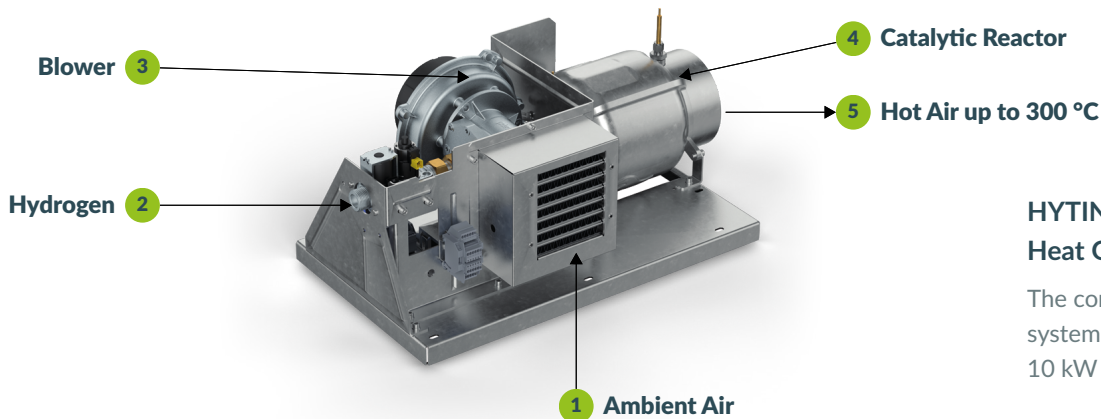


Hydrogen to Heat

Emission-free, Flameless, Economical

THE TECHNOLOGY

HYTING generates heat from hydrogen – without a burner, without a flame. At its core is a patent-pending catalytic heat generator: ambient air **1** is mixed with hydrogen **2** by the blower **3** at a non-flammable concentration of approx. 3 vol.-% – well below the lower flammability limit of hydrogen. In the catalytic reactor **4**, hydrogen and oxygen react without a flame and release heat. The result is a clean hot air stream of up to 300 °C **5**.



HYTING Heat Generator

The core of every HYTING system. Shown here: the 10 kW unit HG10.

HIGHEST EFFICIENCY

39.4 kWh

energy content of 1 kg of hydrogen
(higher heating value, HHV)



> 96%

HYTING heat generator
efficiency*



37.8 kWh

usable thermal energy as
clean hot air

KEY FEATURES



Modular & Scalable

- 10 kW and 50 kW units (HG10/HG50), scalable in parallel into the megawatt class
- 10:1 turndown ratio for fully modulating heat output
- Can be integrated into new and existing systems



Proven, Certified, Ready to Deploy

- 2,500-hour endurance test without failures – equivalent to more than 10 years of real-world operation
- Low maintenance thanks to proven series components



Zero Emissions

- No CO₂, CO, NO_x, particulate matter or VOCs



Inherently Safe

- Flameless process – the hydrogen concentration always stays below the lower flammability limit
- No flame monitoring required



Easy to Supply

- Runs on all hydrogen grades (incl. Grade A)
- Only 20 mbar supply pressure required

OUR OFFER

60-minute initial meeting

Do you want to decarbonize a heat process or reduce peak loads in space heating? Your building or process, your load profile, your hydrogen situation – we deliver a first assessment. Implementation is turnkey. Write to us at sales@hyting.com

STRONG PARTNERS

ebm-papst (manufacturing) • Kampmann (system integration) • KIWA (certification)
SET100 list 2026 (dena – German Energy Agency)



HYTING GmbH

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* HYTING's efficiency of 96% refers to the higher heating value of hydrogen (HHV = 39.4 kWh/kg), validated by Fraunhofer IOB; this corresponds to an efficiency of 11.4% based on the lower heating value of hydrogen (LHV = 33.3 kWh/kg).

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APPLICATION FIELD PROCESS HEAT

Emission-free Process Heat up to 300 °C

Industrial process heat above 100 °C is considered hard to decarbonize: heat pumps do not reach these temperatures, and electricity-based solutions are inefficient and often limited by grid capacity. Now there is a technical solution that is efficient, economical, safe and easy to implement: HYTING produces emission-free hot air up to 300 °C – flameless and catalytic, without a heat exchanger, directly in the process.

The Benefits

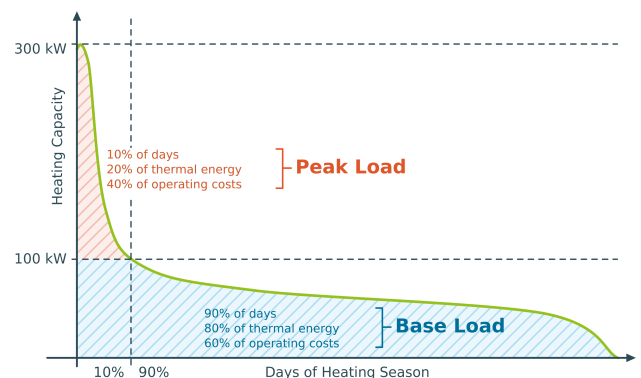
- **Improve your ESG rating:** eliminate Scope 1 and NOx emissions completely
- **Increase efficiency:** no heat exchanger required – up to 30% higher net efficiency across the system
- **Protect product quality:** residue-free air stream with no combustion by-products
- **Retrofit without downtime:** replace or supplement existing burners – independent of grid capacity

APPLICATION FIELD SPACE HEATING

Cutting costs by covering peak loads

On the coldest days, load peaks arise that set the energy price for the entire year: the capacity charge is based on the highest power drawn over the year – a single cold day can lock it in for twelve months. As a result, around 10% of the heating season causes 40% of operating costs.

In a hybrid system, HYTING covers exactly these peaks while the base system – a heat pump, waste heat or any other source – covers the base load. Both run permanently at their optimum operating point.



The Benefits

- **Up to -20% total cost** over ten years, including subsidies
- **Up to -70% capacity charges:** smaller grid connection, base load at its optimum
- **Emission-free** peak load coverage
- **Payback from ~2 years** of the extra CAPEX; typically < 7 years, 2-3 with existing H₂ infrastructure

Reference installation Markkleeberg near Leipzig, Germany

2,000 m² production hall in hybrid operation: three heat pumps for the base load (120 kW), two HYTING AirSYS Combi (40 kW each) for the peak load, in operation since March 2026

-20%

total cost over 10 years

-70%

lower capacity charge

AirSYS Classes

AirSYS ReFit **RETROFIT**

H₂ module for AHU retrofit, 10–300 kW: makes existing ventilation systems CO₂-free – no structural changes, no interruption of operations.



AirSYS Combi **NEW BUILD / REPLACEMENT**

Complete air handling unit (AHU) with an integrated HYTING heat generator, 10–300 kW – heating, ventilation and optional cooling in a single unit.



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