



SOLUTION FOR COMBUSTION

- 1 - Furnace hydraulic flat moving grate
- 2 - Furnace hydraulic sloping moving grate
- 3 - Biomass transport system: moving floor
- 4 - Shredder
- 5 - Biomass storage
- 6 - Flue gas e filter

KARA
ENERGY SYSTEMS
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SINCE 1910

KARA
ENERGY SYSTEMS

EVERYTHING ABOUT COMBUSTION



DEVELOPMENTS

- 1 - Two Thermal Oil Boilers each 3 MW installed in Lithuania
- 2 - More than 100 years of experience



100 YEAR EXPERIENCE

Combustion may seem to be easy, but thermal conversion of biomass by combustion is a complex process. To achieve optimal results, a great amount of stringent conditions must be met. Examples of these conditions are a well-controlled fuel dosage, a perfect fire grate system, a well-designed furnace construction and an accurately controlled supply of com-

bustion air. These conditions are essential to maintain the temperature inside the furnace as constant as possible.

Environmentally sound

In order to avoid harmful emissions, KARA guarantees complete control over the complete combustion process. All systems are designed in such a way that they can comply to all environmental

standards, regarding the emission limits for dust, CO, NOx etc. anywhere in the world. KARA has a large number of filtering systems in the delivery program like multi-cyclones, electrostatic filters and cloth filters. Furthermore KARA has some cleaning systems in her program. For e.g. NOx and dioxin out of the flue gases. Depending on the type of pollution and the emission standards that have to be met



1

CHP PLANT BY KARA

- 1 - CHP plant 8 MW with 1 MW electric
Germany
- 2 - Turbine for generate energy
- 3 - CHP plant boiler house



2



3

KARA can always deliver a suitable flue gas cleaning system.

Cost effective

KARA will help you to convert your biomass into low-cost thermal energy. This way your residues get a positive value. The energy can be applied as thermal oil, hot water, low or high pressure steam, warm-water, etc., depending on the application you need the heat or power for. A few examples are heating of factories and offices, commercial greenhouses and drying wood, or gluing lines and veneer presses. One thing is certain: a welcome reduction in the costs of energy production is always achieved. A KARA biomass combustion plant is a responsible investment with a payback time of just a few years.

obtain state-of-the-art technology. Extremely durable systems with a long operational life and ergonomically sound design. Furthermore, KARA systems are user-friendly as well. The operation of every installation can be equipped, according to the specific demands of the client, from completely manually controlled to fully automated.

Service

KARA pays attention to the client's comfort. Therefore KARA is keen on giving perfect service. In order to resolve any technical problem,

KARA keeps all essential spare parts in stock, enabling its engineers to perform virtually any repair as quickly as possible. Also offers KARA the possibility to enter into a service contract. The installation will then be checked regularly and preventive maintenance is immediately performed.

Experience since 1910!

KARA Energy Systems B.V. is an independent company within the Reinders Almelo Group of Companies, set up by Klaas Reinders in 1910. Klaas Reinders was a man

KARA HAS A LARGE NUMBER OF FILTERING SYSTEMS IN THE DELIVERY PROGRAM

with a passion for technology. A passion which he passed along to his son and grandsons. That is how Reinders Almelo - in less than three generations - could grow to become a leading industrial concern, active in a variety of disciplines. Today, the Reinders Almelo Group of Companies is one of the leading suppliers of systems for biomass combustion, heating, dust handling, wood drying and energy generation.

Tailor-made

These challenges have inspired KARA to design innovative systems. KARA delivers its systems tailor-made, designed by using own developments, test results, research data and most important of all: practical experience. This way each system is constructed for a specific purpose. Because no one knows better

than KARA, that every type of biomass - from wood residues to coconut shells - has to be handled in its own specific way. For every fuel, KARA guarantees a well-controlled combustion, since this is the basic need for a clean, efficient process.

Tailor-made products

KARA Energy Systems B.V. offers a broad range of products, from various wood treatment and recycling systems to combustion and gasification systems. In this field, KARA is one of the leading players. Every plant is built according to the specific demands of the client. This approach asks for skilful project management. So KARA first examines the local situation, before offering a good advice. After that the plant is designed, built and installed, on a turn-key basis if desired. Every step in this

process is taken in close co-operation with the client. After installation, the plant will be thoroughly tested before it is delivered. All the results of these tests are welcome additions to the extensive specific knowledge available in the Reinders Almelo Group of Companies, to develop new and improved systems.

OPPORTUNITIES



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7

4 - Warm water boiler 400 kW Ukraine

5 - Warm water boiler 650 kW Belgium

6 - Warm water boiler 1,5 MW The Netherlands

7 - Steam boiler 4 MW South Africa