used for drying the wood chips and as external heat source (thermal heat, service water heating or process heat). During the gasification of the wood, a small amount of charcoal coke in the form of powder is produced as a by-product, which can be used as raw material for the production of barbecue briquettes. Ash must not be removed. The generated power is supplied to the public power supply system and sold according to the applicable provisions.

The scope of delivery of the Mothermik® plant for the power generation from wood includes the gasification reactor and the



CHP units for a nominal electric power of 250 kW with gas and water treatment units, control unit for the CHP and the gasifier, waste gas heat exchanger, wood chip dryer and automatic wood logistics by an intelligent, laser-controlled clamshell. If required, we completely plan the plant and obtain all necessary permissions in the course of the production, delivery and assembly of the plant.

Drying



Feeding



Wood gasification



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TECHNOLOGY AND SERVICE WITH EXPERIENCE

CHP plants from specialists

Besides our focus on power generation from wood, our name has always been standing for know-how in the development and production of fossil and renewable CHP plant technologies. To date, we produced more than 250 CHP plants. We manufacture plants with an electric power of 100 to 1,000 kW for the continuous operation in industry, commerce, trade and the public sector. As fuel for our combined heat and power plants, we use diesel and biodiesel; our special dual fuel plants, in addition, can be operated with different gases like natural gas, sewage gas, biogas, mine gas, wood gas or other weak gases in combination with diesel and biodiesel as ignition jet. We deliver fully integrated systems as container constructions or assemble stationary plants.

Furthermore, we offer special equipment and accessories for almost any need.

Our service – fast and reliable

The very close relationship with our customers is our philosophy and the basis for our outstanding service. No matter what the problem, we help our customers quickly and flexibly – with long-term and reliable maintenance agreements, uncomplicated emergency aid or the fast and economic provision of spare parts. With the help of modern data transfer, we are able to monitor the state of the operated plants quickly and precisely and take the necessary measures immediately. Our customer service department cooperates closely with the development and production departments. Due to this efficient organisation, we can attend to your problem without

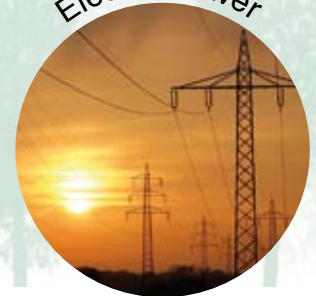


delay – 24 hours a day, if necessary.

Useful heat



Electric power



Gasaufbereitung



Coke as by-product

Pilot injection CHP





Qualität ist das Gegenteil des Zufalls

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Mothermik®

Mothermik® is a company of the



Wilms Group



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Europe Recycling Equipment BV ist eine vielseitige Organisation mit einem großen Produkt- & Service-Programm für Firmen in der Forstwirtschaft und Recycling-Industrie. Zusammen mit leistungsfähigen Vertretungen liefern wir regionale Vertriebs- und Dienstleistungen in der Holzverstromung, Forstwirtschaft und Recyclingindustrie.

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