

IEA Bioenergy Task 33
Innsbruck 03.05.2017

Operating experience small scale gasification - CHP



IEA Bioenergy – Innsbruck 05.2017

URBAS
energietechnik

URBAS Introduction & Overview

URBAS Maschinenfabrik
Ges.m.b.h

Founded 1929

No. of Employees

Appr. 450

Manufacturing Facility

35,000m²

Market Sectors and
Capabilities.

Energy Technology

Steel Construction

Hydroelectric



Energy Technology

Warm Water $\leq 110^{\circ}$ C

Hot Water $> 110^{\circ}$ C

Steam

Combined Heat and Power (CHP)

with Steamturbine or Gasification



URBAS Steel construction

Short overview

- Steel construction in different specifications

Project Examples



URBAS Hydro power steel construction

Short overview

- Hydro power steel construction in different specifications

Project Examples



URBAS Biomass boiler

Short overview

- Biomass boiler from 0,5 MWth up to more than 25 MWth

Project Examples



Hot water boiler



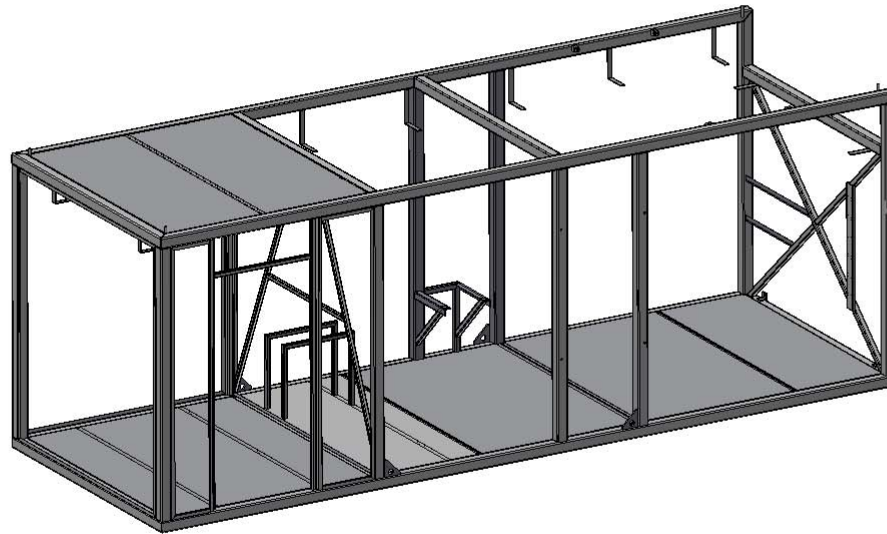
CHP by steam process up to several MWel power



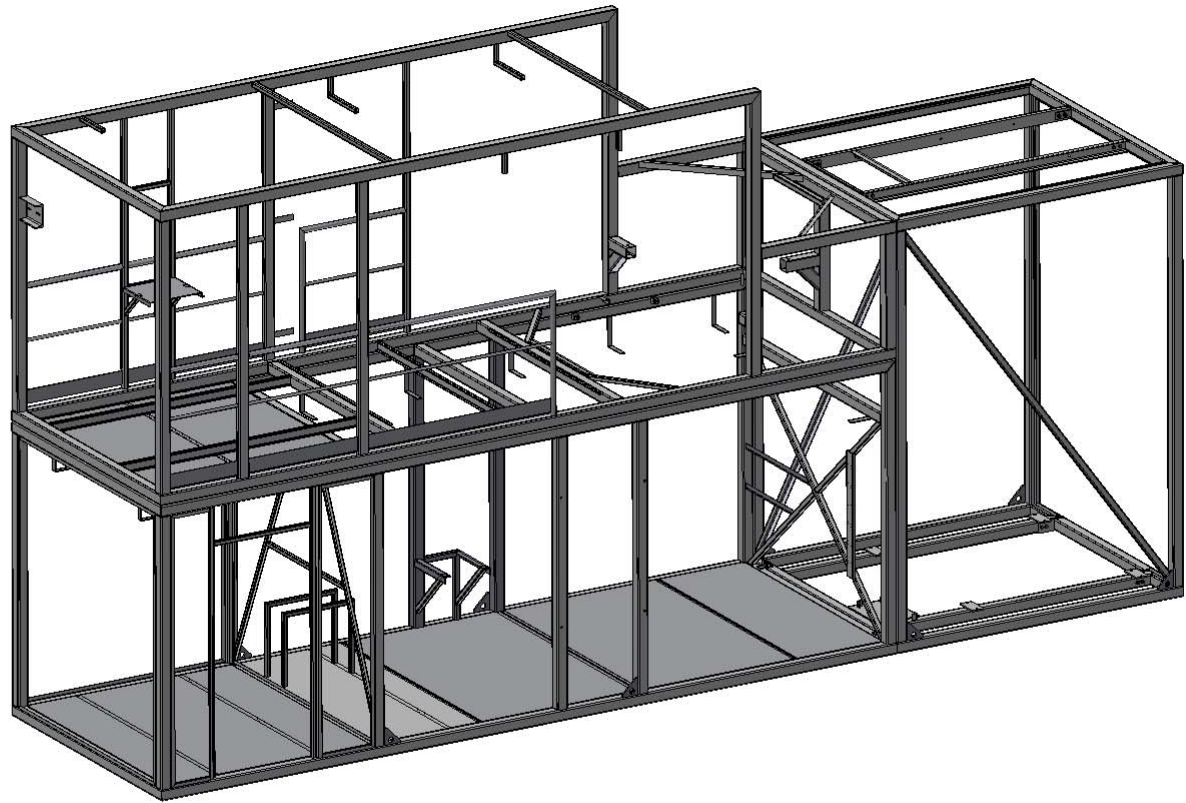
Woodgas-CHP



800 kWth – 1 t/h steam



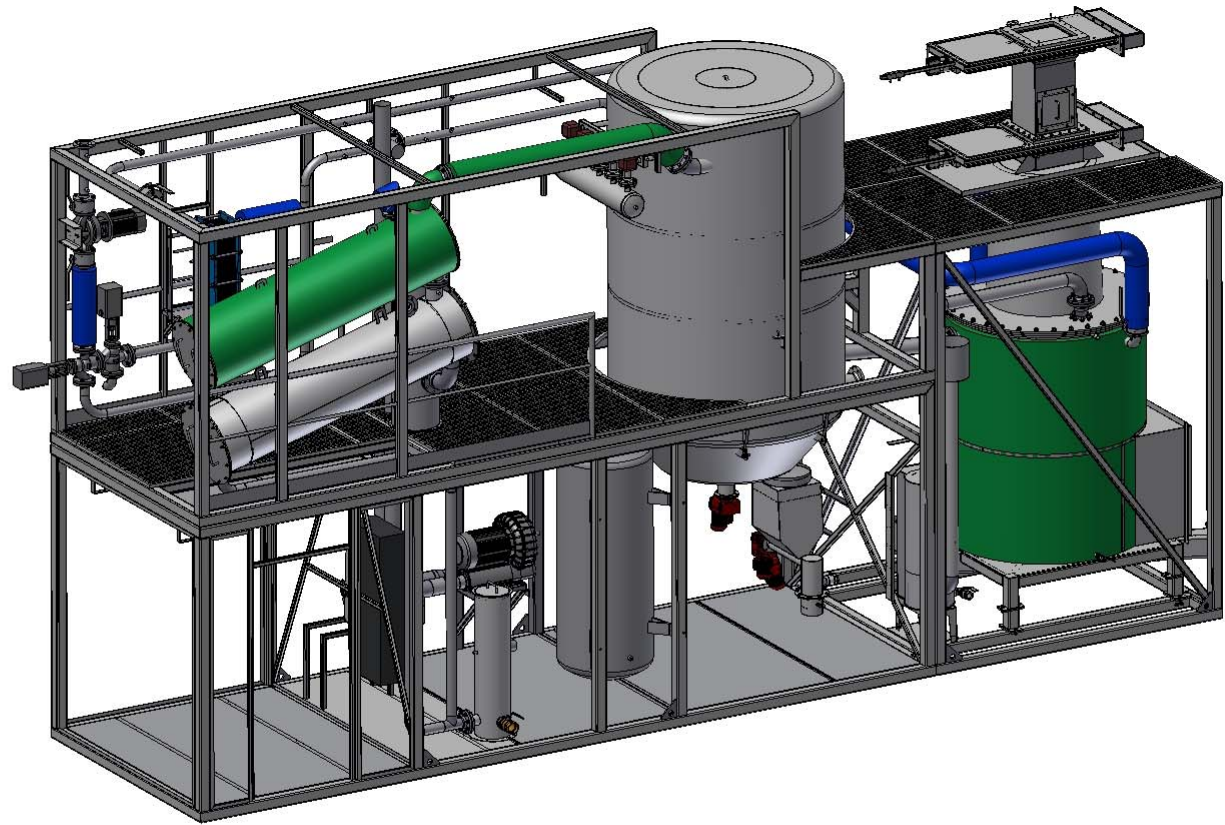
URBAS concept- Modular Construction



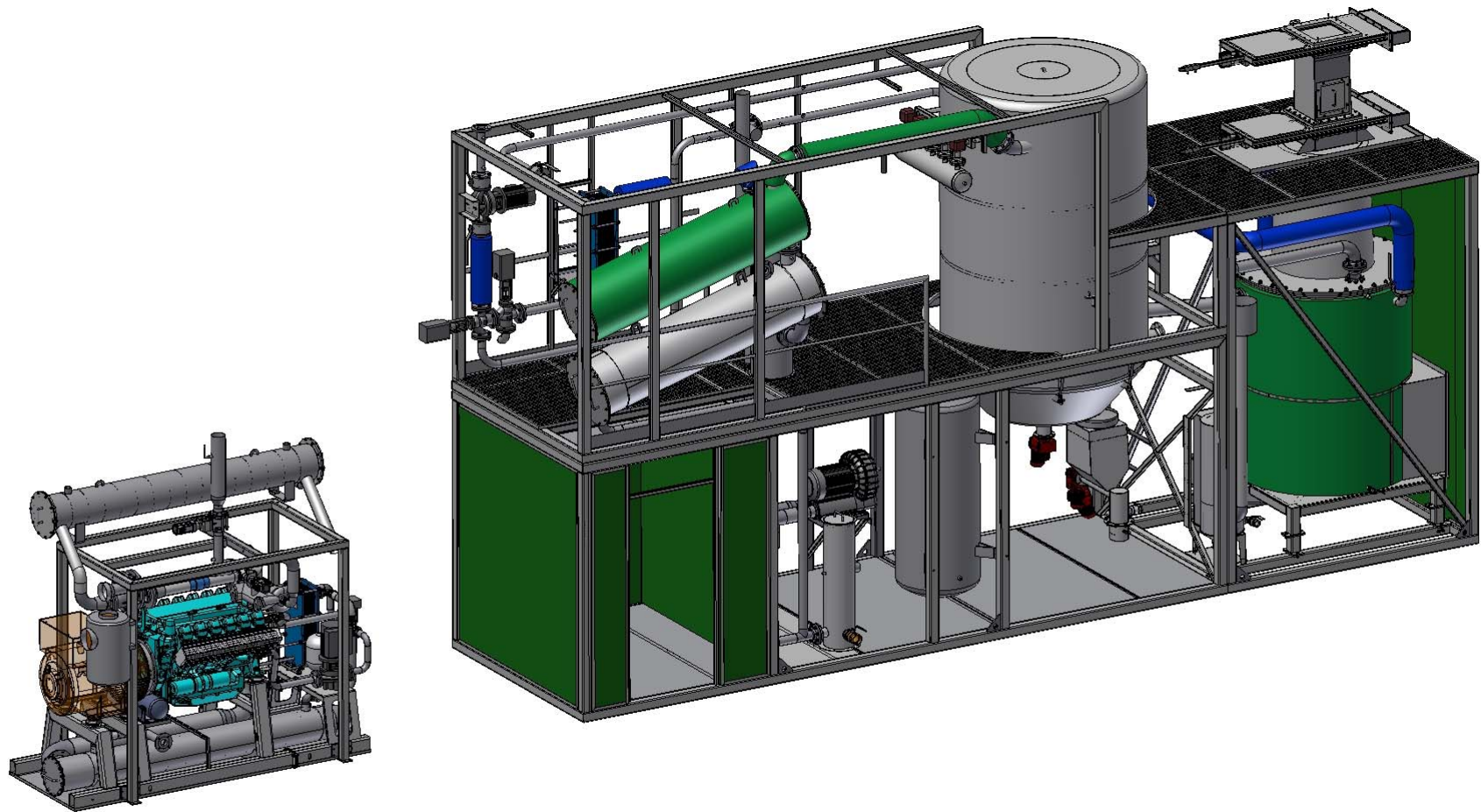
URBAS concept- Modular Construction

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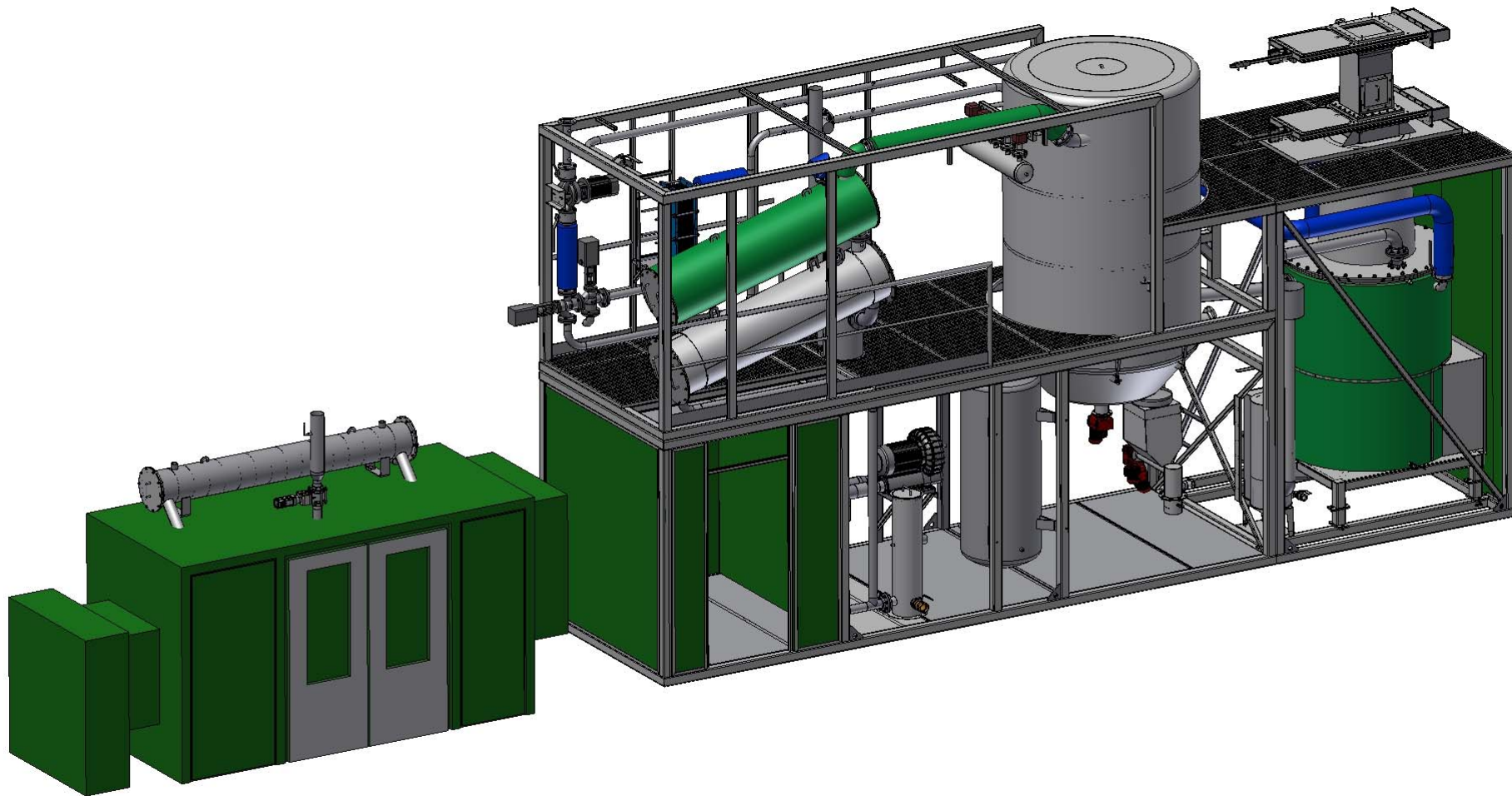
URBAS concept- Modular Construction



URBAS concept- Modular Construction

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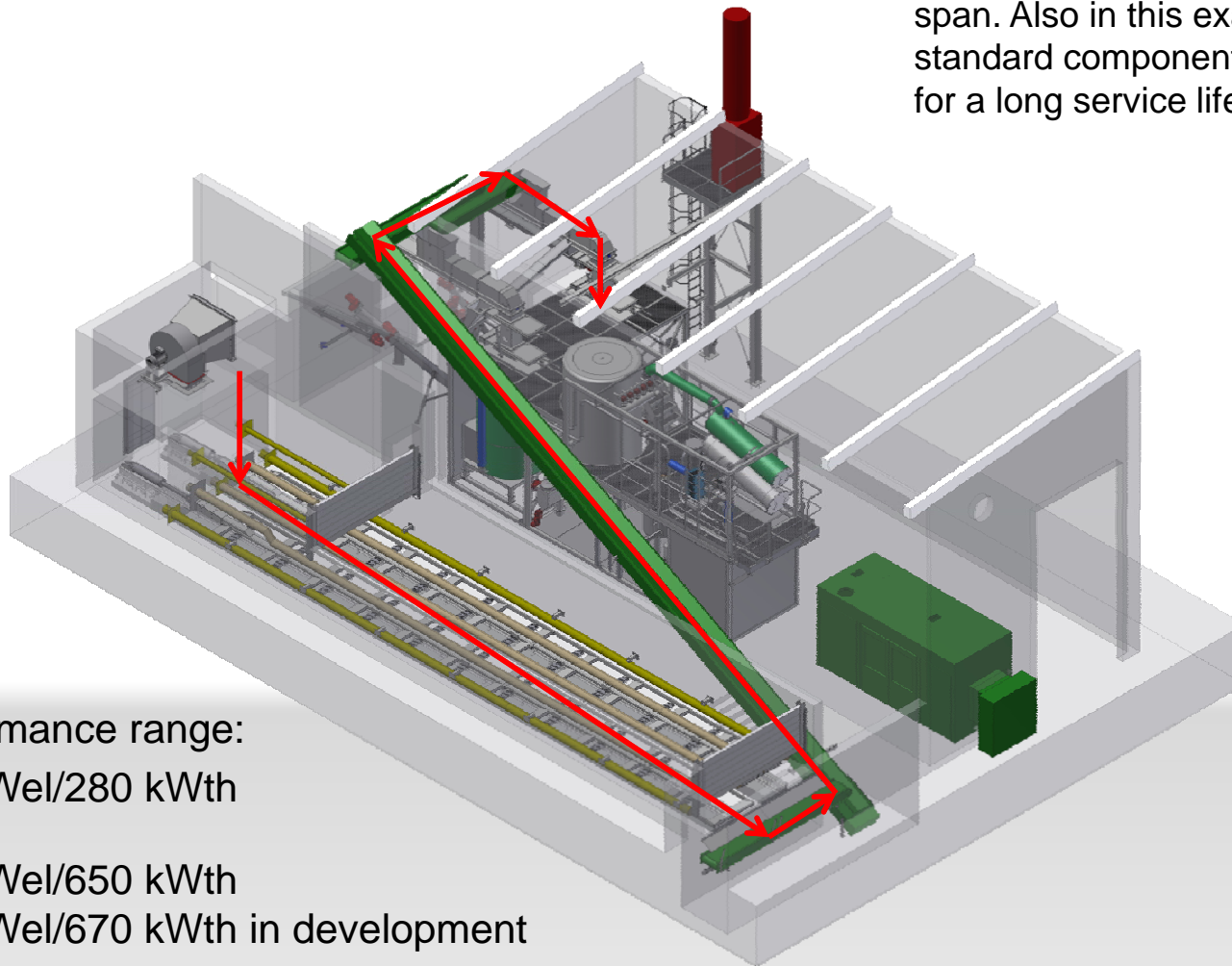


URBAS concept- Modular Construction

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As usual industrial buildings or steam power plants are designed for long life span. Also in this example industrial standard components are designed for a long service life.



Performance range:
150 kWel/280 kWth
up to
400 kWel/650 kWth
450 kWel/670 kWth in development

URBAS concept- Modular Construction

Correct Biomass for Gasification

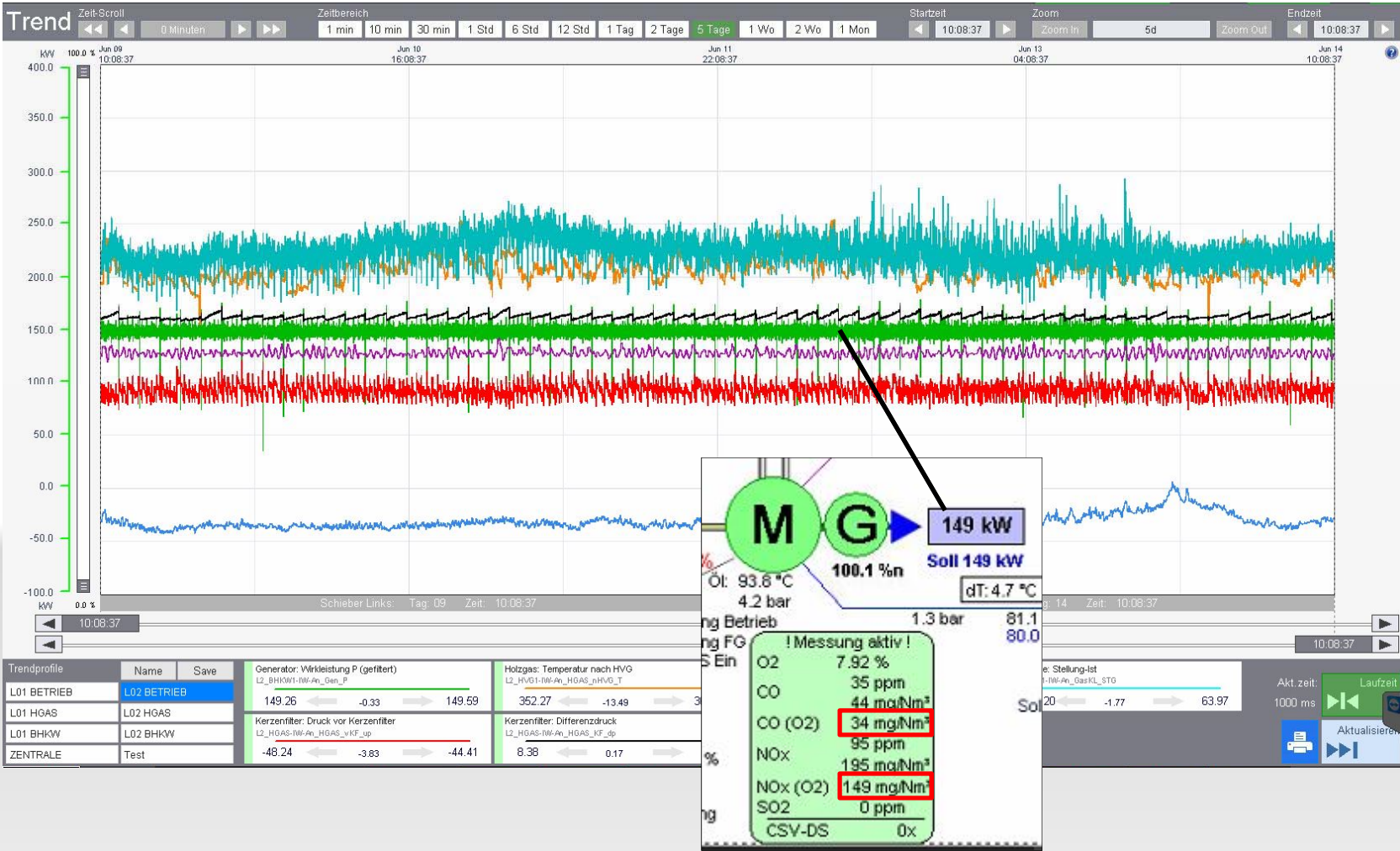
- The correct biomass fuel is essential for long term functionality and efficiency of the Woodgas CHP.

Forest woodchip.:	100%
Sapwood.:	< 30%
Bark:	< 10%
Moisture Content.:	5 < w < 18 %
Heating Value.:	4,2–4,8kWh/kg
Granulation.:	P63 – EN 14961 or
40%	110-130mm
60-100%	60-110mm
20%	20-60mm
5%	< 20mm



Correct Biomass for Gasification

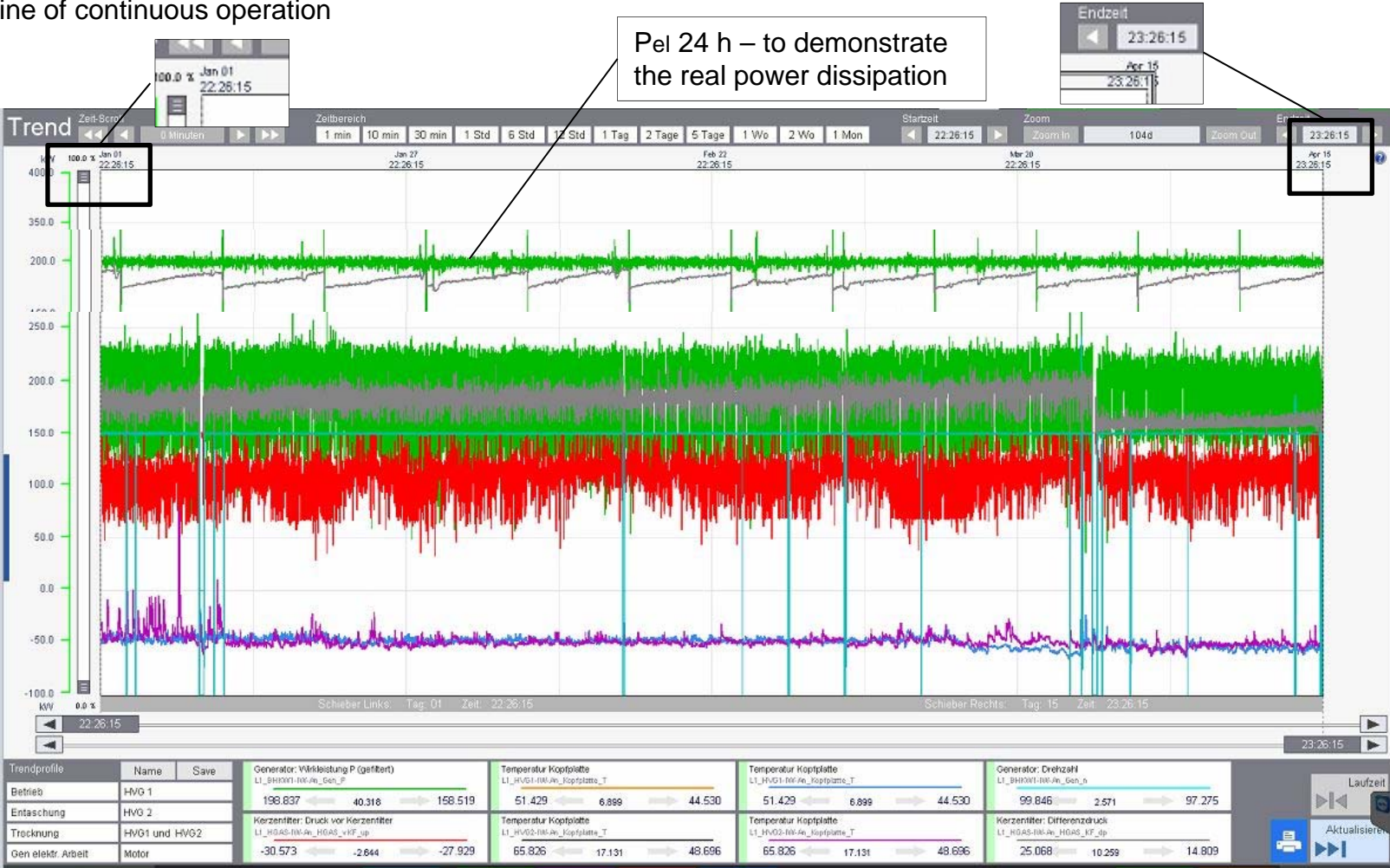
Trend line of continuous operation (Trend length 5 days)



Correct Biomass for Gasification

Trend line of continuous operation

Pei 24 h – to demonstrate the real power dissipation



Biomass for Gasification out of specification – but with good results



Split wood – there are no fine parts

Forest residue



Shredded waste wood

Without sieving

Unwanted substances in the fuel



Fuel outside the specification



Broken backstays due to bad concrete

Metal parts from other sources



Those malfunction objects are causing problems in the feeding system and in the reactor.

Important points for long-term continuous operation

- Proven technology
- Site-specific installation
- Suitable biomass
- Good maintenance
- Good cooperation between customer and

supplier



Any questions?



Thank you!



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