Picea
100% energy solution for self-supply

The HPS system Picea combines energy storage, heating support and indoor ventilation in one compact product, controlled by an integrated energy manager. It meets all the electrical energy needs of a single family home.

Picea combines the following energy supply components in one compact product:

Fuel cell
supplies electricity from the hydrogen storage during the winter

Electrolyzer
transforms the solar energy collected during the summer into hydrogen

Batteries
allow the power from the midday sun to be used in the evening

Solar charge controller
stores solar energy

Stand-alone inverter
provides the domestic electrical grid

Hydrogen storage
makes it possible to use solar energy in the winter

Hot water storage tank
utilizes waste heat in the house's heating supply system

Ventilation device
supplies the home with fresh air

Enthalpy heat exchanger
keeps the house warm through heat recovery

Energy management
ensures an efficient interaction between all the components in a single solution

Energy center and battery storage system as all-in-one unit

Benefits for the customer

- Meet the complete electrical energy needs of a single-family home with the consumer's own Photovoltaic system
- Reduce heating costs by utilizing waste heat
- Maintenance-friendly technology
- Complete energy transparency with the HPS app

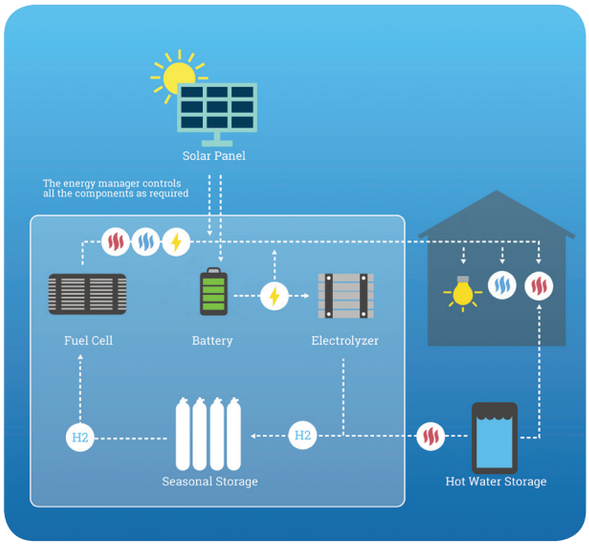
Benefits for specialist companies

- Suited to the space requirements and other prerequisites of standard private homes
- Standard interfaces to common HVAC technology ensure quick installation and service
- Commercial potential for sales, installation and service
- Outstanding market potential

hps
HOME POWER SOLUTIONS

Picea at a glance

Picea: 100% independent and clean energy



Peak electrical output (5s)	kW	20
High electrical output (3h)	kW	8
Continuous electrical output	kW	1.5
Electrical stand-alone grid	V/Hz	230 / 50
Comfortable indoor ventilation	m²	300
Indoor heat recovery	%	93
Seasonal storage capacity (usable)	kWh_{el+th}	600 – 3,000[1]
Daily storage capacity (usable)	kWh_{el}	25
Thermal storage tank capacity (usable)	kWh_{th}	20
Emission		H_2O
Energy source		Solar energy
Annual CO_2 reduction[2]	kg	2,350 – 3,500
Annual power supply to home	kWh/a	3,000 – 6,000
Indoor space required	m²	3
Outdoor space required	m²	3 – 5
Water connection		G ½"
Ventilation connection	DN	100 – 200
Photovoltaic connection	VDC	3 x 250
Communication		MobileAPP

[1] Can be scaled according to location and consumption

[2] Source: German Federal Environmental Agency; 4-person household consuming 4,000 kWh of power

About HPS Home Power Solutions GmbH (HPS)

HPS develops and produces systems for storing and using solar energy in single and multi-family homes. HPS stands for safety, independence and sustainability in decentralized energy supply. The first system from HPS, Picea, combines energy storage, heating support and indoor ventilation in one compact system. Thanks to its high-performance energy management system, Picea is designed to meet the complete electrical energy needs of a family home. In addition, all waste heat produced is used to provide the house with heat and hot water, thus lowering the cost of heating. Compared to commercially available battery solutions, Picea has a hundred times more storage capacity with twice the output. Picea is energy efficient and provides energy in all seasons. This allows Picea to provide complete energy self-supply and independence from the grid. The energy produced by the photovoltaic installation on sunny days can either be used straightaway, or converted into hydrogen and stored. This energy is then made available at night or during the winter when there is little or no sunshine. The HPS system's fuel cell converts the energy stored as hydrogen back into electrical energy and heat as needed. HPS is based in Berlin. For more information, please visit: www.homepowersolutions.de/en

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