

EUROPEAN HEAT PUMP SUMMIT

POWERED BY CHILLVENTA

SYMPOSIUM + EXPO
NUREMBERG, 20-21.10.2015

Industrial | Commercial | Residential
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Application of gas driven heat pumps and field test results

Axel Albers



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Thermotechnology



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Overview of content

Practical experience of a commercial gas absorption heat pump application

- Technical information on light commercial gas absorption heat pump
- Example of installation in existing building
- Comparison of system performance

Outlook to new applications and market

- Technical information on residential gas absorption heat pump



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Technical data Logatherm GWPL41

Logatherm	GWPL 41
Output power (A7/W35)	41 kW
GUE (A7/W35)	165%
Output power (A0/W50)	35kW
GUE (A0/W50)	139%
Modulation	50-100%
Max. flow temperature CH	65°C
Max. flow temperature DHW	70°C



Logatherm gas heat pump is available as air, water and ground source version.



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Targets of demonstration object:

- Illustration of outdoor installation in residential area
- Proof of significant energy and CO₂ savings

Demonstration object

- Primary school, build 1927, energy demand 150kW (~200.000 kWh/a)
- Original heating system:
 - low temperature gas boiler
- New heating system:
 - Gas heat pump (40kW) for basic load
 - Gas condensing boiler for peak load
- Target: energy reduction of 30%



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Demonstration object



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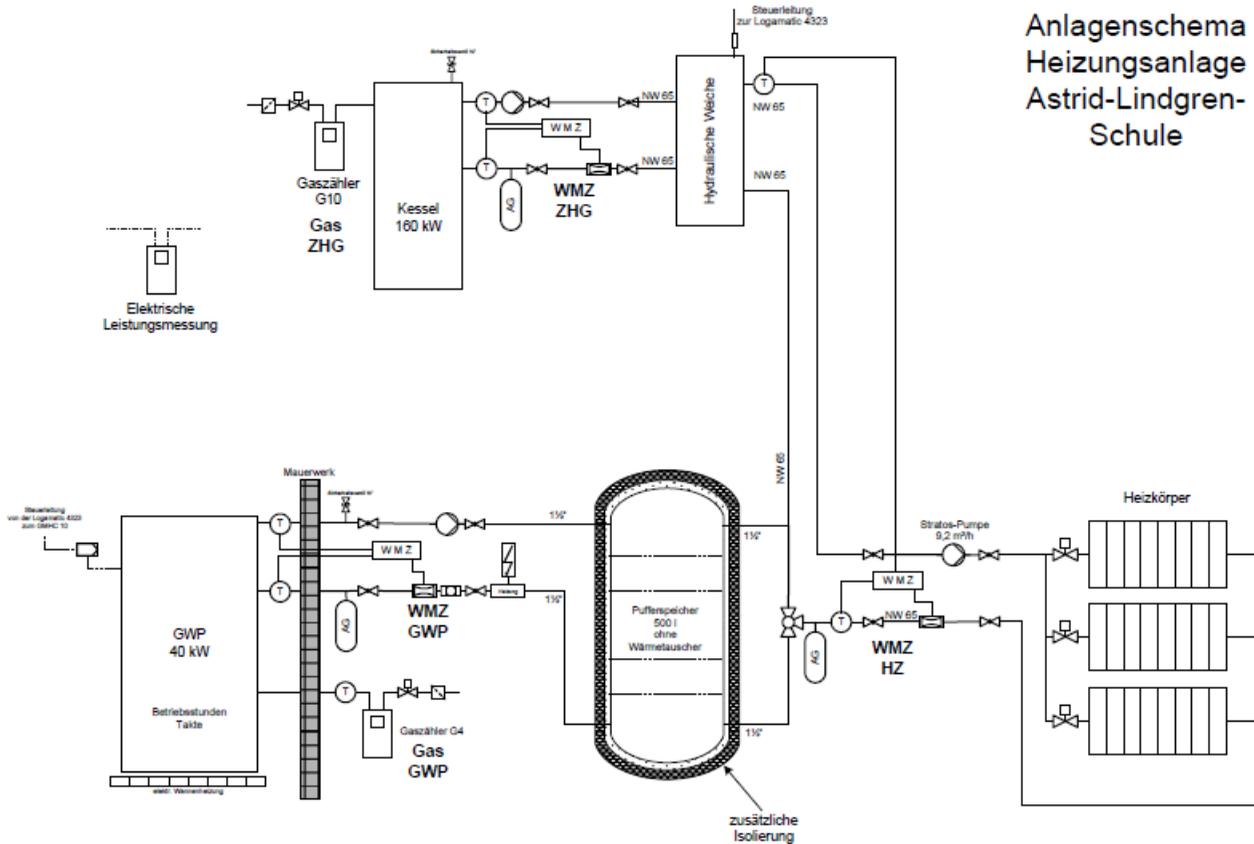
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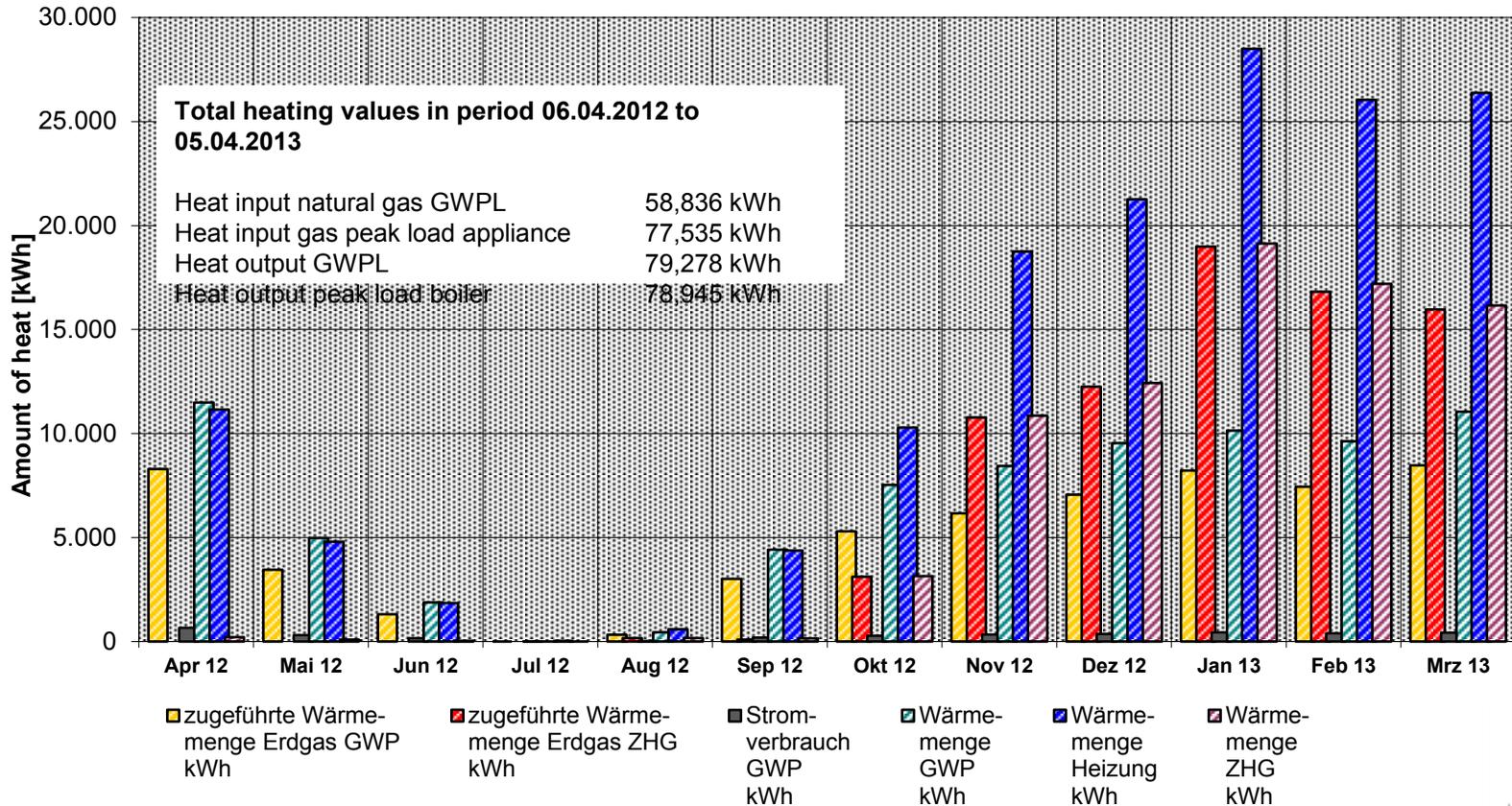


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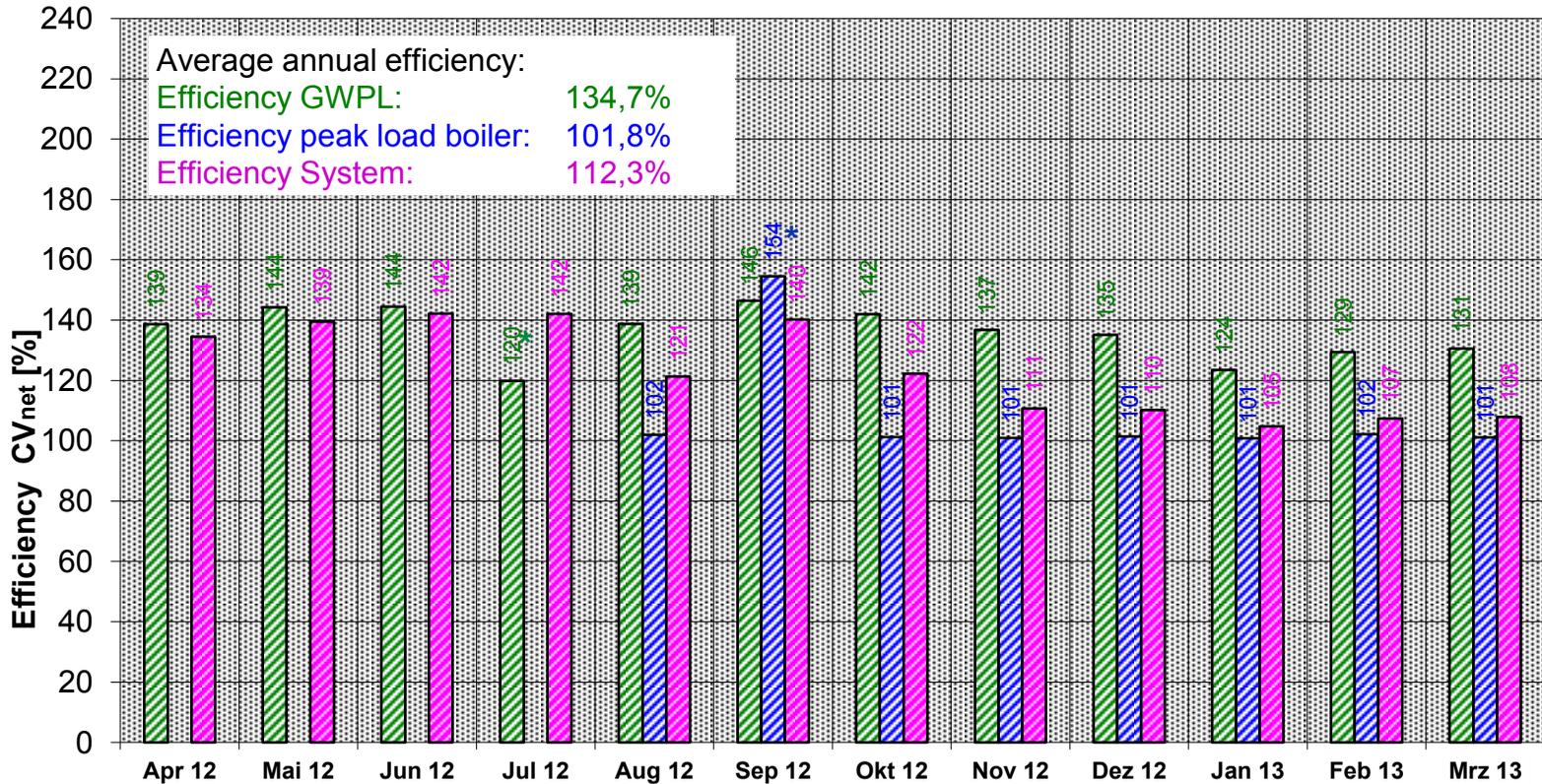
Hydraulic setup



Monthly heat balance GWPL



Monthly efficiencies



*some problems with recording of data led to unrealistic value



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Results

- Historical data used and compared to monitoring results
- Climate compensated: heating limit degree days,
Assumption: Heating limit $T_{HG} = 15^{\circ}\text{C}$

Time Period	G15 [Kd]	Gas consumption		Saving [%]
		absolute [kWh]	specific [kWh/Kd]	
13.11.2008 - 22.10.2009	1996	187.000	93,7	33%
23.10.2009 - 14.12.2010	2692	282.000	104,8	40%
06.04.2012 - 05.04.2013	2169	136.371	62,9	

Average saving: 37% → target achieved!



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Overview of content

Technical information on domestic gas absorption heat pump

- Technical information on residential gas absorption heat pump



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Gas absorption heat pump for domestic use

Logatherm	GWPS192-18i
Output power (B0/W65)	18 kW
ErP Label (average climate, high temperature application)	A++
Max. flow temperature	70°C
Heat source	Geothermal Air
Modulation	25-100%
Initial preview	ISH 2015
Planned market introduction	2016





Thank you very much!

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