



SOLENCO Powerbox™

The missing link for mass uptake
of residential solar PV



Concept

The Solenco Powerbox™ functions as part of an integrated solution, in a chain of renewable energies: production, storage and consumption in the residential environment.

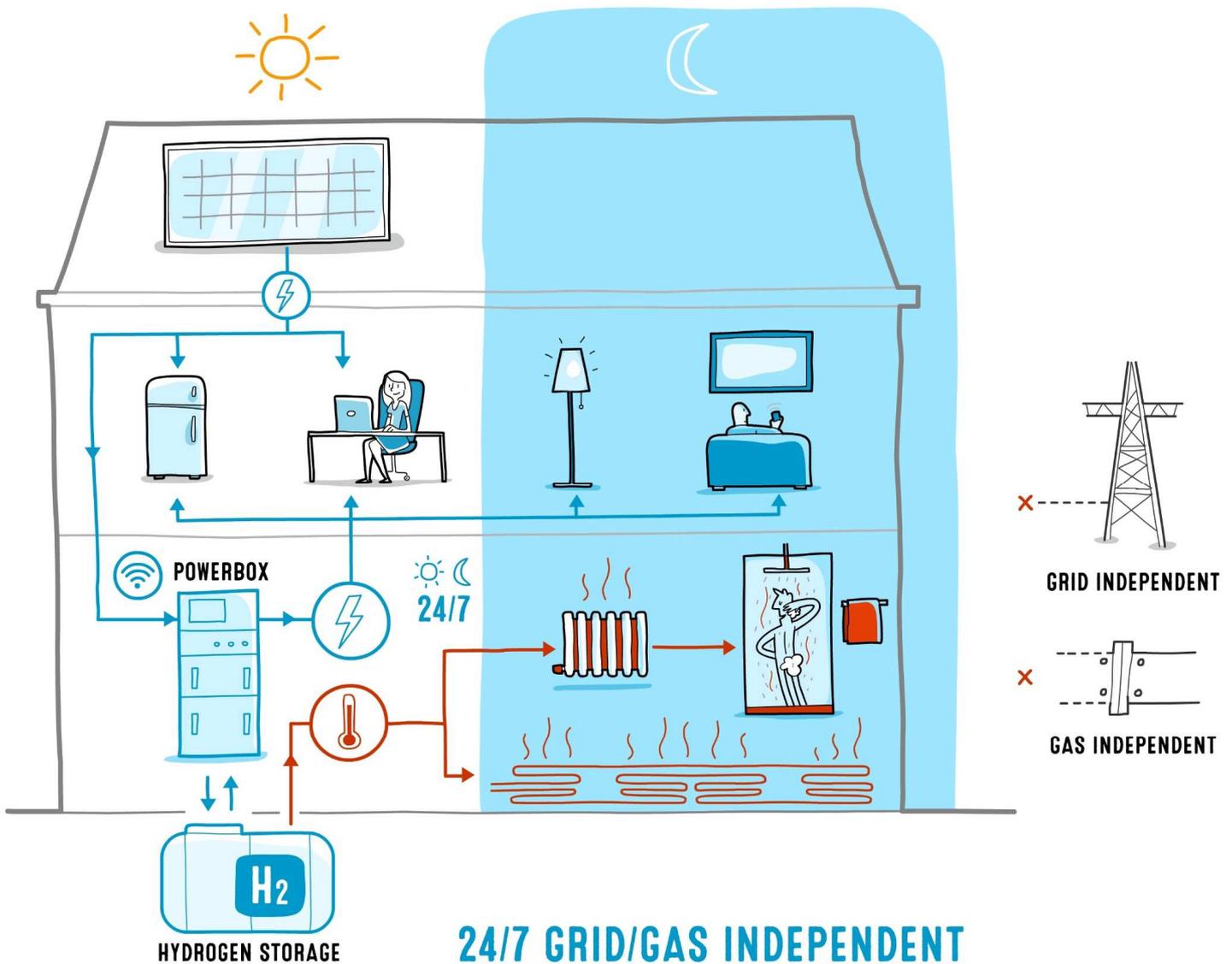
Solar panels function as the sole source of energy. Electricity needs are covered by the solar panels during day time and only the surplus is sent to the SPB™ to be stored as hydrogen gas.

When there's no sunshine, electricity and heat are produced by the SPB™ from the stored hydrogen, together at 95% efficiency.

In case the requested heat, is higher than the production, extra heat will be produced through a catalytic burner. The latter is a high efficiency (97%) burner with no flame, using hydrogen as energy source.

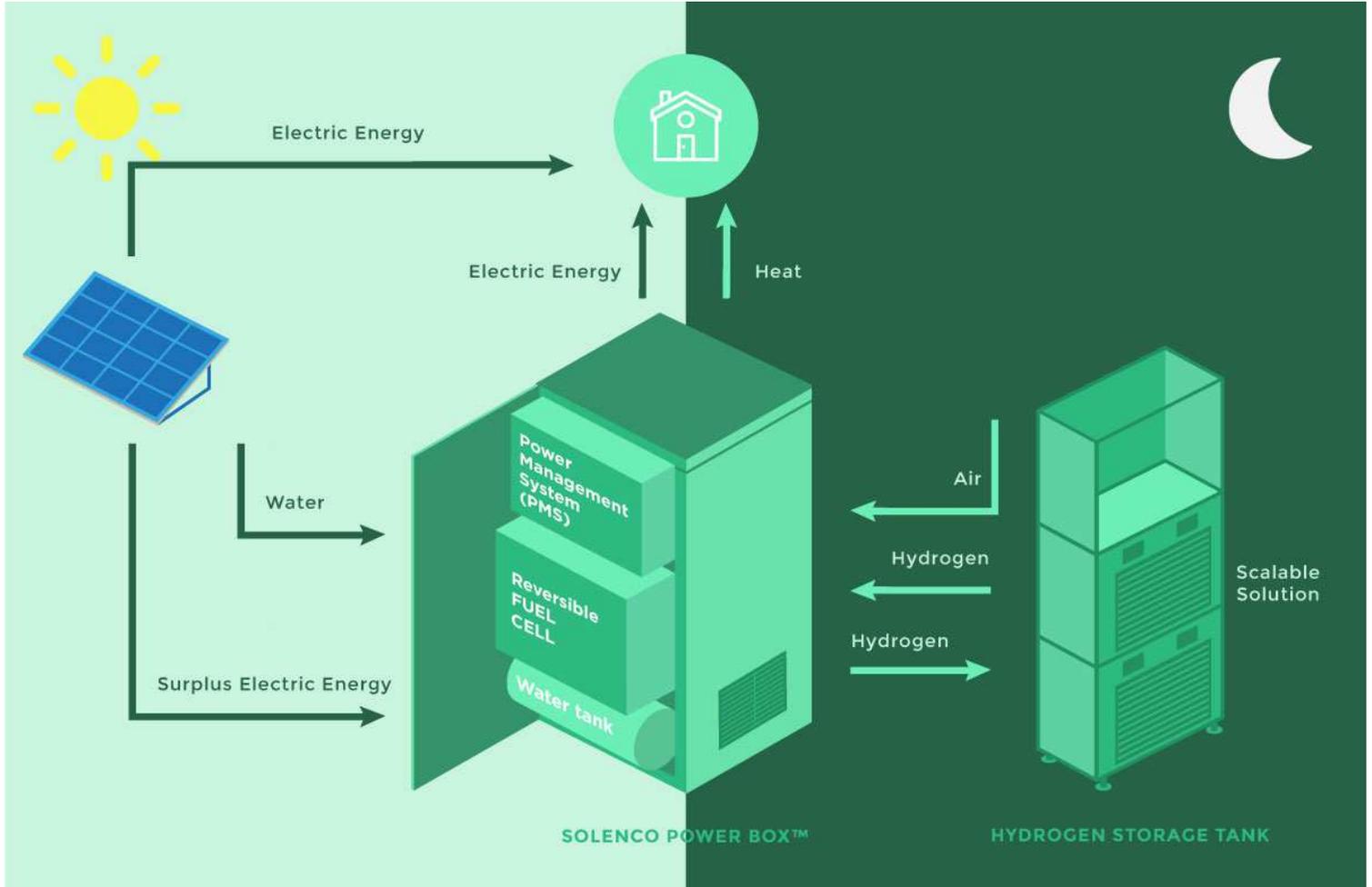
This decentralized production allows to store energy when available and use when needed, that can be shared between houses as well or even be used as zero emission fuel in hydrogen powered cars.

The value of the Solar PV is increased as there are no longer restrictions on when energy can be generated and no energy goes to waste.



SOLENCO Powerbox™

An Energy Storage Device, based on hydrogen technology.
It is charged by electrical power from a renewable energy source and returns heat and electrical power



95% Efficiency

Cogeneration of electricity and heat. In case of higher heat demand, H₂ goes through the catalytic burner reaching 97% of efficiency



Zero Carbon Emission

An eco-friendly energy solution, without emissions during production and consumption



Solar Energy at any time

The excess of energy produced by renewables during the day can be stored without any degradation for hours/days/months

Better Life. Better Energy.

The Solenco Powerbox™ (SPB™) provides a one-stop solution for both heat and power needs. Unlike battery systems it can store energy for hours to months without degradation as it uses compressed hydrogen gas



Water H₂O

In addition to energy produced by renewables, water is the **ONLY** input to the system



Grid Independence

Decentralised power production for a low voltage infrastructure. Customers no longer have to face peak periods



Smart System

From Smart Devices, through Smart Cities to Smart Communities. The system is designed to be intelligent and monitors all energy flows in the house



Scalable Solution

The modular H₂ storage is adaptable to the consumer's needs

Our Technology

Electricity from
Renewable
Energy
Sources



The only raw
material:
WATER



Input

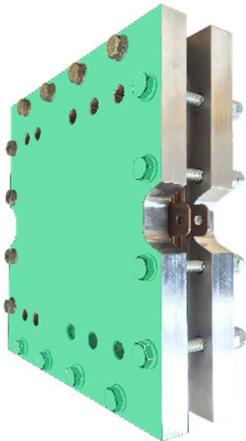


Only oxygen is
released to the
atmosphere

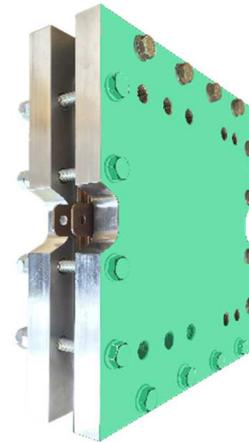


H₂ can be stored for
hours or months
without degradation

0% CO₂



The Reversible Fuel Cell
powered by an
Renewable Energy
Source splits the water
in Oxygen and
Hydrogen



The Reversible Fuel Cell
uses H₂ stored to
produce electricity and
heat with an efficiency
of 95%



Thermal Energy

Domestic Hot Water
+
Heating System

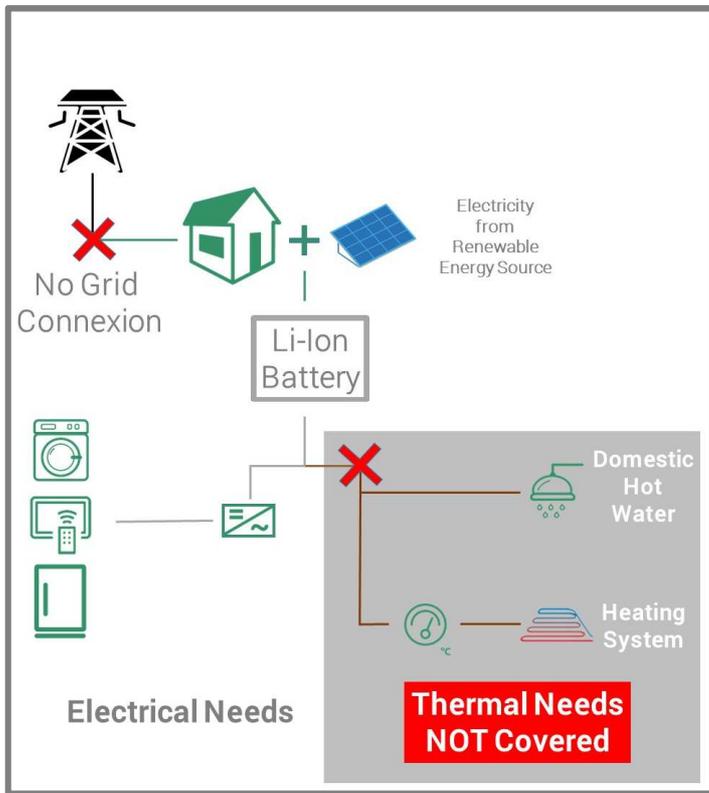


Electricity

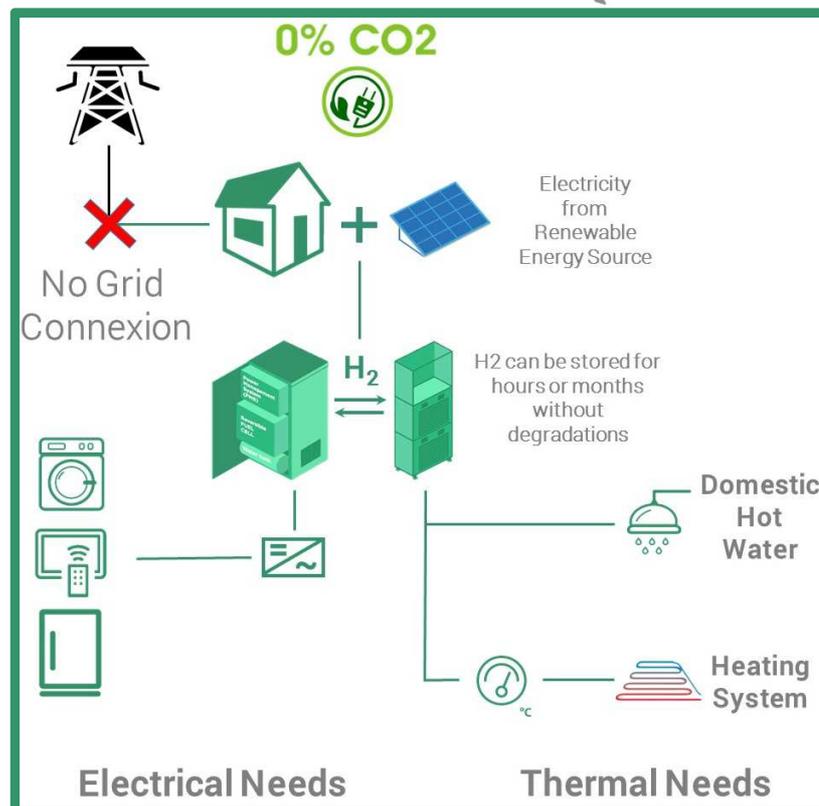
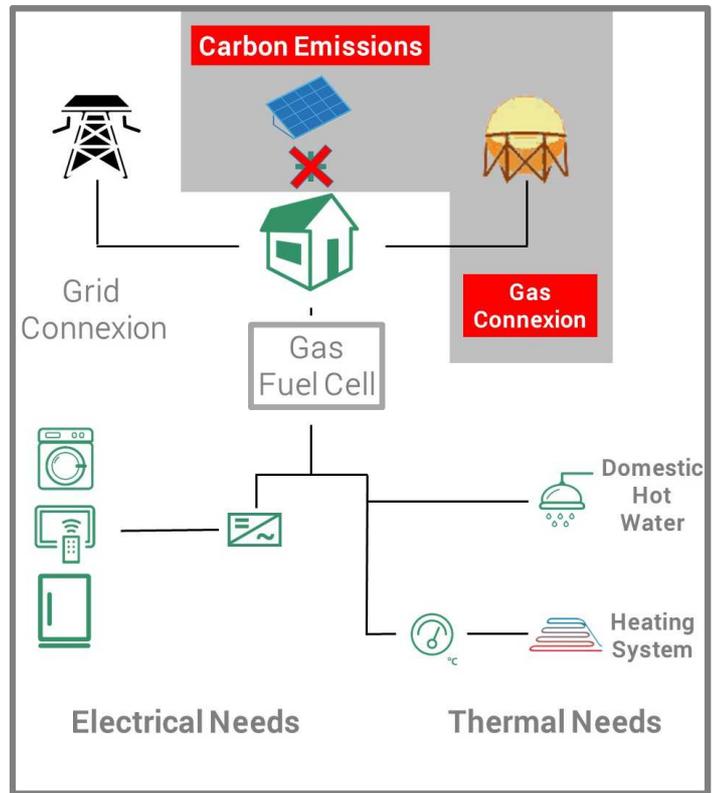
Output

Technologies Comparison

Lithium Ion Batteries

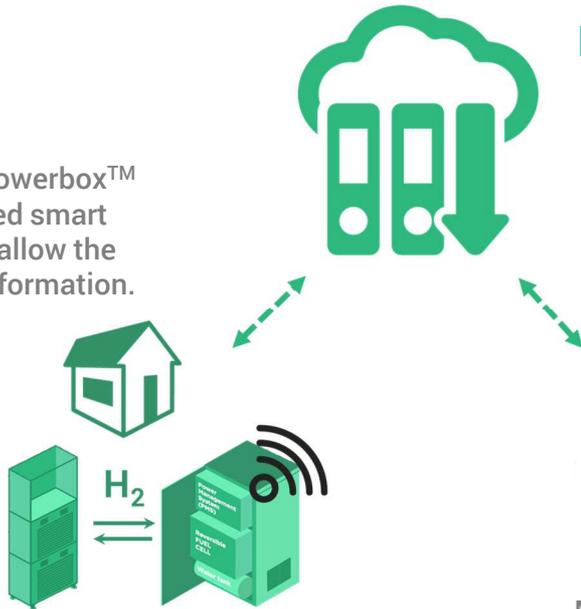


Gas mCHP

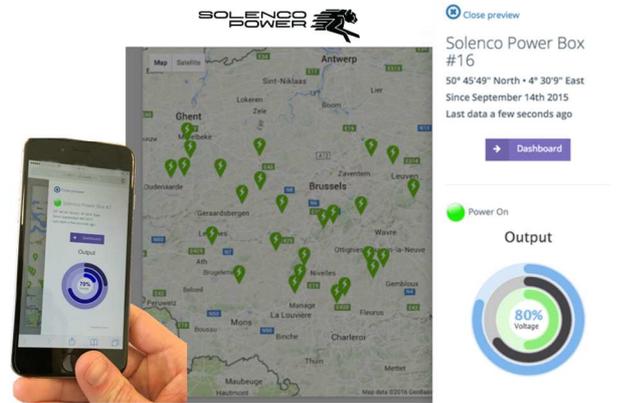


Smart System

The Solenco Powerbox™ has integrated smart sensors that allow the exchange of information.



IoT* Technology



Monitor and control your home's energy flow at any time, at any place, from your smart phone or computer.

(* IoT: Internet of Things)

Specifications

POWER



Dimensions:

Length: 600 mm

Width: 450 mm

Height: 1650 mm

(*) Dimensions:

Length: 700 mm

Width: 300 mm

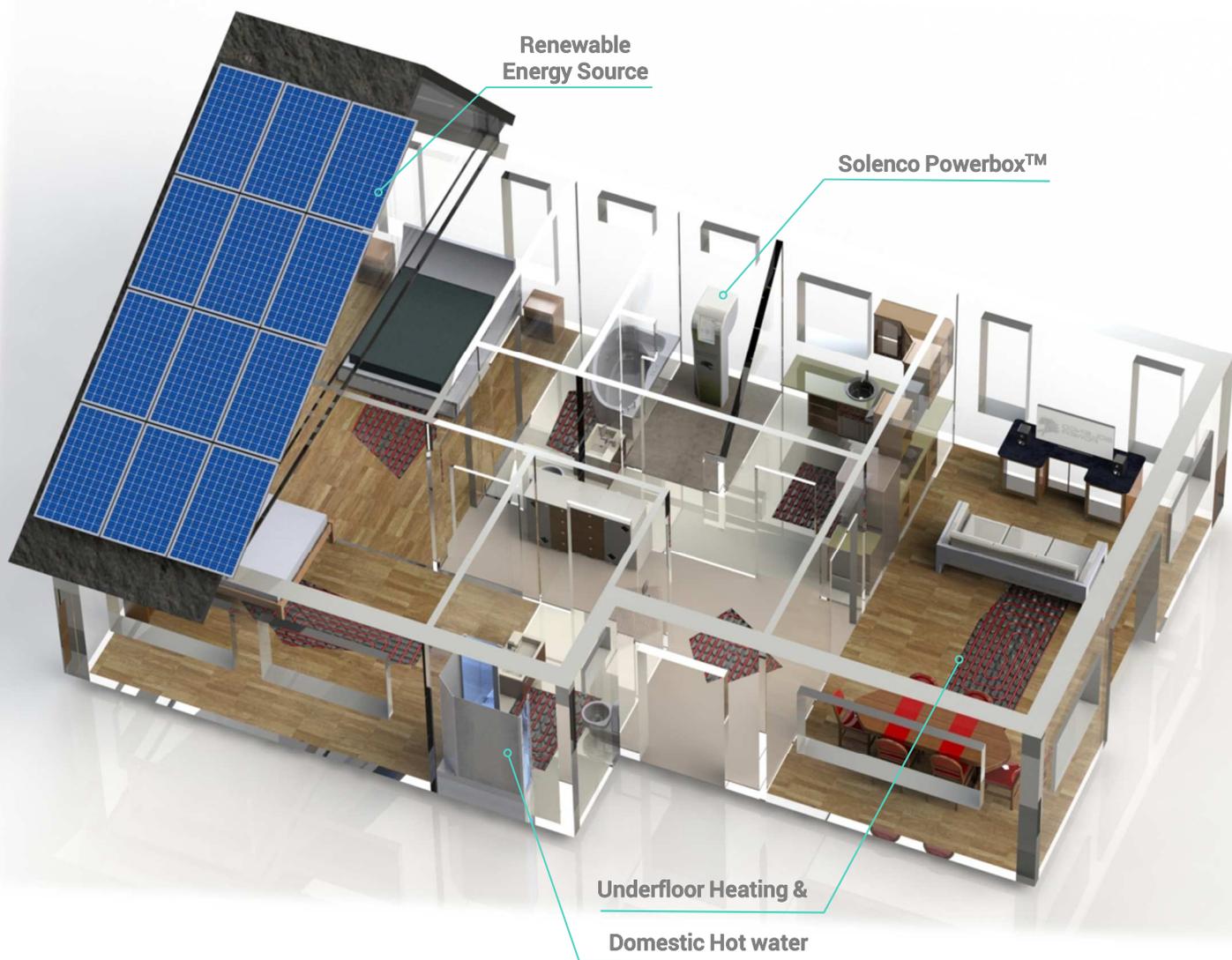
Height: 1600 mm

ENERGY



TRADE NAME	POWER	ENERGY
SPB - 1	1kW	5kWh
SPB - 3	3kW	5 - 30kWh (*)
SPB - 5	5kW	5 - 1.800kWh (**)
SPB - 10	10 kW	5 - 1.800 kWh

(**) Dimensions for Energy Storage: 2,5 m³



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