

CTS^{H2}

CLEAN TECHNOLOGY SYSTEM
HYBRID & HYDROGEN



**STORE AND USE ALL THE
CLEAN ENERGY PRODUCED
BY YOUR PLANT IN A
SUSTAINABLE WAY**

H2home an alternative solution to store
and produce electricity and heat
with **ZERO CO₂** emissions



**Green Hydrogen
Micro Cogeneration
& Energy Storage**

GIVE NEW ENERGY TO THE THINGS YOU LOVE WITH THE H2HOME SYSTEM



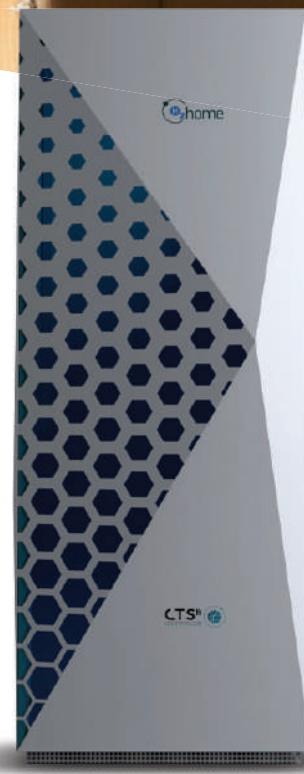
ENERGY INDEPENDENCE FOR YOUR HOME

After several years dedicated to the study, research and testing of components, CTS H2 has arrived at the realization of a system Plug & play, H2home is in fact able to store energy through green hydrogen.

H2home technology was born in micro cogeneration for offer you renewable energy storage for the market residential, commercial and SME.

The H2home system represents a turning point for the market of the accumulation of energy which guarantees a reduction of the energy bill and therefore a real positive impact on life of people and above all contributes to decarbonisation towards a cleaner and greener society.

**The complete solution
for your self-sufficiency
100% energy**



ADVANTAGES AND PERFORMANCE OF THE SYSTEM

H2home technology instantly uses electricity from unused renewable sources by the user to produce hydrogen from simple demineralized water (rainwater), using an innovative patented electrolysis technology.

The stocked hydrogen is stored under high pressure in complied with tanks in maximum safety and subsequently reconverted into electricity when necessary, using a Fuel Cell. The latter component certifies its micro-cogeneration structure, indeed the H2home system also produces 45 ° hot water.

Why choose H2home



POSSIBILITY 100% SELF-CONSUMPTION OF THE ENERGY PRODUCED BY THE RENEWABLE SOURCES



MICRO COGENERATOR ABLE TO PRODUCE BOTH ELECTRICITY AND HOT WATER



THE ENERGY (KWH) STORED DEPENDS ON THE TANK AND NOT FROM THE POWER OF THE SYSTEM



FOR ITS OPERATION IT REQUIRES ONLY DEMINERALIZED WATER AND ENERGY FROM RENEWABLE SOURCES SO CO2 ZERO



POSSIBILITY OF STORAGE ENERGY UP TO 180 KWH (SEASONAL STORAGE)



POSSIBILITY OF USING 100% OF THE STORED ENERGY WITHOUT LOSS OVER TIME



POSSIBILITY OF USING THE SYSTEM AS AN UPS IN CASE OF BLACKOUT



POSSIBILITY TO LOAD AND UNLOAD THE TANK WITHOUT ANY CYCLES LIMIT



POSSIBILITY TO POWER THE OVERLOAD IN RESPECT TO THE DOMESTIC GRID SUPPLY



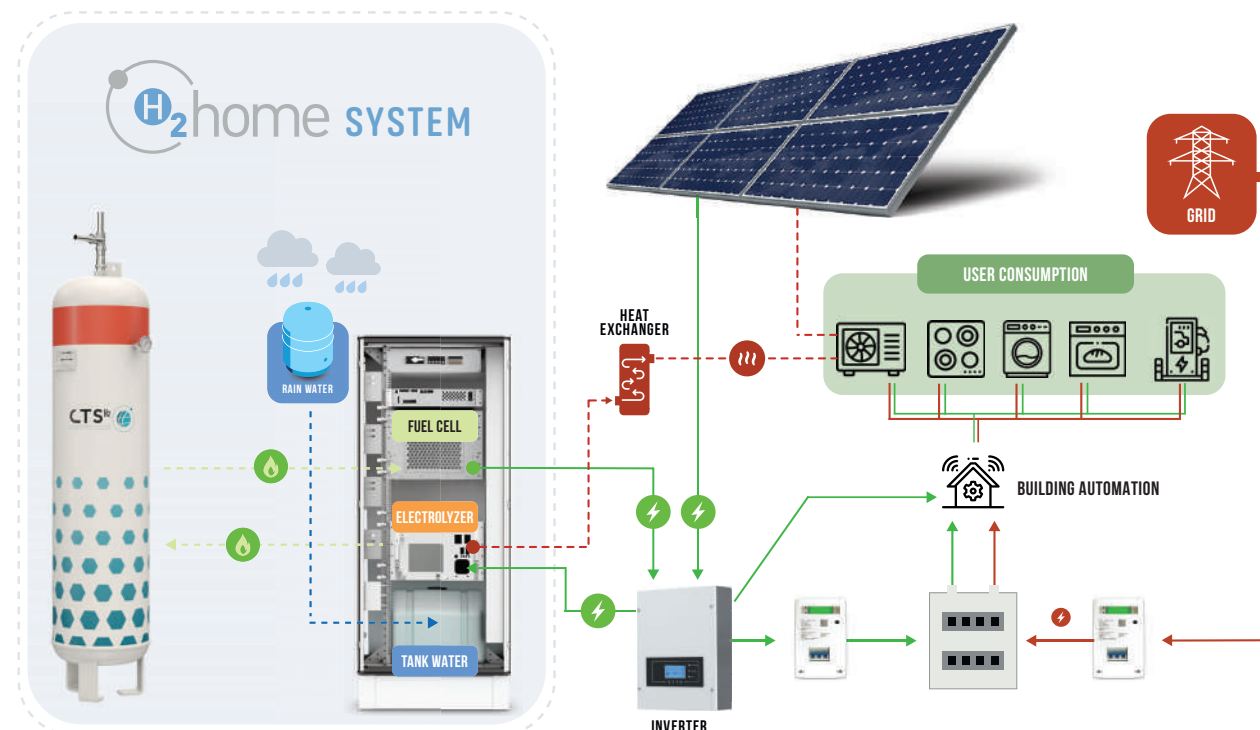
NO MECHANICAL COMPONENTS SUBJECT TO WEAR AND TEAR AND NO PRECIOUS METALS



POSSIBILITY OF USING THE SYSTEM IN OFF-GRID MODE



COMPACT AND PLUG&PLAY SYSTEM





100% GREEN ENERGY

The main strengths of the H2home system are: its ability to store more energy than a traditional battery (tanks); the possibility to keep it for a long time (even months); a components lifespan of over 10 years not being subject to wear and tear; possibility of loading and completely discharge 100% of the energy contained in the tank (unlimited cycles); less maintenance compared to traditional generators; greater resistance to atmospheric agents and temperature.

CODICE	POWER PV SUGEST (Kw/h)	MAX POWER CONSUMPTION (Kw/h)	MAX H2 PRODUCTION (Nl/h)	TANK VOLUME (L)	MAXIMUM ALLOWABLE PRESSURE (bar)	MAX STORABLE ENERGY (KWh)	WATER CONSUMPTION (L/h)	TIME TO FILL H2 TANK (h) (*)	MAX H2 CONSUMPTION Nl/h	MAX POWER RELEASE (KW/h) 220V ac	MAX HEATING POWER RELEASE (KW/h) THERMAL
CTSH2H-EL05KW2.SP	3	3	500	300	35	13,5	0,45	21,0	1950	2,5	5,0
CTSH2H-EL05KW5.OP	3	3	500	720	35	33,8	0,45	52,5	3900	5,0	5,0
CTSH2H-EL1KW5.OP	10	5,9	1000	720	35	33,8	0,90	26,3	3900	5,0	10,0
CTSH2H-EL05KW3M	6	3	500	300	35	13,5	0,45	21,0	2340	3,0	5,0
CTSH2H-EL05KW6M	6	3	500	720	35	33,8	0,45	52,5	4680	6,0	5,0
CTSH2H-EL1KW3M	10	5,9	1000	720	35	33,8	0,90	26,3	2340	3,0	10,0
CTSH2H-EL1KW6M	10	5,9	1000	720	35	33,8	0,90	26,3	4680	5,9	10,0

(*) IF TANK IS EMPTY



Building Automation Energy & App application

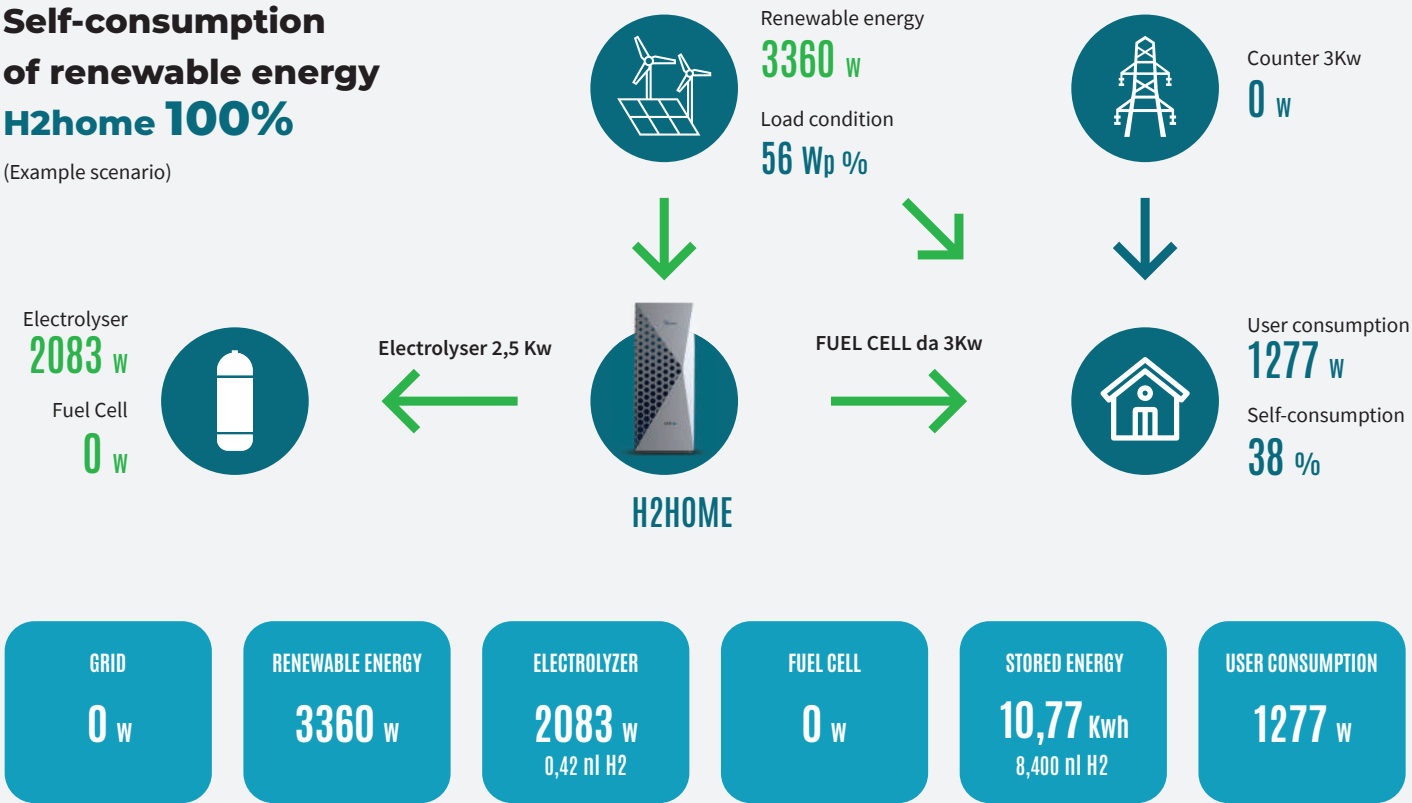
During the production of electricity from renewable sources the electronic home automation system, fully automated and with predictive functionalities, analyzes the consumption of active users; if the consumption is greater than production then the surplus of energy required is supplied by fuel cells if hydrogen is available, otherwise from the grid if the tank is empty.

When consumption is lower than the energy produced, the surplus it is used for the production of hydrogen that is stored in the reservoir. The system can be interfaced to a heat pump or sanitary water storage by optimizing the production of hot water and facilitating a thermal flywheel favoring electric or thermal storage depending on the weather and outside temperatures, thus increasing the COP performance of the system.

In the event of a blackout, the system starts automatically producing the electricity needed to power the main utilities such as lighting, alarm, refrigerators and PC.

Self-consumption of renewable energy H2home 100%

(Example scenario)



CASE HISTORY

“Casa Cala Corsara” Museum Off Grid

Located: Spargi Island in the La Maddalena Archipelago Italy



Technical characteristics of the system

Electrolyser	0,5 kW
Fuel Cell	500 W
Storage H2	11,25 kWh
Pressure H2	30 bar
PV	7 kWp
Eolico	3 kWp

Elettrolizzatore che funge per la rete da Grid Balancing

Located: Bangladesh



Technical characteristics of the system

Electrolyser	2 x 20 kW
Fuel Cell	5 kW
Storage at 200 bar	60 Nm³
Pressure at electrolyser	6 bar

REACT project

Located: Aran Island in Ireland



Technical characteristics of the system

Electrolyser	5 kW
Fuel Cell	5 kW
Storage H2	35kWh
Pressure H2	35bar

H2Home Storage hydrogen for private house

Located: Conegliano - Italy



Technical characteristics of the system

Electrolyser	2,5 kW
Fuel Cell	3 W
Storage	14 kWh
Pressure	35 bar
Pv	6 kWp

Electric storage system wind-solar region of Nitra

Located: Komárno district, Kolárovo Slovakia



Technical characteristics of the system

Electrolyser	10 kW
Fuel Cell	10 kW
Storage	150 kWh
Pressure	30 bar
PV	50 kWp
Eolico	200 kWp

H2Home Storage hydrogen PMI

Located: Treviso - Italy



Technical characteristics of the system

Electrolyser	5 kW
Fuel Cell	3 kW
Storage	14 kWh
Pressure	35 bar
Pv	20 kWp



Find out how to generate WEALTH through ZERO emissions



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