

# HEGER EDELSTAHL



## YOUR PARTNER FOR

- HEAT RECOVERY SYSTEMS
- FLUE GAS CONDENSATION SYSTEMS

[www.heger-edelstahl.at](http://www.heger-edelstahl.at)

# HEAT RECOVERY

In this business sector, we offer the value chain of system design, component design (process engineering, construction), production, assembly, start-up and after-sales service.

The systems are completely assembled, insulated, cabled and cold started-up in our factory, if it is possible due to the size of the system and due to the delivery conditions.

In addition to new construction or retrofit of systems, we can support customers with reconstruction and servicing of existing systems.

Furthermore, we offer the installation of test systems and test heat exchangers at unspecified applications for more precise verification of design- and operating parameters.

## ADVANTAGES OF A HEAT RECOVERY SYSTEM:

- ✓ Cost savings
- ✓ Energy savings
- ✓ Energy recovery
- ✓ Manageable investment
- ✓ Return on Investment within few years

- ✓ Additional earnings
- ✓ Improved use of existing systems
- ✓ For the sake of the environment
- ✓ The theme of the future
- ✓ Fundable

## Based on the high level of pre-fabrication we achieve many advantages for our customers:

- ✓ prompt delivery
- ✓ short downtimes during assembly
- ✓ „everything from one source“ - no interfaces  
- no guarantee overlaps

## We differentiate between various types of processes:

- ✓ Heat recovery systems for **biomass boilers (with/without condensation)**
- ✓ Heat recovery systems for other **process exhaust gases**

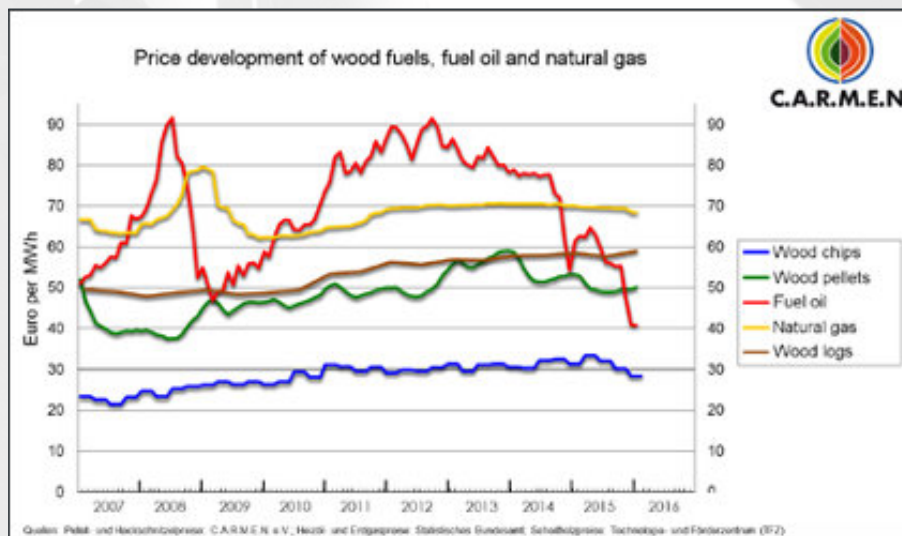


# HEAT RECOVERY SYSTEMS FOR PROCESS EXHAUST GASES

On the one hand the **significant increase of energy costs** and on the other the **incalculable fluctuations in prices** within the last years causes, that **the use** of previously **unused exhaust gas streams** becomes increasingly important.

As a consequence of this development, we offer innovative **heat recovery systems** to achieve enormous **energy savings**. These systems **reduce the energy import dependence from crisis regions** and thus increase the **regional economy**.

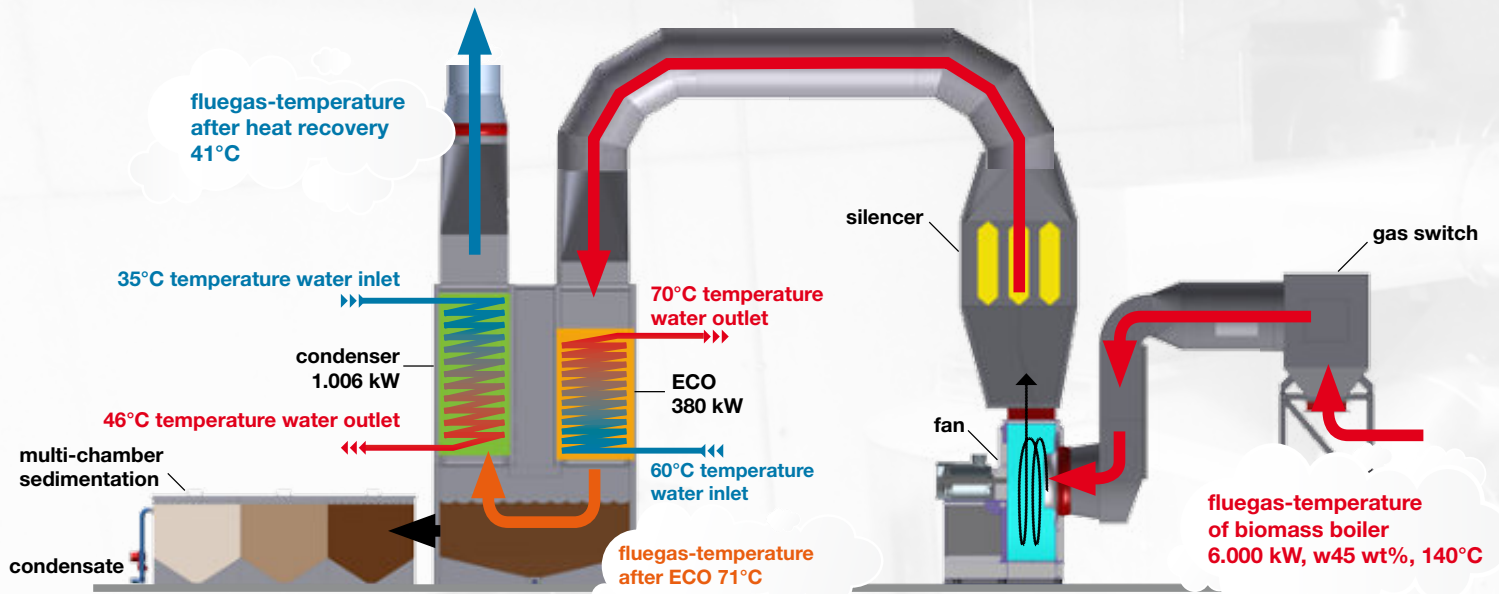
Heat recovery systems from **Heger Edelstahl** represent valuable contribution to **reduce greenhouse gas CO<sub>2</sub>** and therefore they take an active part in **climate protection**.



Source: C.A.R.M.E.N. ([www.carmen-ev.de](http://www.carmen-ev.de))



# BENEFITS FOR CUSTOMER & ENVIRONMENT



## Example 1:

Biomass boiler 6.000 kW  
 Fuel water content: w45 wt%  
 Volume flow 14.800 Nm<sup>3</sup>/h  
 Fluegas-Inlet-Temperature: 140°C



Thermal capacity of heat recovery system:

- ✓ Q<sub>ECO</sub> = 380 kW
- ✓ Q<sub>COND</sub> = 1.006 kW



Annual saving at 3.000 full-load hours and 30 €/MWh:

- ✓ 1.140 MWh or € 34.200,-(ECO)
- ✓ 3.018 MWh or € 90.540,-(COND)



CO<sub>2</sub>-Reduction:

- ✓ 1.864 to/year

## Example 2:

Natural gas boiler 2.800 kW  
 Volume flow 3.840 Nm<sup>3</sup>/h  
 Fluegas-Inlet-Temperature: 230°C



Thermal capacity of heat recovery system:

- ✓ Q<sub>ECO</sub> = 377 kW



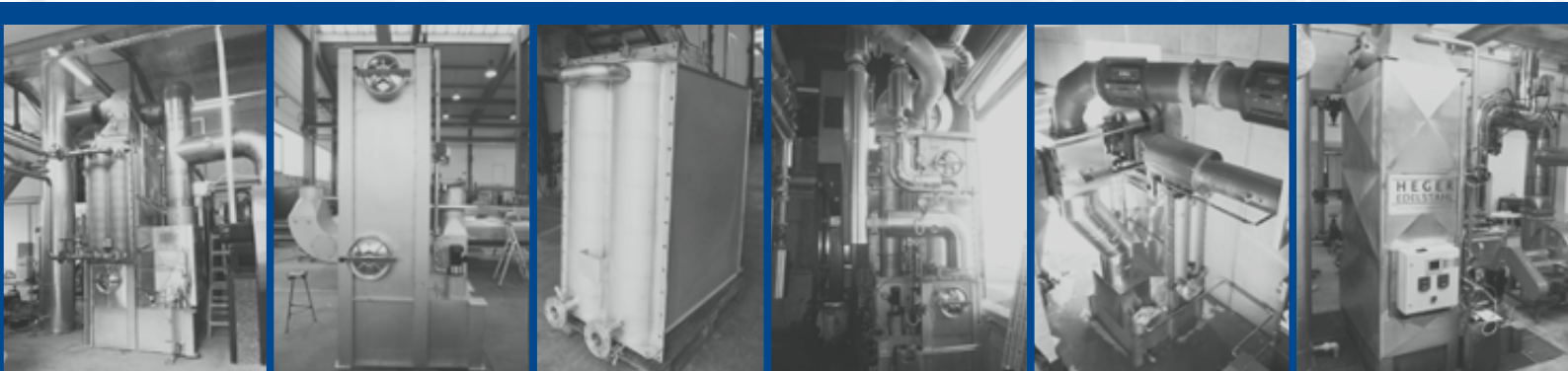
Annual saving at 2.000 full-load hours and 70 €/MWh:

- ✓ 754 MWh or € 52.780,-



CO<sub>2</sub>-Reduction:

- ✓ 171 to/year

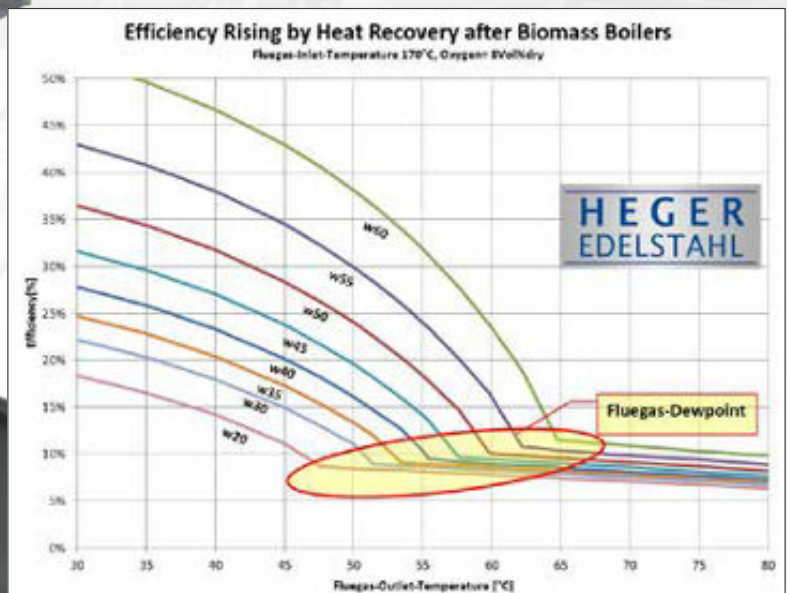


# HEAT RECOVERY SYSTEMS FOR BIOMASS BOILER

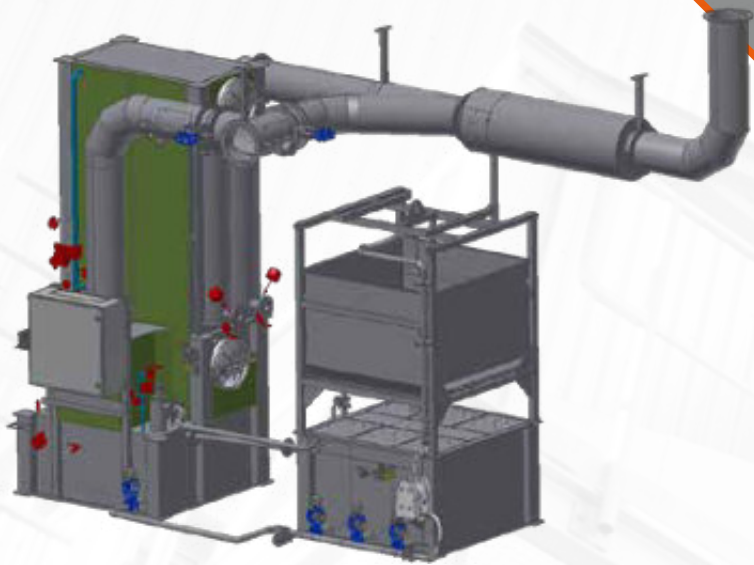
High heat content of exhaust gases, which is produced during combustion of wet biomass, often leaves the system unused as a loss.

A considerable **increase in efficiency** can be achieved, if it is possible, to cool down the flue gas under the flue gas dewpoint through a properly designed **heat recovery system**. The lower the residual oxygen content and the higher the fuel water content, the higher the achievable efficiency.

In the BIOMASS sector, we offer compact series for boilers from 200 to 4.000 kW. As a result of this, we achieve least possible assembly efforts. We use stainless steel 1.4571 as base material. According to customer requirements, we can offer additional OPTIONS.



# REFERENCES



## Heat recovery system HEGC-0080 for biomass boiler 800 kW

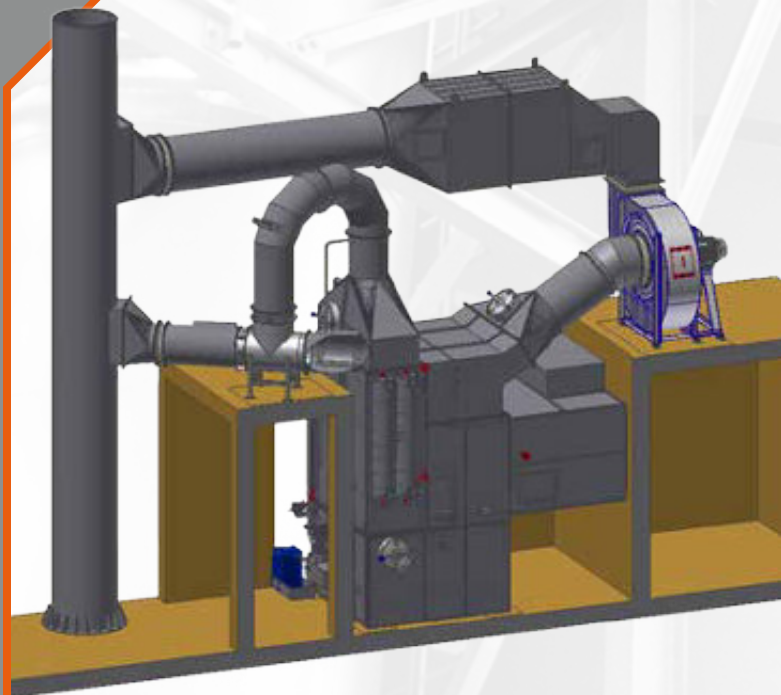
### Scope of delivery:

- ✓ X-Large CONDENSER with heat exchanger tubes made of stainless steel 1.4462
- ✓ Casing parts, process tank and piping made of stainless steel 1.4571
- ✓ Bypass switching, connection to the existing flue gas system and clean gas silencer
- ✓ Heat capacity CONDENSER 236 kW (w50, 45°C RL)
- ✓ Multi-chamber sedimentation with sludge thickening
- ✓ Stainless steel control cabinet
- ✓ Engineering (process engineering & design engineering)
- ✓ Assembly & delivery
- ✓ Control with remote maintenance
- ✓ Start-up

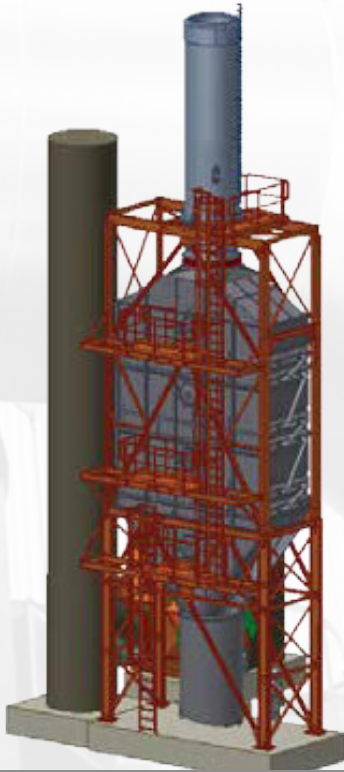
## Heat recovery system HEG-CD-0300 with depluming

### Scope of delivery:

- ✓ X-LARGE-CONDENSER with heat exchanger tubes made of stainless steel 1.4462
- ✓ Welded stainless steel AIR PREHEATER with heat exchanger tubes made of stainless steel 1.4571
- ✓ Casing parts, process tank and piping made of stainless steel 1.4571
- ✓ Depluming fan 30 kW
- ✓ Bypass switching, bypass pipe, connection to the existing flue gas system and insulation
- ✓ Heat capacity CONDENSER 354 kW (w50, 50°C RL)
- ✓ Heat capacity AIR PREHEATER 231 kW
- ✓ Stainless steel control cabinet
- ✓ Engineering (process engineering & design engineering)
- ✓ Assembly & delivery
- ✓ Control with remote maintenance
- ✓ Start-up



# REFERENCES



## Heat recovery system for CTP-exhaust for graphite manufacturing of 65.000 Nm<sup>3</sup>/h with 150°

### Scope of delivery:

- ✓ Heat exchanger -material test
- ✓ ECO with heat exchanger tubes made of stainless steel 1.4462 for network return preheating of the high temperature water network
- ✓ Casing parts made of stainless steel 1.4571
- ✓ Connection to the existing flue gas system incl. flue gas damper, exhaust air duct, steel construction and insulation
- ✓ Heat capacity ECO 1.210 kW (52m<sup>3</sup>/h from 85->105°C)
- ✓ Engineering (process engineering, flow optimisation, design engineering)
- ✓ Assembly
- ✓ Start-up

## Heat recovery system for aluminium melt of 14.040 Nm<sup>3</sup>/h with 640°C

### Scope of delivery:

- ✓ Heat exchanger -material test
- ✓ ECO Cat. IV with heat exchanger tubes made of P235GH for network return preheating of the high temperature water network
- ✓ Casing parts made of stainless steel 1.4828
- ✓ Connection to the existing flue gas system incl. clean gas fan, flue gas damper, silencer, steel construction and insulation
- ✓ Heat capacity ECO 2.590 kW (38 m<sup>3</sup>/h from 70 -> 130°C)
- ✓ Engineering (process engineering, flow optimisation, design engineering)
- ✓ Assembly section 1
- ✓ Assembly section 2
- ✓ Control with control cabinet
- ✓ Start-up



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We are a certified welding company in accordance to ÖNORM M7812, quality class 1 for tank and system construction.

Since 2001 we are certified to ISO 9001, which was renewed in 2013.

- ✓ ISO 9001
- ✓ § 14 Boiler Act
- ✓ AD 2000 Data sheet HP 0
- ✓ EN ISO 3834-2
- ✓ EN1090

