

# **PROCESS STEAM FROM WOOD PELLETS AND WOOD CHIPS**

**WE REDUCE YOUR ENERGY COSTS**



**SCHMIDMEIER**  
NaturEnergie

Projektteam für nachhaltigen Prozessdampf

# A STRONG PARTNER IN TERMS OF BIOMASS

The Schmidmeier Company develops systems for the generation of process energy from biomass. Our solutions focus on using natural energy to heat water and generate saturated steam. We can meet all your energy needs. In a collaborative effort, we will help you to implement the change from fossil fuel to wood pellets and wood chips.

## WE REDUCE YOUR ENERGY COSTS AND PROTECT THE ENVIRONMENT

Our engineers develop energy concepts for commerce and industry in the 15,000 kW output range. These concepts also include CHP systems for the co-generation of eco-power. Our steam boilers with wood-burning furnaces generate steam in a CO<sub>2</sub>-neutral way and in the process, reduce the energy costs by up to 55 %. The amortisation ranges between two and five years.

For more than 15 years now, we develop and offer wood pellet boilers in European countries. As medium-sized company we are thoroughly familiar with the practical requirements in the biomass market. Alongside our competent partners, we support our customers throughout all stages from planning to fuel sourcing.

We do not have to juggle fictitious numbers because we assume responsibility for the security of the fuel supply, steady prices and the fuel logistics. Our in-depth profitability analyses are authoritative from the inception. They are a solid basis for the decision making process.

Our objective is to outfit or retrofit the equipment of companies with high energy demands for a CO<sub>2</sub>-neutral energy generation. In the process, we lower your energy costs and protect the environment.





# OUR TECHNOLOGY PUTS A STOP TO HIGH ENERGY COSTS

Our well educated and experienced team is trained to contribute expertise to all aspects of the project. This guarantees an end-to-end problem-free service. Our experts analyse your energy situation, develop a concept for efficient solutions, assist you with permits and subsidies, install your steam system, and supply you with fuel - if required.



## ANALYSIS AND CONSULTATION

We will come to your business premises and provide you with a free on-site analysis of your energy use, load profile, and space requirements. Without obligation, we will advise you of the savings you can achieve through energy generation from biomass.



## THE CONCEPT

We are thoroughly familiar with the potential customer group, which can profit from our service. In the strategy and design phase, we compile a list of all costs, provide a profitability analysis, and make a binding fuel offer.



## TURN-KEY SOLUTIONS

We provide turn-key solutions at a fixed price. Whether you decide on a container solution or prefer a classic boiler house, we plan, deliver, assemble, wire, and equip with pipes and ducts to completion, from the fuel storage to the top of the flue mouth.



## QUALIFYING FOR SUBSIDIES

Federal Government and states grant considerable subsidies for the retro-fitting to wood-burning furnaces. If your company is settled in the right state, e. g. in Bavaria, Baden-Württemberg or Hesse, you may receive subsidies of up to 30 % of the investment.



## AUTHORISATION PROCEDURE

For systems with less than 1,000 kW furnace output you need a simple permit pursuant to the 1st BImSchV [German Federal Emission Control Ordinance]; for systems with more than 1,000 kW, the 2nd BImSchV applies. We explain in detail what you need and will process the permit and examination paperwork on your behalf.



## INSTALLATION AND REALISATION

We will be available in all realisation phases to ensure a smooth process without problems. This includes interfacing with the project partners and coordinating the planning, deliveries, and assembly tasks.



## FUEL SUPPLY

Upon your request, we can supply you with all needed fuel. We will guarantee our fuel prices for three-year cycles. Our logistics system will automatically report the fill level to us. Therefore, we can guarantee that you will have sufficient fuel supplies for the life of your equipment.

Our NaturEnergie pellets are provided by reliable suppliers in Central Europe exclusively. The pellets consist of 100 % unadulterated, untreated natural wood. We supply our customers with standard industrial pellets of ENplus A2 quality with an ash content of less than 2 %.

# PROVIDING THE PROPER SOLUTION FOR EVERY REQUIREMENT

Steam boilers of type Susteamer<sup>®</sup> form the core of our energy solutions. The centrepiece of the Susteamer<sup>®</sup> is a waste-heat steam boiler consisting of separate modules with upstream wood pellet furnace, which is designed as large fire-tube three-pass smoke boiler. All Susteamer<sup>®</sup> versions can be retrofitted for wood chip burning.

CHP-capable

## SUSTEAMER<sup>®</sup> XS ALTERNATIVE FOR LOW LOAD REDUCTION GENERATORS

400 to 2,000 kg/h  
Suitable for superheated steam up to 380 °C at 27.0 bar  
Compact power pack for the low output range, closes the gap between fast-response steam generator and large water boiler, may be CHP-enabled by running small steam turbines or other thermal engines

CHP-capable

## SUSTEAMER<sup>®</sup> HP THIS IS THE HIGH-PRESSURE VERSION OF THE SUSTEAMER<sup>®</sup> LC

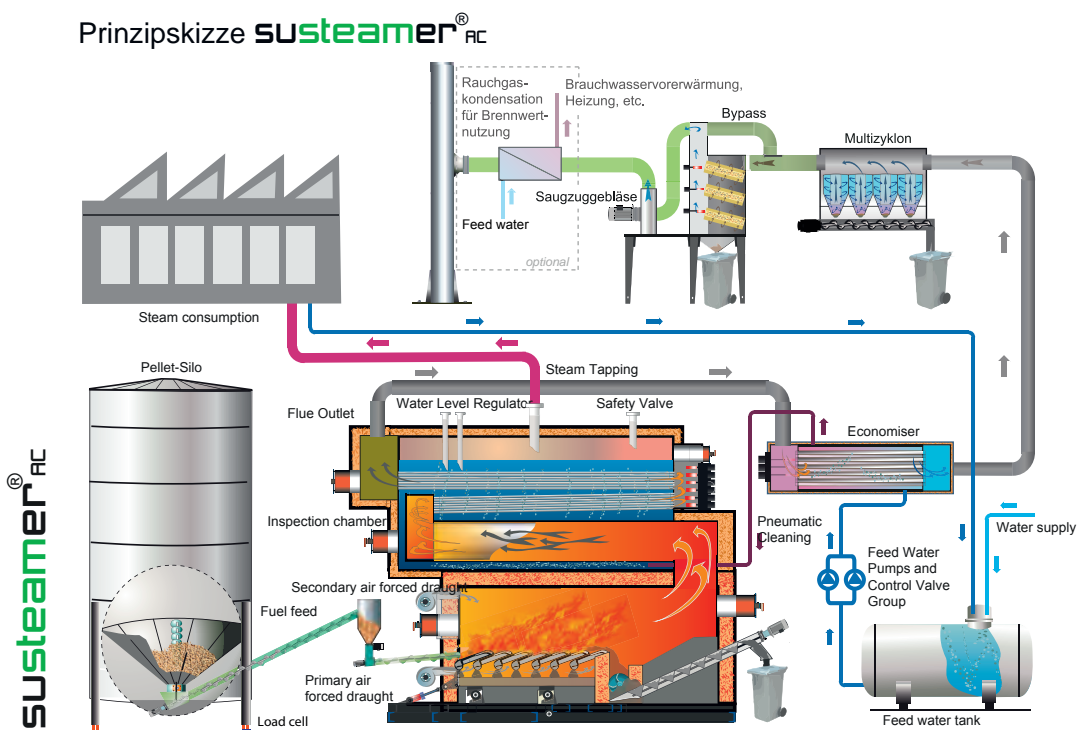
2,500 – 20,000 kg/h  
20 – 63 bar, maximally 400 °C and up to 40 bar  
Suitable for special applications such as biomass-fuelled co-generation boilers

## SUSTEAMER<sup>®</sup> AC OUR VERY ECONOMICAL STANDARD SYSTEM FOR COMMERCIAL PURPOSES

900 – 4,000 kg/h, 10 – 16 bar  
Partial load performance:  
30 - 100 % modulating, below 30 % cycling Traversing grate for dry fuel

## SUSTEAMER<sup>®</sup> LC FOR INDUSTRIAL 24/7 OPERATIONS, ALSO SUITABLE FOR DIFFICULT FUEL TYPES

2,500 – 20,000 kg/h, 10 – 16 bar  
Water-cooled grate  
Additional heat-absorbing tubes in the furnace  
The counter-flow furnace can also handle very wet fuel



# STEAM FROM THE MOBILE BOILER ROOM

Flexibility is an important consideration. For outputs between 900 kg/h and 6,000 kg/h we offer a standardised container-type energy centre as alternative to the classic boiler room design. The energy centre is also available as special model with the CHP extension module plus steam engine or steam turbine.



Mobile container solutions can be ready for use within 10 days after delivery.

## CLIMATE PROTECTING POWER STATION

We made biomass steam systems mobile. Biomass steam systems with up to 6,000 kg/h output including pellet silo, fuel supply line, ash removal system, flue gas washers (15 mg/Nm<sup>3</sup>), induced draught (ID) fan, and flue outlet are available as single or double-tier containers. They are turn-key systems and ready to roll right onto your premises. The available container systems cover the entire spectrum from water heater and steam systems to co-generating steam systems.

The plug & play CLIMATE PROTECTING POWER STATION can replace or complement your existing system. Just turn the key!

## LOWER COSTS FOR ENERGY-GOBBLING APPLICATIONS

Our integrated or mobile systems are used wherever adjustable, high-performance steam systems are needed. They are the most economical solutions for industries, which use a lot of energy, such as the manufacturers of construction materials, chemicals, and food as well as the textile cleaning industry.



# INDUSTRIAL PELLETS ARE CARBON NEUTRAL, AVAILABLE AT STABLE PRICES AND SUFFICIENTLY STOCKED

In contrast to the premium consumer market, industrial pellets are more than plentiful on global markets. According to a study, the inflation-adjusted prices for industrial pellets are falling. By comparison with heating oil, burning wood pellets is only half as expensive.



DIAGRAM: 'The Prices for Industry Pellets in Europe at a Glance', January 2012, DBFZ, German Biomass Research Centre

Instantaneous performance and fuel consumption are browser-based available

## NATURENERGIE NACHSCHUBMANAGEMENT® SUPPLY LOGISTICS

Our supply logistics ensure that you do not run out of fuel. We handle the supply logistics for you. You never have to worry about procuring the needed fuel in time.

- \_ Pellet supply logistics and procurement concept
- \_ Storage and pellet handling
- \_ Remote fill level monitoring with automated triggering of fuel orders
- \_ Scheduling/coordination of the ash removal



Monitor your fuel consumption (every 15 minutes) in real time or receive an updated daily process data set.

# RETROFITTING - IT IS WORTH IT!

Most European States and Federal Governments subsidise the conversion from fossil fuel to biomass. Since 2009 for example, investment subsidies, repayment bonuses, and low-interest loans from the German incentive programs are also available for efforts of corporate or commercial entities to switch to renewable forms of energy.

## HERE IS AN EXAMPLE FROM THE GERMAN FOOD INDUSTRY:

A mid-sized Bavarian company with an annual heat requirement of about 8,600 MWh and 4,500 h/a planned to convert to the carbon-neutral wood pellet steam system. At the time, the company used a boiler with a furnace burning 2.5 t/h heating oil. The growing company planned to supply the energy using a 3-tonne steam system in the future.

## WE STAND BY OUR WORK

We want your steam system to keep its value, and we will be available to assist you throughout its useful life. Your transition from fossil to CO<sub>2</sub>-neutral energy will be easy with our experts by your side.

	Present situation	After the boiler exchange 2012
Fuel:	Heating Oil EL	Wood P / Premium Wood Chips
Saturated Steam Output (12 bar):	3.200 kg/h	3.000 kg/h
Nominal Boiler Output	2.100 kW	1.925 kW
Annual Fuel Need:	950.000 l	1.950 t
Fuel Price at the Time of Launch:	0,70 Euro/l	180 Euro/t, valid for 3 years
Annual Fuel Costs	760.000 t/a	351.000 Euro/a
Investment incl. new boiler room	320.000 Euro	1.150.000 Euro
Subsidy: KfW , Bioklima Bayern		280.000 Euro
Net Investment (minus Subsidy)		870.000 Euro
Cost of Capital (at 3 % Interest	9.000 Euro/a	24.100 Euro
Maintenance, Ash Removal etc.	5.000 Euro	15.000 Euro
Annual Savings	-	296.650 Euro
Amortisation Time (static, no price increase)		2.93 years



**We work hard.  
We innovate.  
We collaborate.  
We are passionate about our work.  
We love our work.**

We do not focus on fee schedules and time sheets. Value is created only when you implement what we design. Convincing others takes passion and dedication to a mission:

“The perfect merging of ecology and economy“

We love our work and take pride in it. You will feel it when you work with us.

**Give it a try!**



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