



YOUR ENERGY TRANSITION

Reach maximum independence.

With picea - the world's first year-round
electricity storage system..






Thousands
of picea are
our
mission.


1 picea avoids > 3 t CO₂/year.
This corresponds to a
CO₂ storage of 130 spruces.





365 DAYS OF SUN

Independent,
emission-free and safe
power supply with
picea

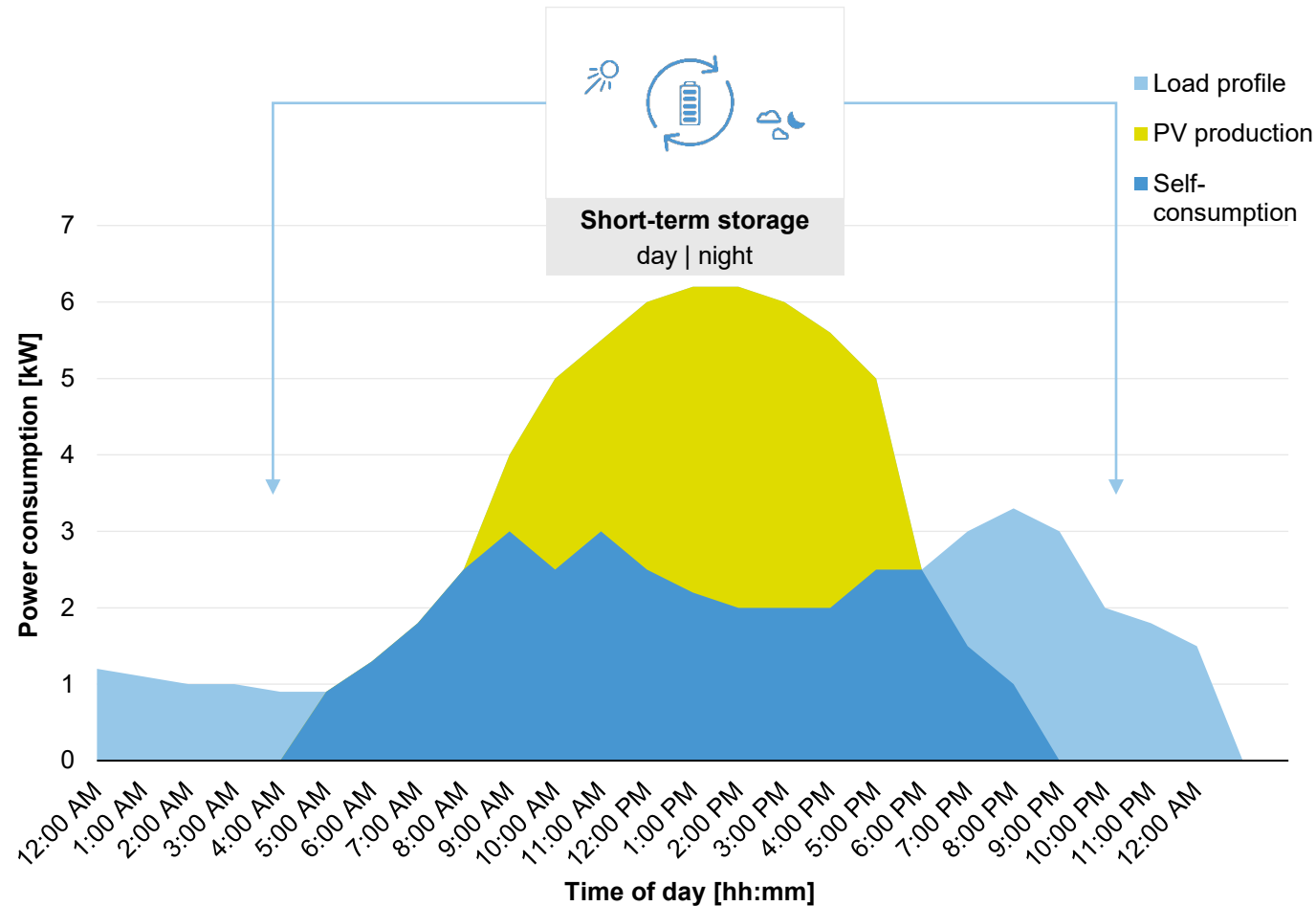
 ≤ 100 % independent

 100-fold storage capacity

 100 % CO₂-free

 100 % transparent

Storing electricity from the day for the night



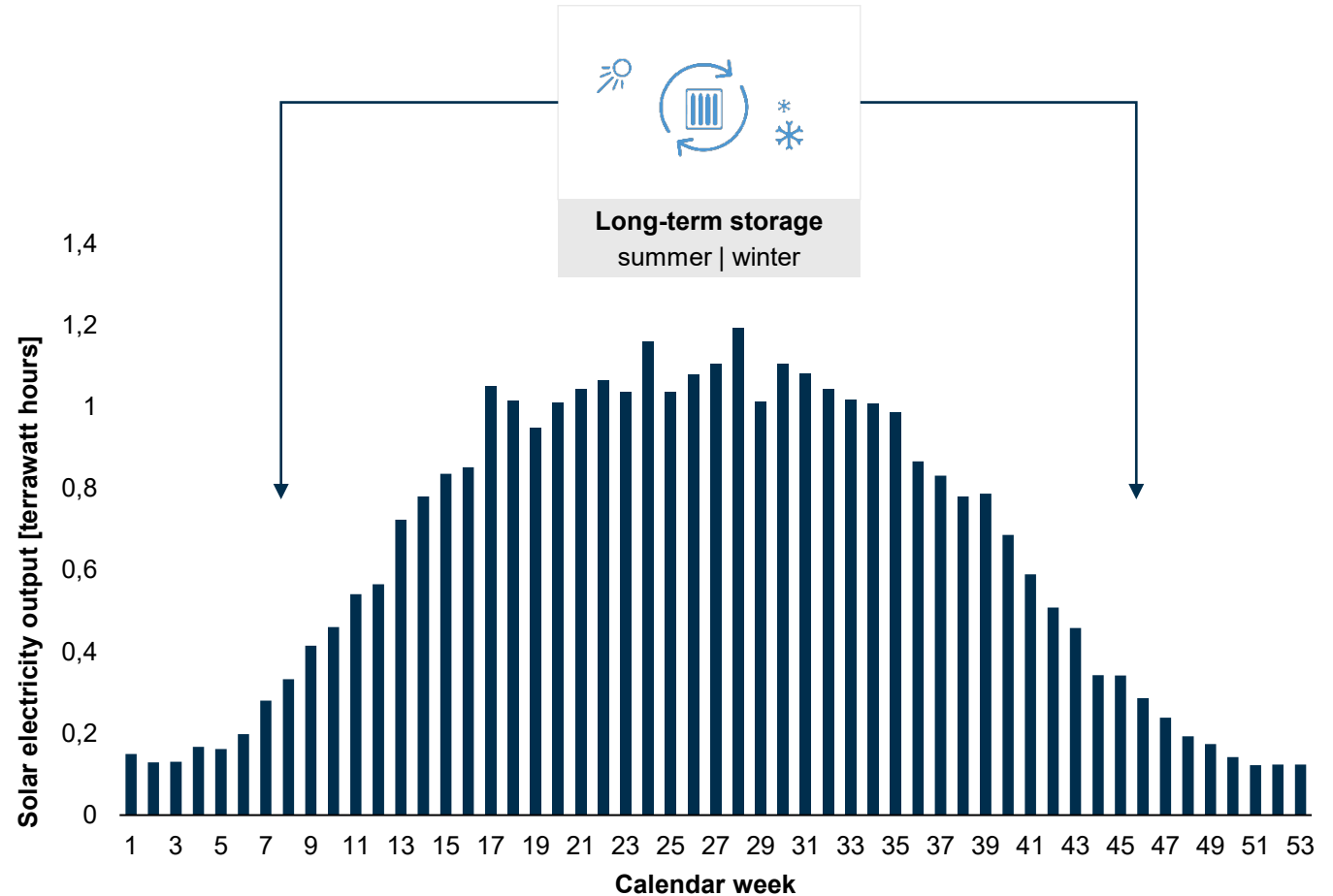
During the daytime energy turnover of a single-family home, the surpluses in PV generation can be stored in batteries so that they are available for electricity consumption at night.

Source: volker-quaschnig.de

Storing electricity from summer for winter

The seasonal course of electricity generation by PV shows a predominance in the summer months. During winter there is a lack of surpluses. Here, picea alone offers a real alternative for seasonal electricity storage.

- 100 times more storage capacity compared to conventional battery storage systems
- Investment costs approx. 10 times lower (assuming the same storage capacity)



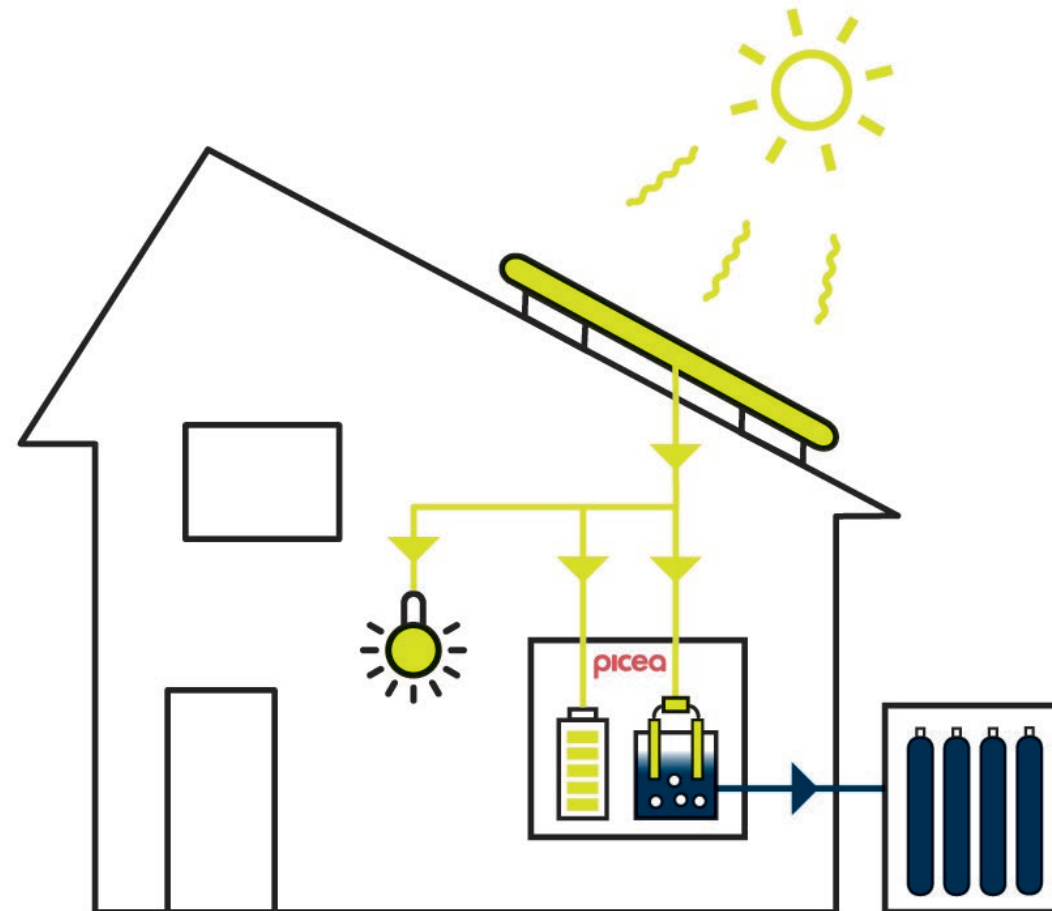
Source: energy-charts.info (weekly electricity generation in Germany, mean 2011 - 2021)

FUNCTIONALITY OF PICEA

How picea works in summer

picea converts the direct current of your PV system into the common alternating current. The solar surplus is stored in a battery and stored in form of hydrogen for the winter season.

- Direct use of energy in the household
- Battery is filled for day/night cycle
- Hydrogen is produced in the electrolyzer and stored outside the building
- Surplus can be fed into the grid

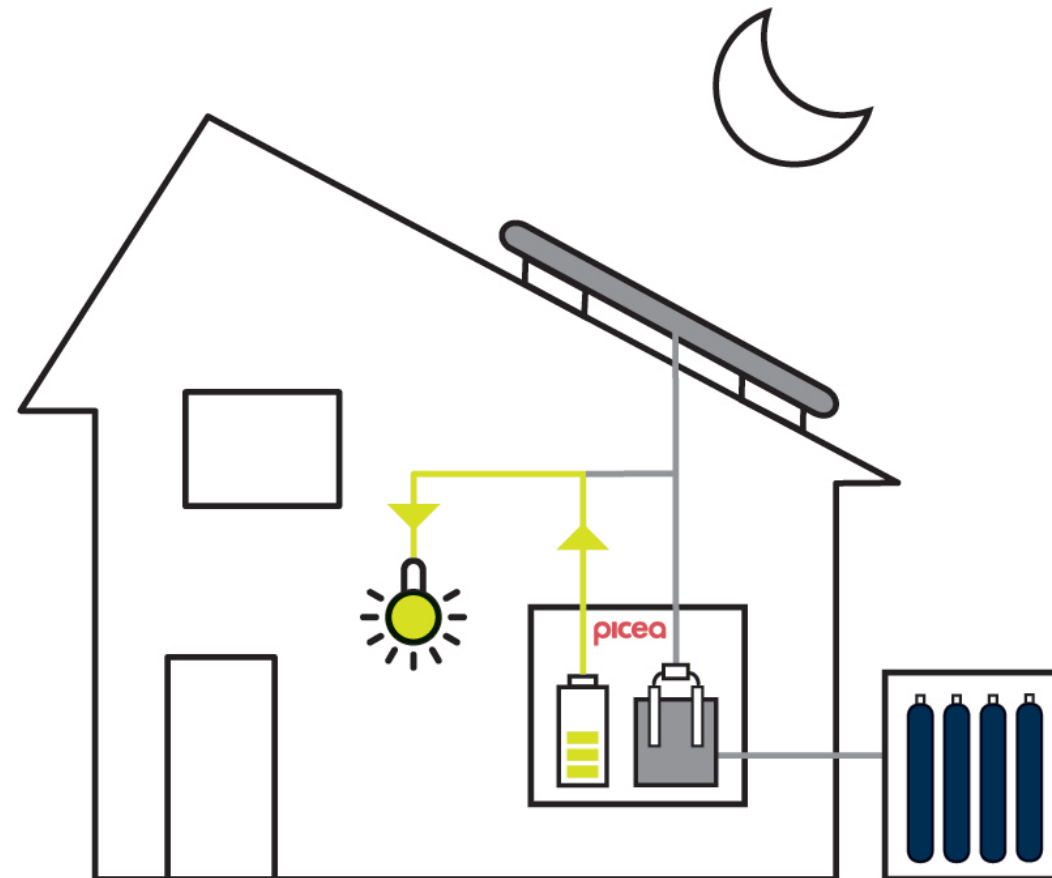


FUNCTIONALITY OF PICEA

How picea works at dusk

picea supplies the house with power from the battery. The battery, previously charged during the day, is sufficiently sized to cover the power demand in the day/night cycle or bad weather phases.

- Battery covers the day/night cycle or bad weather phases
- Weather forecasts enable targeted use of the battery for optimum life time

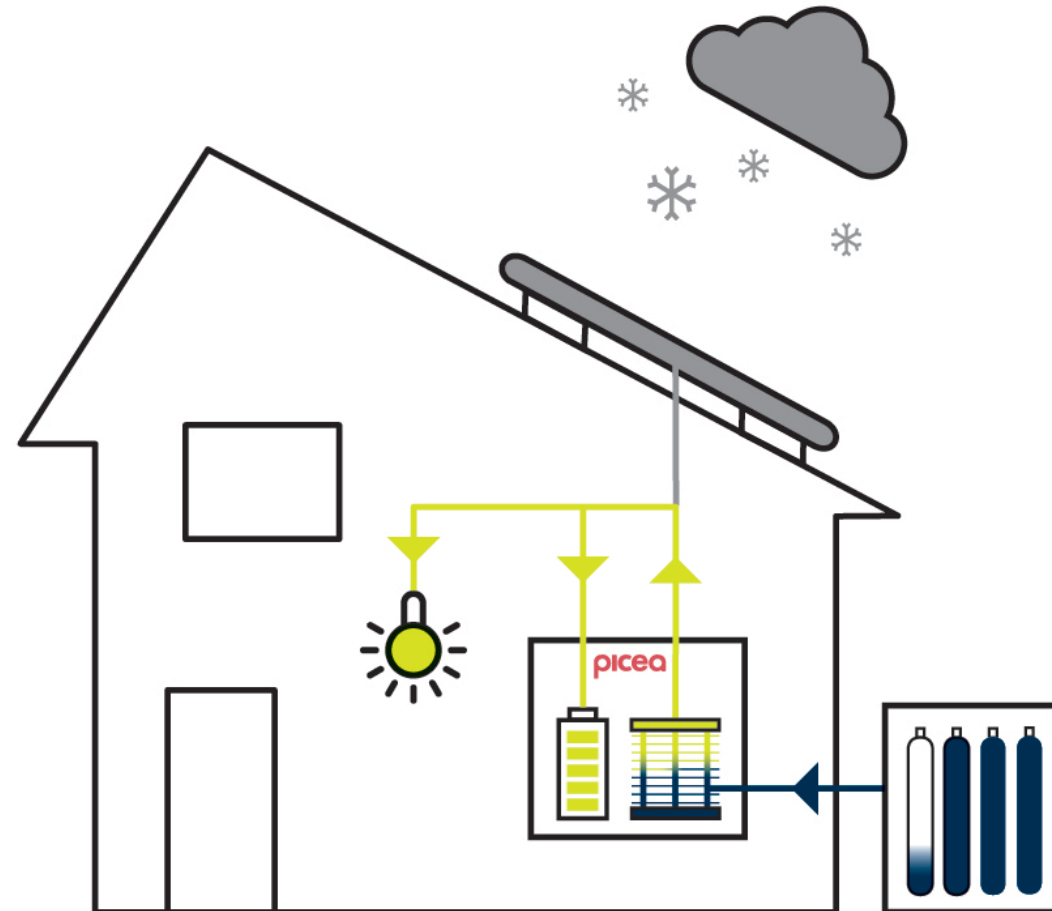


FUNCTIONALITY OF PICEA

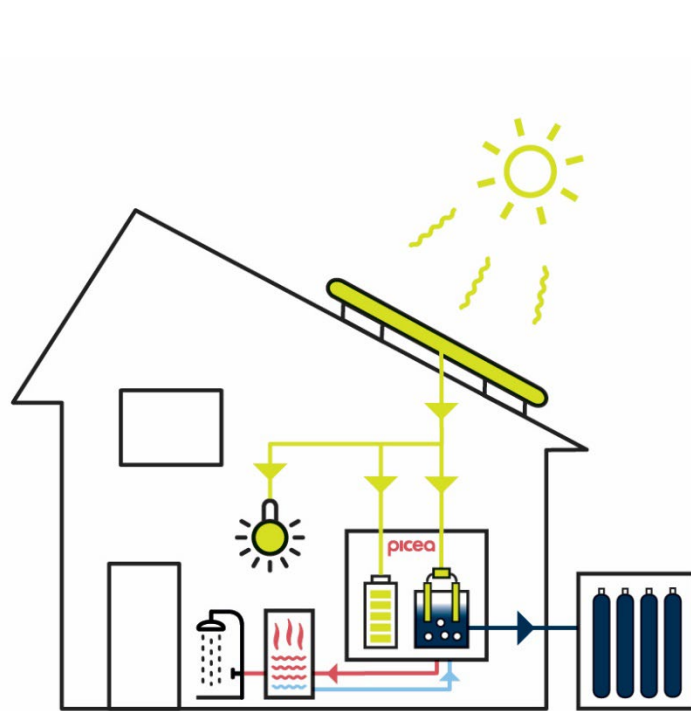
How picea works in winter

picea covers part of the heat demand directly via process heat. The stored solar power can also power a heat pump in winter, for example.

- Hydrogen is converted into electricity and heat in the fuel cell
- The energy management decides whether to directly cover base loads or fill the battery
- The battery flexibly covers the fast changing short-term demand

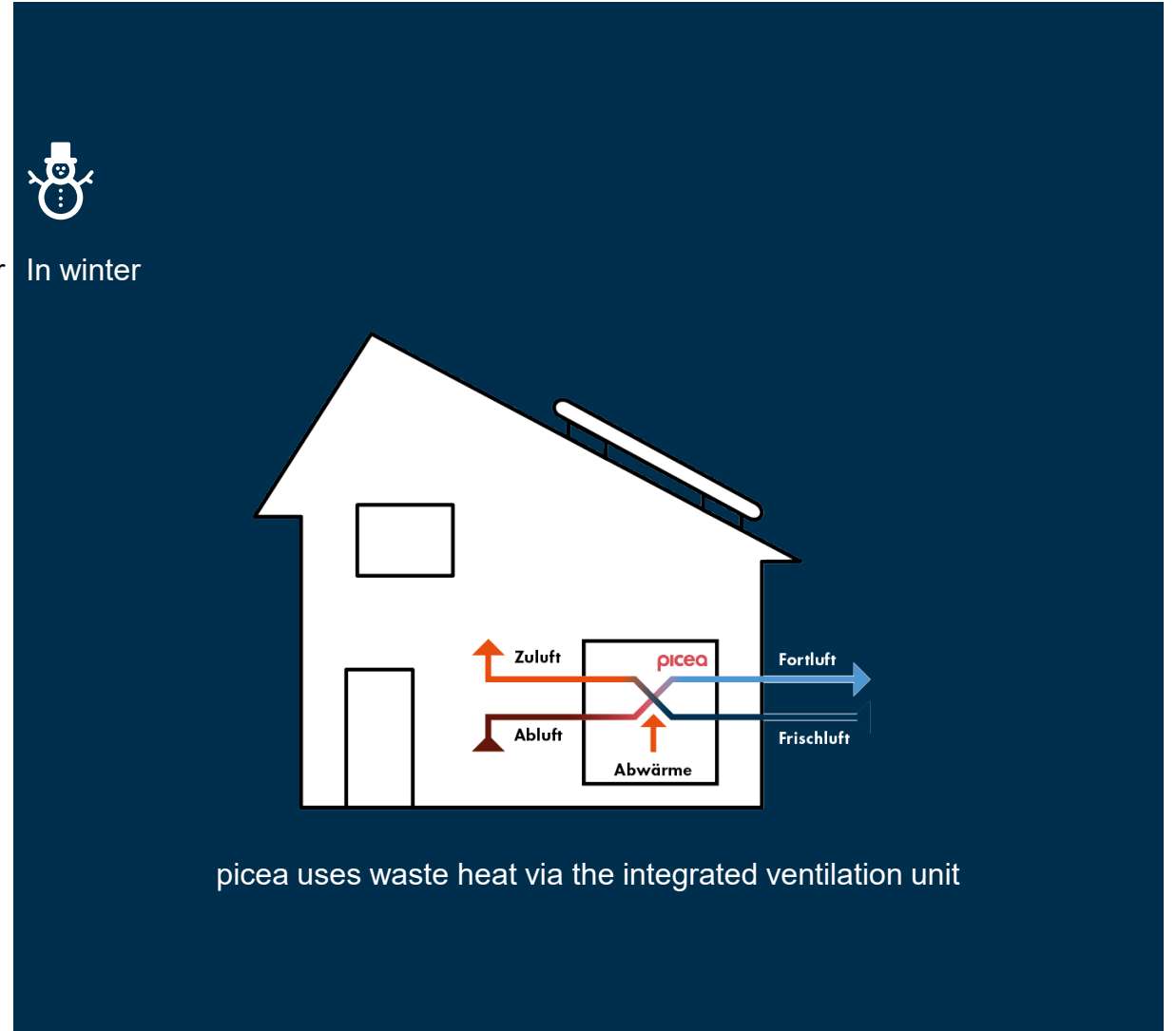


picea makes waste heat usable



In summer In winter

picea uses waste heat for domestic hot water preheating



picea uses waste heat via the integrated ventilation unit

Maximum performance – picea 2: the latest product generation



Seasonal energy storage

Electrolyzer, hydrogen storage, fuel cell

Short-term energy storage

Battery storage, battery management

Efficient waste heat utilization

Heat extraction by air and water

Simple PV connection

Hybrid inverter

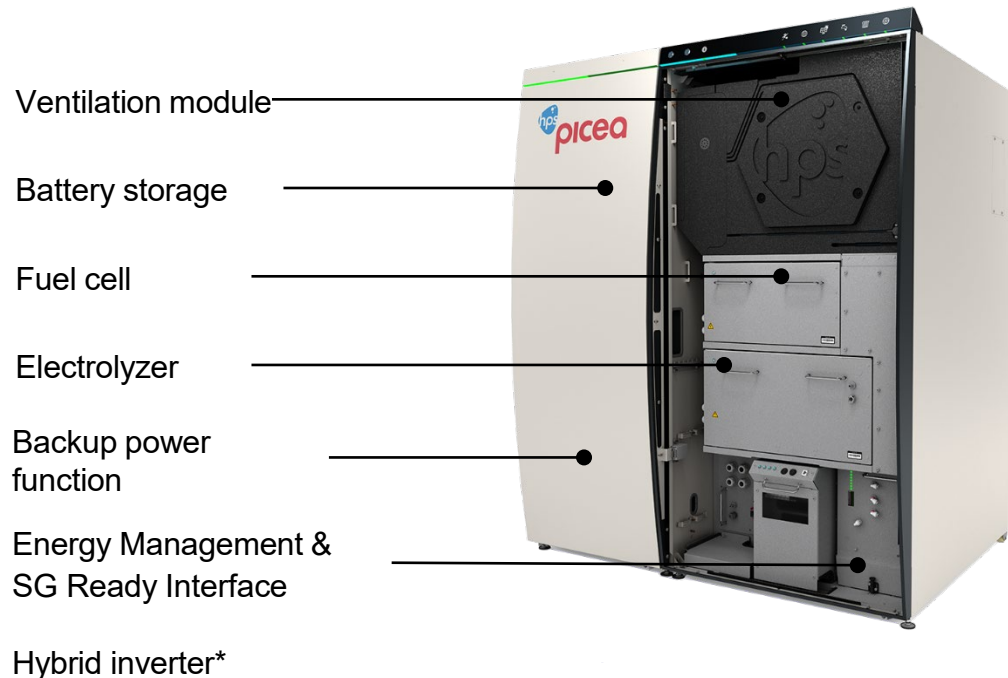
Intelligent control system

App, energy management, monitoring

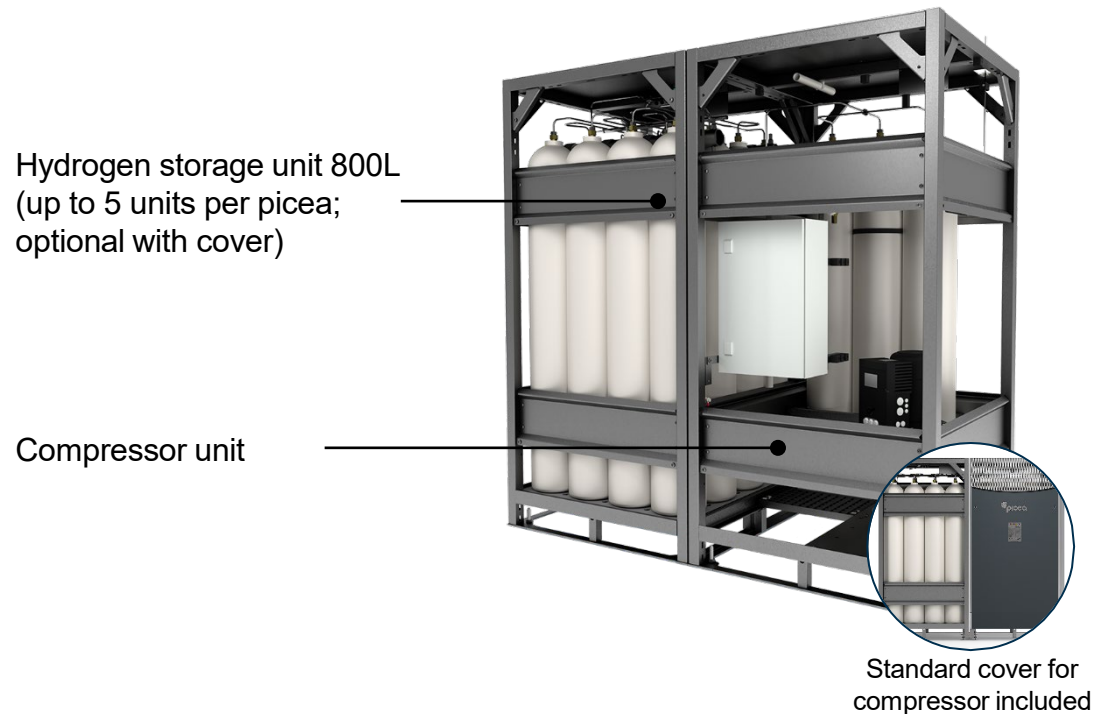
One supplier
One guarantee
One service

Two main components provide a lot of power in a small footprint

Energy center



Hydrogen storage



Dimensions of the energy center

Height	1,74 m, required room height 1,90 m	Depth	1,11 m
Width	1,46 m	Weight	approx. 0,7 t

Dimensions of the hydrogen storage unit 800L

H x W x D	2,00 x 1,00 x 1,00 m
Weight	approx. 1,8 t

Dimensions of the compressor unit

H x W x D	2,00 x 1,00 x 1,00 m
Weight	approx. 0,6 t

*Hybrid inverter is supplied and installed outside the energy center



Standard cover

The cover is subject to change.

OUTDOOR SYSTEM

The hydrogen storage is installed outdoors and can be covered

Cover option anthracite



Cover option white





MODULAR STRUCTURE

Fast installation and maintenance



Standard interfaces to the usual building services

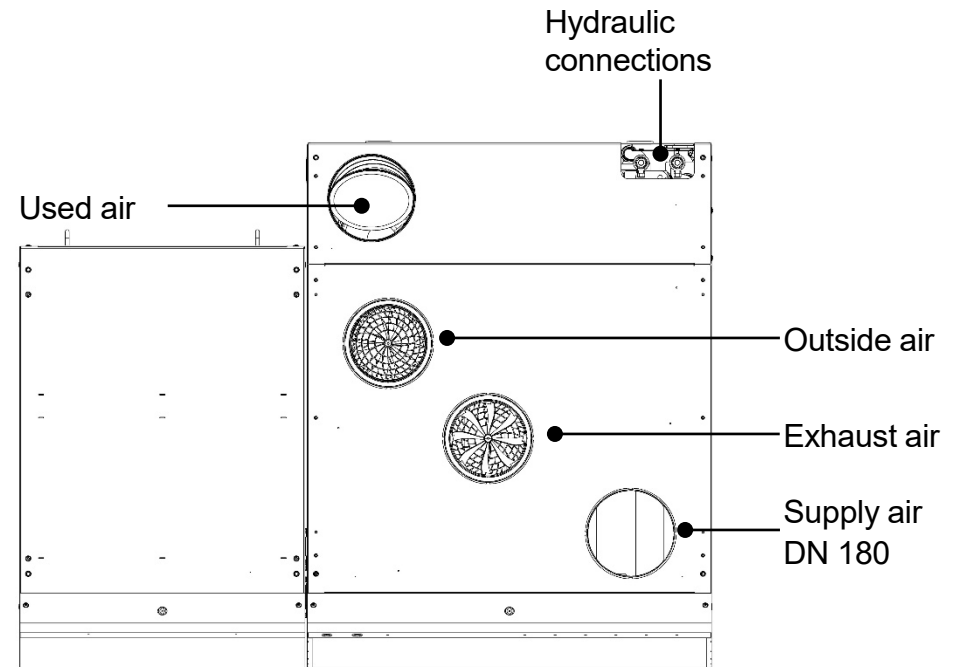


Flexible installation in existing and new buildings



Fast and simple replacement of individual components

Standardized connections on the top simplify installation



All connections on the top side
–no access from the sides necessary

Standardized pipes and lines to the building services



PICEA-APP

With the picea app, all energy flows are 100% transparent for customers



Historical Charts

Analyse and compare data of your picea for profound insights into your consumption behaviour and yields.



Live view

Monitor your picea's current operation in real time.



Operate picea

Modify picea's energy management system according to your personal needs.

AWARDS

picea has already received several awards

Our year-round electricity storage system picea has already received several awards. We are very proud of the awards our product has already won.



The smarter E Award



DGNB Sustainability Challenge 2022 INNOVATION GEWINNER

DGNB Sustainability Challenge



Innovationspreis Berlin Brandenburg



Handelsblatt ENERGY AWARDS

Handelsblatt Energy Award



HUNDREDS OF DREAMS FULFILLED

Numerous satisfied customers



Shown in the photos: picea of the first product generation.

HYDROGEN HOME NEAR BERLIN

Family Schade



In Panketal near Berlin, the Schade family has fulfilled their dream: Storing energy themselves with hydrogen. Tobias Schade's grandfather already discussed with him the possibility of using hydrogen as an energy carrier. Storing PV surpluses themselves and not feeding them into the grid - with picea, this dream has now come true.

Shown in the photos: picea of the first product generation.

HYDROGEN HOME IN HESSE

Family Karadeniz

When the Karadeniz family wanted to build their dream house, they opted for independence from the electricity supplier. Construction technician Mr. Karadeniz was one of the first pilot customers and is impressed: "picea differs from other energy systems because of its enormous storage capacity. It feels good to be independent and environmentally friendly at the same time."

Shown in the photos: picea of the first product generation.

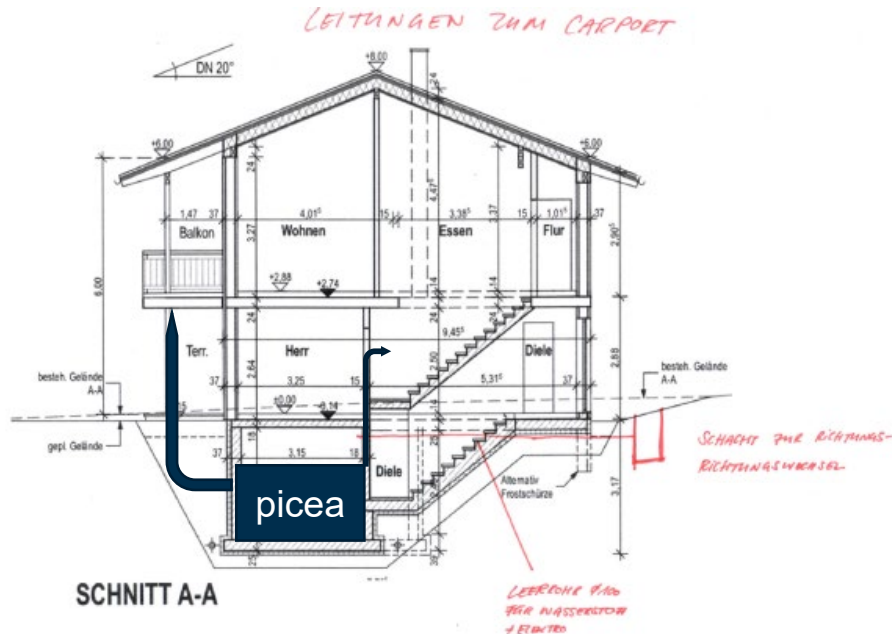


to the YouTube video



HYDROGEN HOME IN SOUTHERN BAVARIA

Family Horn

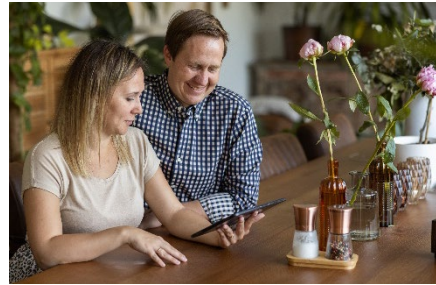
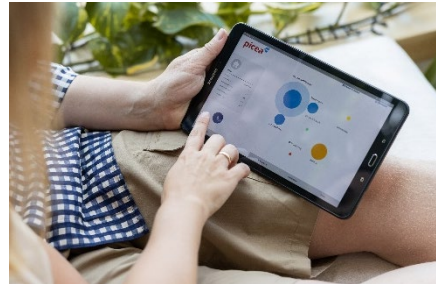


to the YouTube video

The hydrogen home of the Horn family in southern Bavaria proves the efficiency of picea. In the snowy region, it often happens in winter that photovoltaic systems disappear under snow for a longer period of time and cannot produce electricity. The capacity of a picea storage system is large enough to cover the power demand for several weeks. The ventilation module is integrated here as simplified residential ventilation.

HYDROGEN HOME NEAR MUNICH

Family Funck



to the YouTube video

Since the summer of 2020, there has also been a hydrogen home with picea near Munich.

The Funck family was keen to implement a green power supply in their new building. That's why they opted for picea.

Shown in the photos: picea of the first product generation.

HYDROGEN HOME IN CHIEMGAU

Family Liebchen



In the Chiemgau vacation region, the Liebchen family offers its vacation guests a CO2-free supply of solar power even in winter. picea is the heart of a vacation accommodation here.

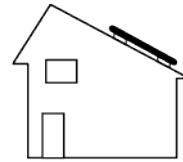
Shown in the photos: picea of the first product generation.

Year-round electricity storage for commercial properties and apartment buildings

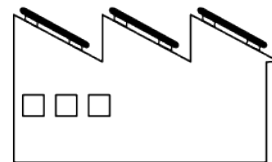
Cascade approach for more power & storage capacity



Your energy demand



One- and two-family houses



Commercial properties, multi-family buildings, larger energy requirements

Our solution



picea

- a picea energy center
- up to 1,500 kilowatt hours storage capacity



multi-picea 2

- 2-9 picea energy centers
- up to 13,500 kilowatt hours storage capacity

The higher-level control and energy management unit establishes communication between the individual picea, distributes energy evenly and records the building's energy flows.

MULTI-PICEA

References in commercial and in a property with several residential units

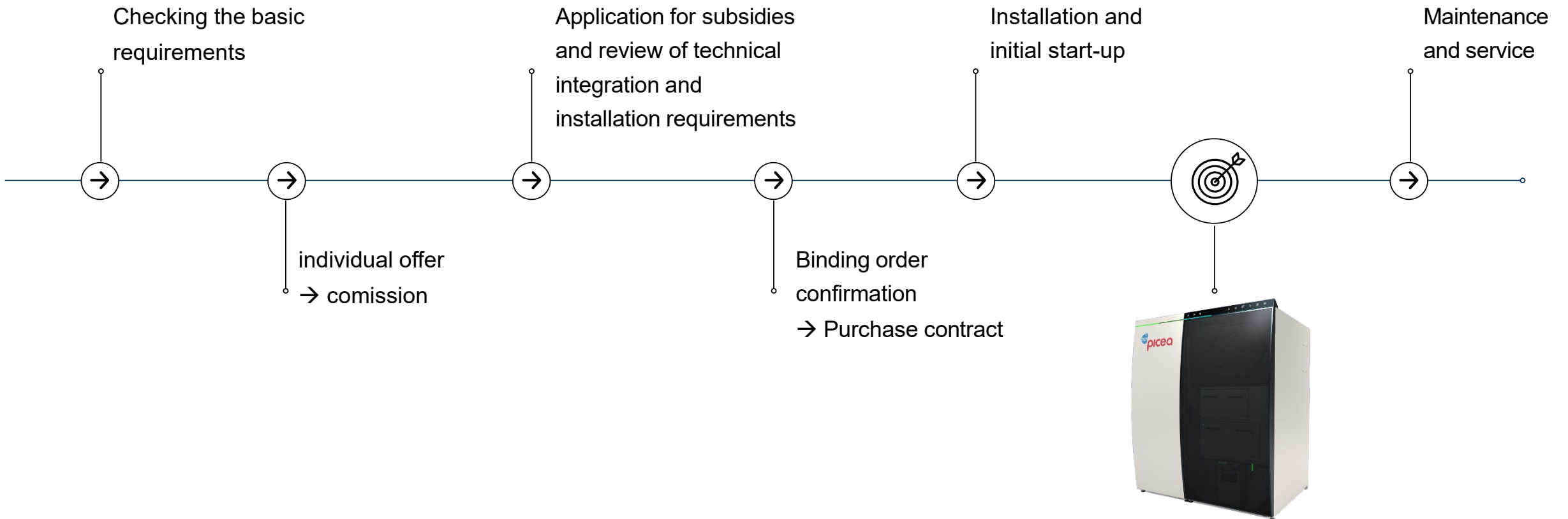


First commercial property with a multi-picea realized in Meckenheim (top left and top right).

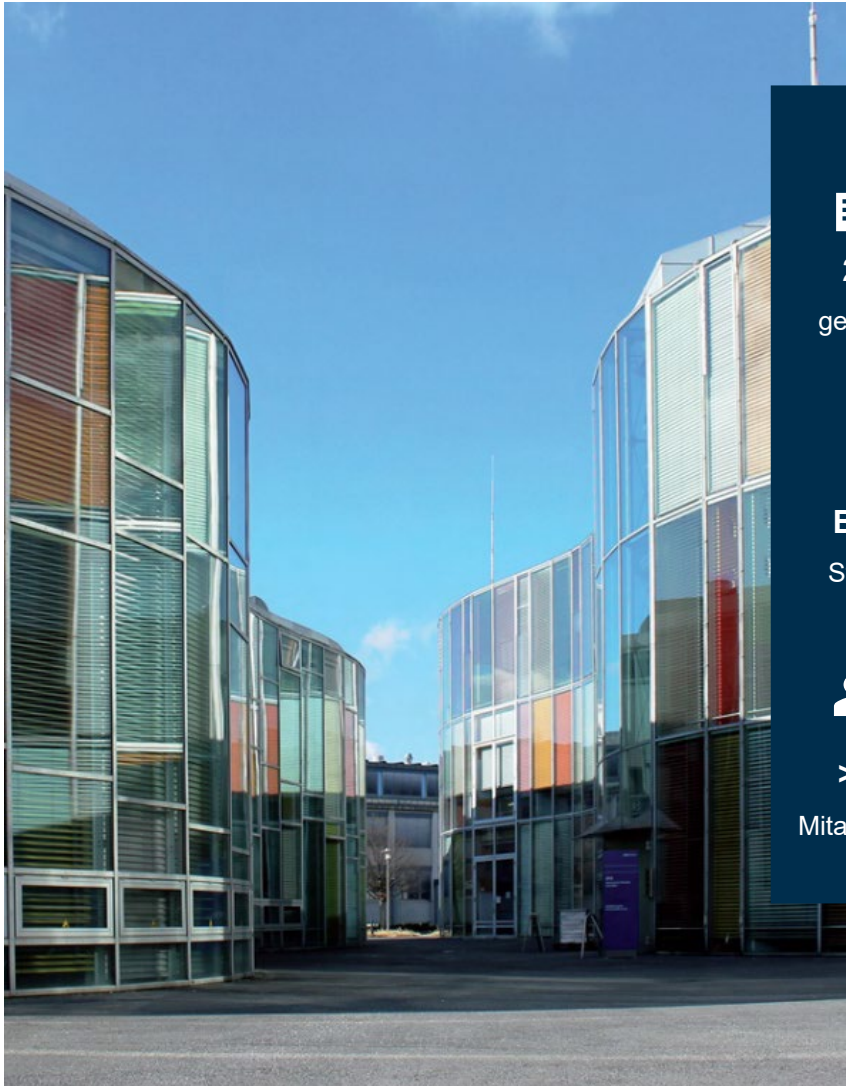
In Bavaria, the multi-picea storage system is installed for the first time in a property with several residential units (bottom left and bottom right).


Shown in the photos: picea of the first product generation.


Together we accompany you on your way to a CO2-free and secure independence




Das HPS-Team arbeitet mit Erfahrung, Leidenschaft und Engagement




2014
gegründet


Berlin
Standort


> 200
Mitarbeitende



Matthias Holder, CEO/COO

Dipl.-Industrial Engineer (FH)

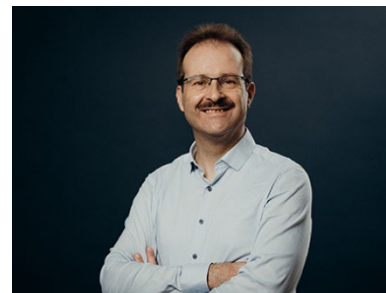
Many years of management experience in international industrial companies



Rainer Gehrung, CFO/CSO

Dipl.-Engineer

Several years of management experience in financial management, sales and strategy development of companies



Stefan Kaufmann, CTO

**Engineer, Material Science /
BSC Business Administration**

Several years of management experience in the development area of companies



THANK YOU VERY MUCH!

picea - multiple awards



DGNB
SUSTAINABILITY
CHALLENGE
2022
INNOVATION
SERVICE



We look forward to hearing
from you.

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