

EnPlant HGG – Biomass Energy Systems

EnPlant is specialized in waste wood fired Hot Gas Generator, shorten called HGG.
For industrial clients we provide Biomass-fired energy system and related equipment.

Typical applications

- ✓ Pellet Plants
- ✓ OSB/MDF Plants
- ✓ Particle board Plants
- ✓ Hot Gas Generation for Direct Dryers
- ✓ Thermal Oil Heating
- ✓ Steam Generation
- ✓ District Heating

Production of fuel pellet and wood based panel products as particle-, OSB and MDF boards require heat for both drying and the pressing processes. Our HGG provide hot gases for drum dryers, flash dryers as well as for thermal oil heaters or boilers. Our HGG can also be built for regular fired hot water and thermal fluid heater plants.

We offer complete package systems including: Consulting, Engineering, Design, Manufacturing, Installation, Supervision, Parts, and, within since decades colleagues control system.

The HGG can be fired with a range of waste wood as, bark, saw dust, wood chips, trimmings and sander dust. The HGG is built on our proven EnPlant Reciprocating Grate combustion Technology.

HGG (furnace) with reciprocating grate is the most effective design for complete combustion of waste wood fuels with varying characteristics, fuel size and moisture content.

This feature and by decades of experiences have not only made us to one of the leading HGG companies in northern Europe but also gives us advantage to engineer systems to meet customer's specific circumstances.

Depending on your application we are able to supply: Biomass Fired Hot Gas Generators – Biomass Hot water Boilers – Fuel Handling Systems - Combustion Air System – Multi Cyclones – Ash Handling System – Reciprocating Grate Systems – Material handling Systems.

EnPlant Engineering AB
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Biomass Fired Combustion Systems

Reciprocating Gate

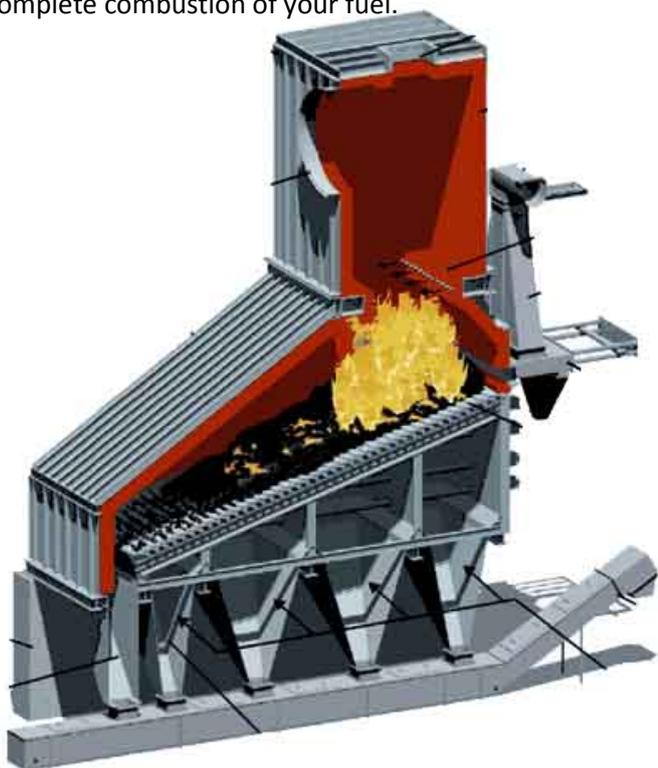


Utilizing Biomass energy by waste wood with higher moisture content fuels such as hogged bark and green wood for larger firing capacities demands a reciprocating grate in order to get continuous operation, stable and easily adjustable combustion results, and fully automatic ash handling system.

The fuel moisture affects largely the heat values of the fuel and on the basis of these facts, our Reciprocating Gate is designed. EnPlant Reciprocating Gate Technology is used largely in the wood products industry.

The fuel is fed into the grate area by pusher feeders fitted to the Grate front. The reciprocating grate distributes the fuel evenly over the whole grate area, and simultaneously moves the ash and slag from the firing area into an ash removal system.

The reciprocating grate achieves gasification through the staged combustion of wet fuel. The grate is divided into multiple sections allowing varying speeds, and also controlled under-fire air zones resulting in a more complete combustion of your fuel.



Combustion chamber



The combustion process starts on the Grate which we control with our CPF technology. The next combustion steps is when the volatile carbons leaves fuel as gas and to be burnt with oxygen-rich air, a true complete combustion require good mix of the carbon monoxide and supply of the oxygen-rich air, high temperatures and retention time. With consider on this facts are our combustion chambers designed for each job in order to ensure ideal combustion.



Suspension Burners - Sander dust Burner

Suspension burners can be used in addition to the HGG (Furnace) designs combusting finer materials such as sander dust or hammer milled material. The material is blown through high pressure tubing into a centrifugal burner. The burner makes use of primary and secondary air, allowing adjustments to fuel consumption, as well as flame length and width. The Dust burner has no self-sustaining flame but needs support from the Grate fire, the dust firing take place simultaneously with the grate firing.

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Biomass Fired Hot Gas Generators

Clean hot gas generation is available for systems requiring direct heat. Direct heat is commonly used by rotary dryers in the preparation of material for OSB, MDF, Particleboard and Pelletizing.



Fuel Feeder

Fuel is feed into the fuel hopper via the fuel feed conveyor. The integrated fuel pushers are programmed to evenly distribute the fuel onto the furnace Grate front to maintain even fuel pile on the Grate.

Water and air cooled jacket designs are used to keep the bottom portion of the fuel feeder cool during operation.

Ash handling - Wet Submerged Ash Conveyor

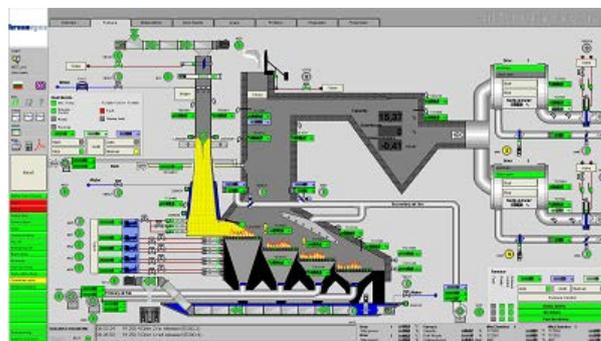
The Submerged Ash Conveyor collects ash from under a wood fired or biomass fired energy system. The Conveyor is located right underneath the Reciprocating grate, Secondary chamber. The ash is to a great part dewatered during the transport along the inclined part of the wet Submerged ash conveyor.

District Heating Plant & Steam Boilers

We can supply direct fired wood – fired furnace Hot water boilers and steam boilers. Hot water boiler commonly used for district heating Plants. Steam tube boilers commonly used for steam generation for process heating (saturated steam).

Biomass Control Systems

Control systems for biomass fired energy systems are complex due to the integration of fuel handling, combustion control, and ash removal. It is imperative that all of these systems work in harmony together and are designed in such a way that gives operators maximum control while maintaining safe operation.



Grate Bars

Our Grate bars are the most reliable grate bars. The T-bar design insures uniform air movement and cooling of each individual bar, and the high alloy steel composition insures durability and long lasting performance.

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