

# Vaillant systems with zeoTHERM VAS 106/4

Hendrik Tiemeier



## Present product range

### two systems

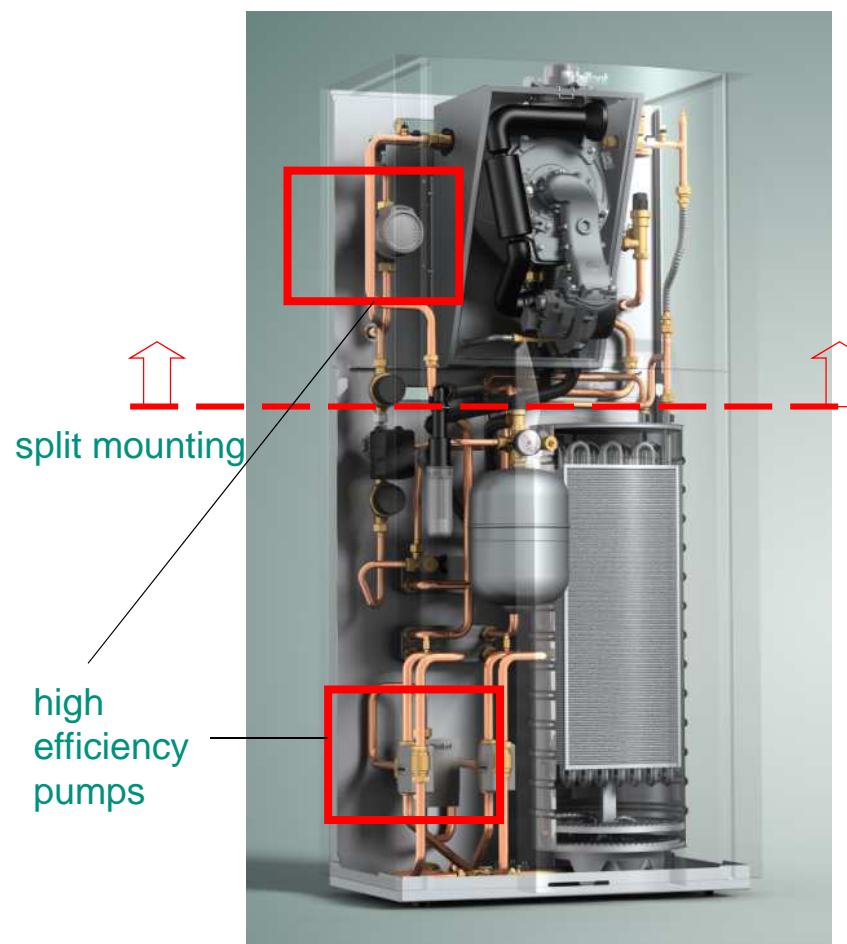
The zeolite gas heat pump is now offered in two systems

- zeoTHERM plus, 3 x flat plate collector VFK 145 incl. entire solarthermal accessories and bivalent storage tank VIH S 300
  - zeoTHERM exclusiv, 3 x vacuum tube collector VTK 1140 incl. Solarthermal accessories and special bivalent storage tank for heat pumps VIH RW 400 B
- >Improvement of direct use of solar energy for heating  
>introduction of high efficiency pumps  
→ higher standard efficiency



## Technical data of zeoTHERM VAS 106/4

Rated heat output range Heating	1,5-10 kW
Rated heat output range d.h.w.	4,2-12,5 kW
Adjustable flow temperature	20-75 °C
Recommended max. flow temperature HC $\leq$	40 °C
El. power consumption max.	100 W
Appliance width	772 mm
Appliance height incl. flue outlet	1.700 mm
Appliance depth	718 mm
Transport weight (without casing)	160 kg
Operating weight	175 kg
Integrated controller	
zeolite module > no moving parts / no maintenance	



The zeolite gas heat pump is an innovative product offering maximum energy savings with well-known components to the installer. No maintenance of zeolite module necessary.

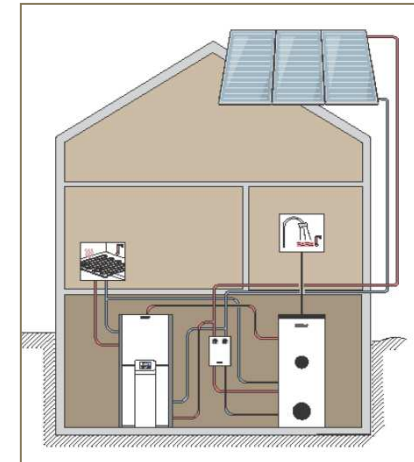
## Particularity of Vaillant zeoTHERM

### typical installations / recommendations

- New-built / modern. buildings with max. 10 kW heating demand,
- DHW preparation with up to 12,5 kW
- suitable roof for installations of solar collectors (min. 8 m<sup>2</sup>, ideally aligned to south-west)
- Floor heating or panel heating with flow temp. < 40°C
- Flexible installation of zeoTHERM in basement, on floors or in the attic
- gas supply required (gas or liquid gas)

### maintenance

- Zeolite module without any moving parts and free of maintenance
- Well known components of gas condensing / renewables portfolio
- No special skills required for installation

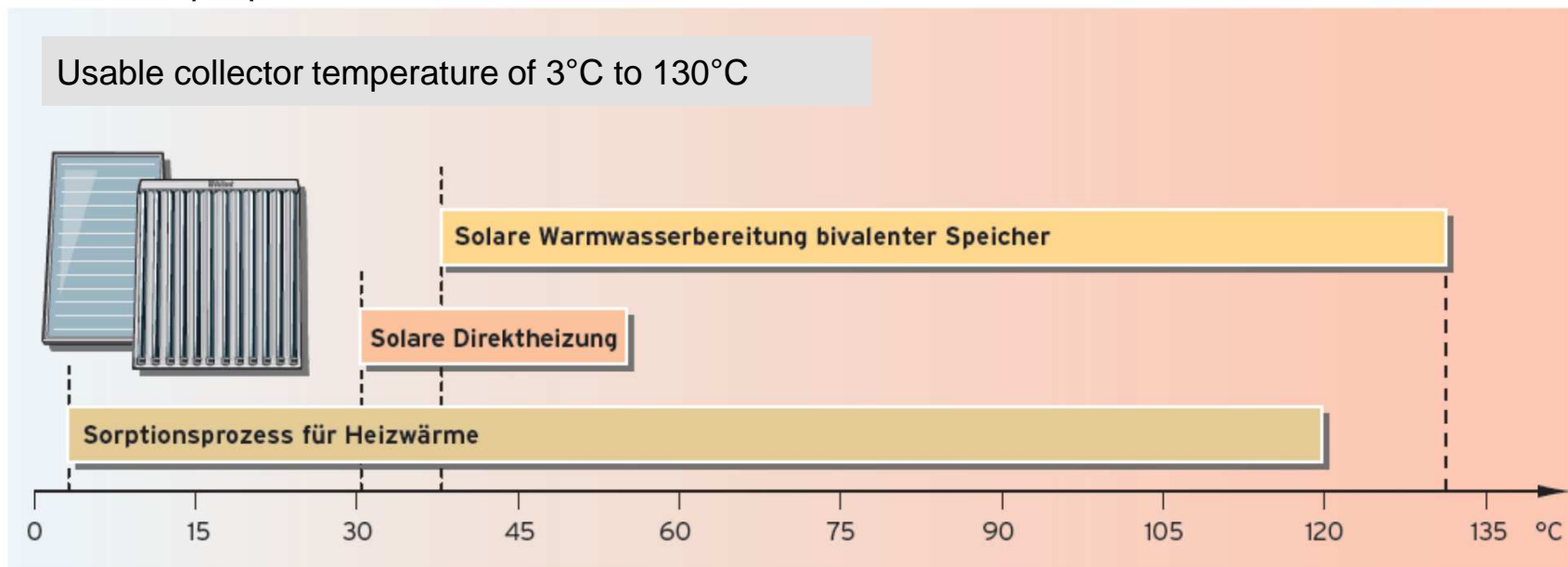


**zeoTHERM is ideal for installations up to 10 kW heating demand and low flow temperatures. Only maintenance of well-known equipment is required.**

## Utilisation of the entire temperature range offered from the solar collectors

The entire collector temperature range of +3°C to +130°C is usable for

- solar supported heating
- the sorption process
- solar dhw preparation

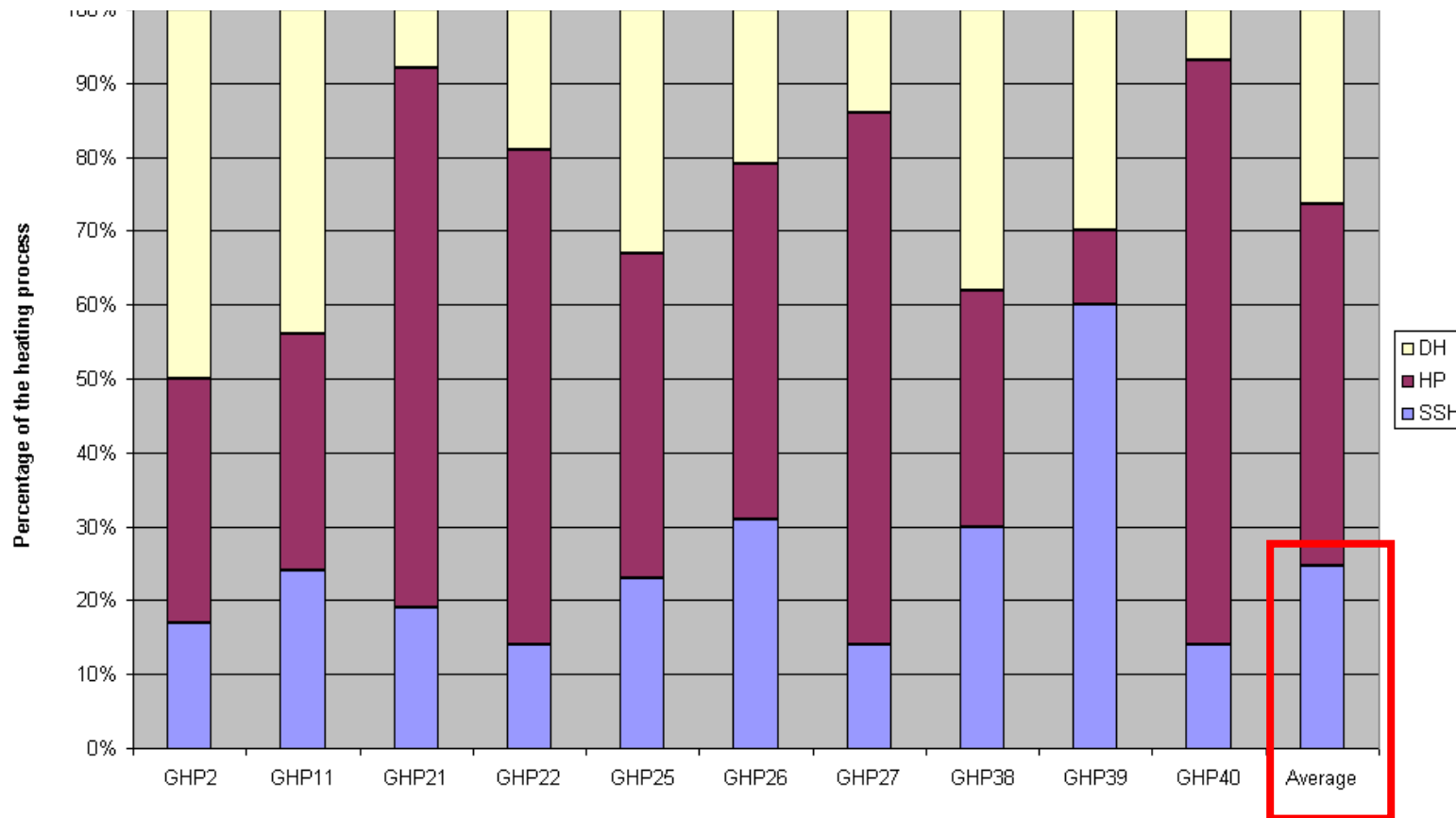


Use of solarthermal energy over a wide collector temperature range

## IGWP field test

distribution of heating modes:

direct heating mode incl. dhw (DH) / heat pump mode (HP) / solar supported heating (SSH)



Field test installations have shown that on average in 24% of the time, heating was done by direct solar heating (in the considered period of 20<sup>th</sup> to 24<sup>th</sup> of october 2011)

# IGWP field test – an example

## Daily evaluation of the heat

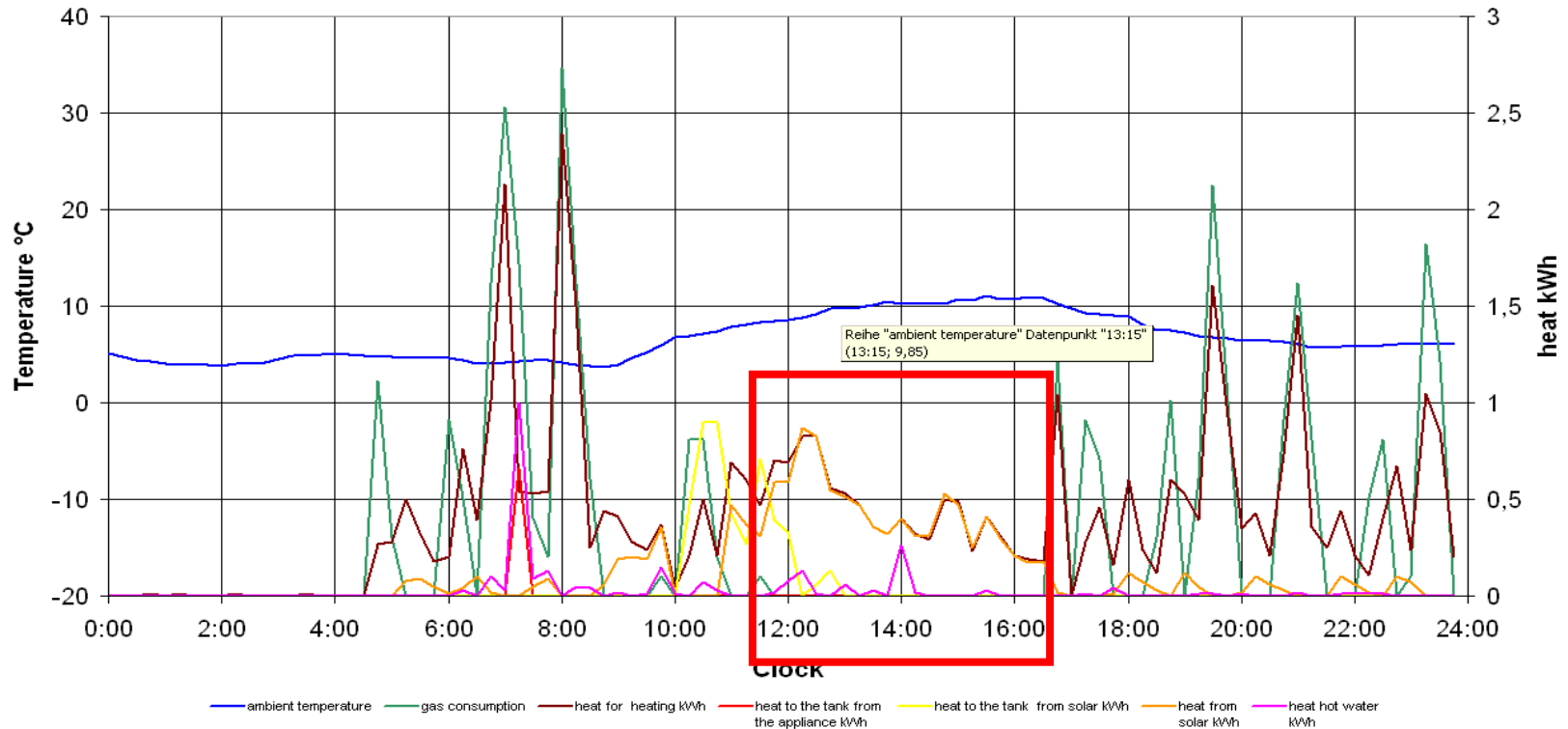
20.10.2011

e-on | Ruhrgas

TF-Brünje

Vaillant zeolite-heat pump, example

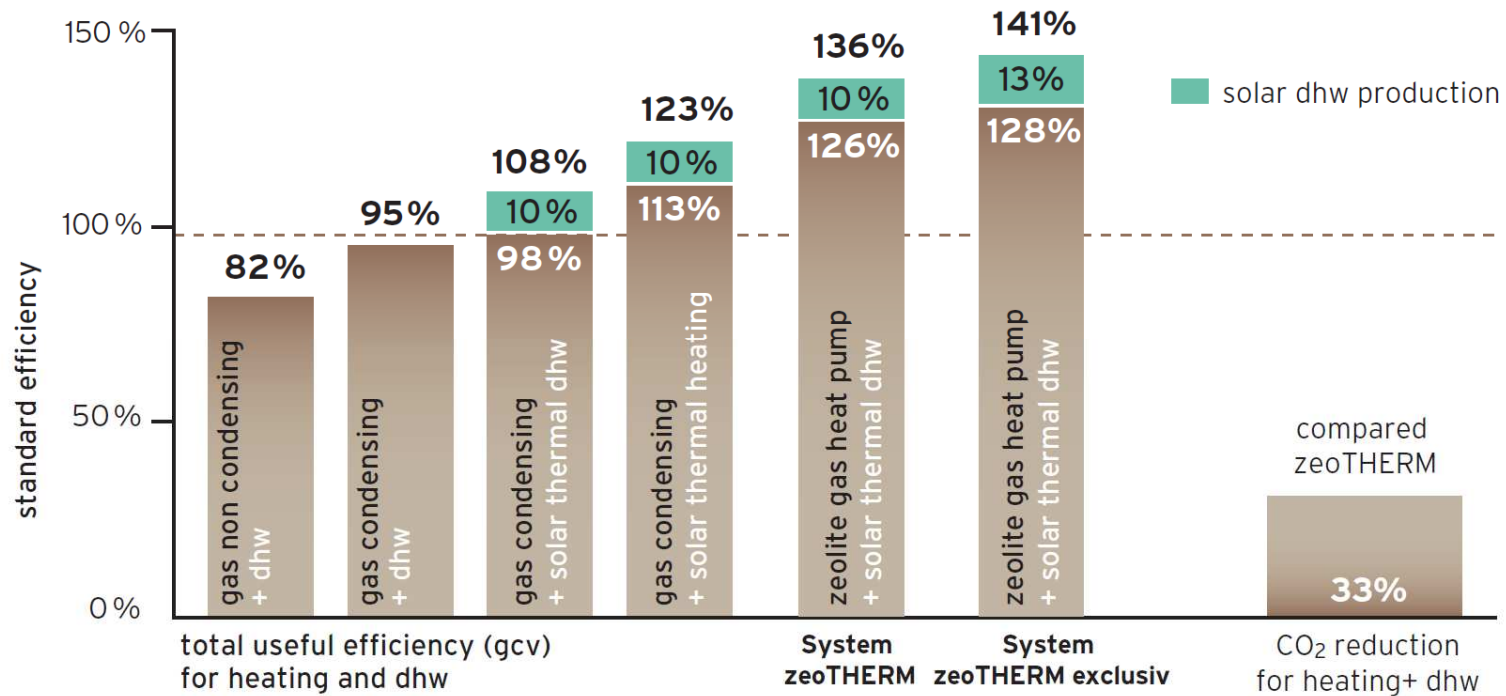
gas consumption kWh	32,01	heat to the tank from solar kWh	4,59
heat of the heat pump kWh	40,03	heat solar kWh	12,29
heat to the tank from the heatpump kWh	0,66	heat hot water kWh	2,54
<b>efficiency heat pump</b>	<b>127,1</b>	<b>efficiency heat pump and used hot water</b>	<b>133,0</b>



**Increased efficiency (105% to 127%) due to solar supported heating between 11 am to 4:30 pm. In sunny, cold weather conditions solar direct heating with only 3 collectors can be sufficient.**

## Positioning

System standard efficiency up to 141%. The overall system is up to 18% better compared to a gas condensing system with solar supported heating

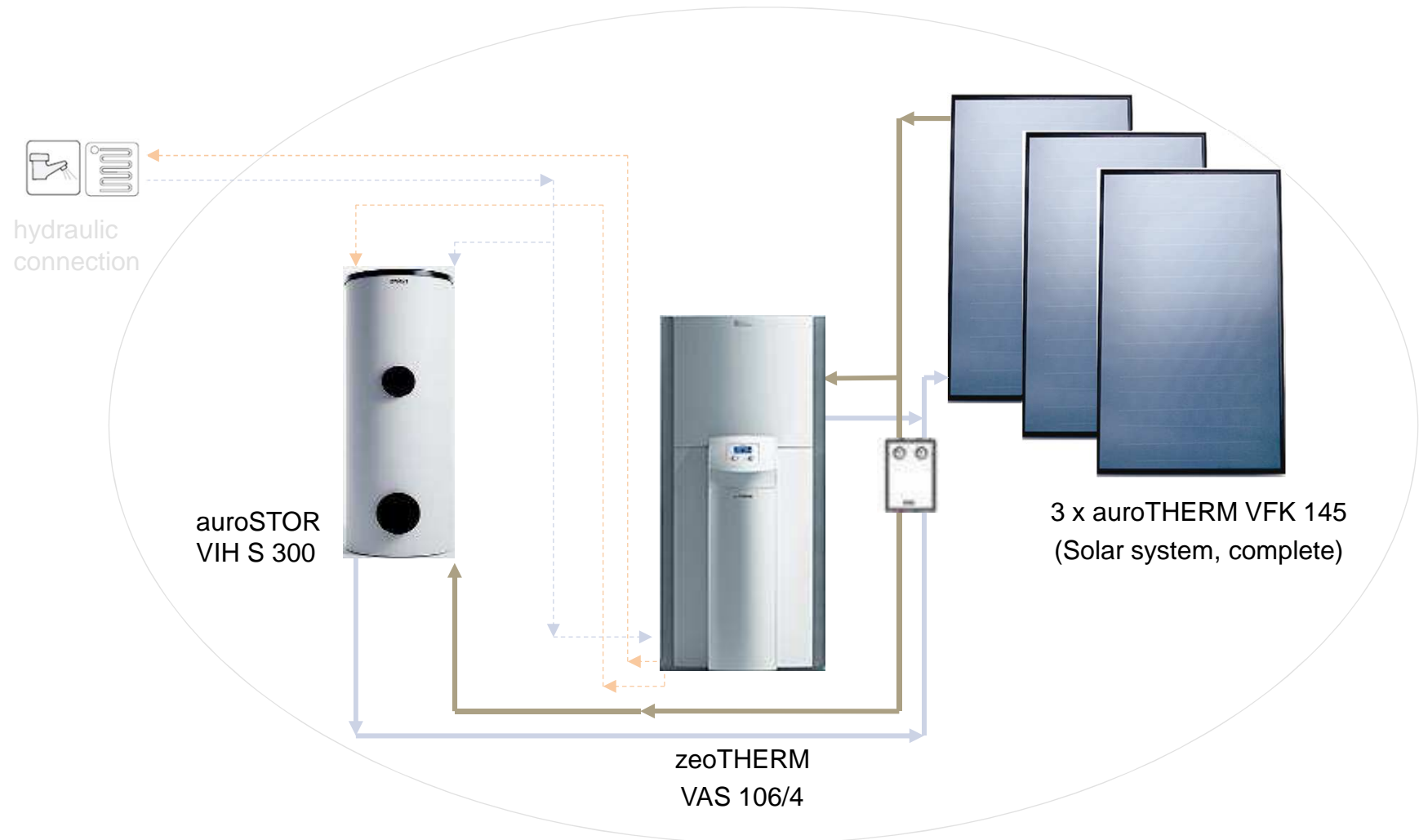


**System zeoTHERM with significantly higher standard efficiency compared to WHBc with solar dhw preparation and solar heating support.**

**Thank you for your attention!**



## System components of the Basic System



## System components exclusive system

