

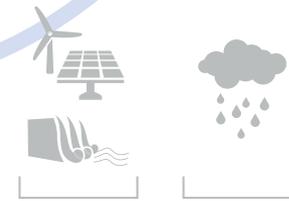


company profile

clean energy



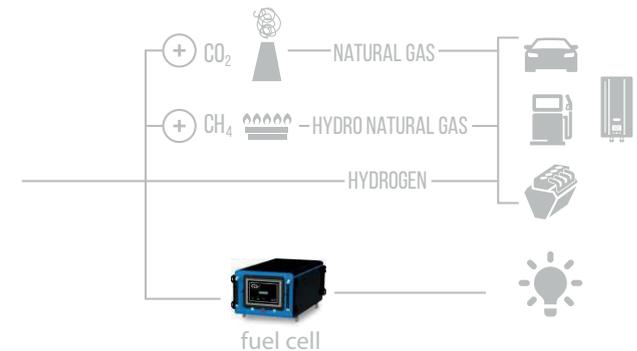
# CTS H2 YOUR PROBLEM OUR SOLUTION.



ELECTROLYSIS



STORAGE



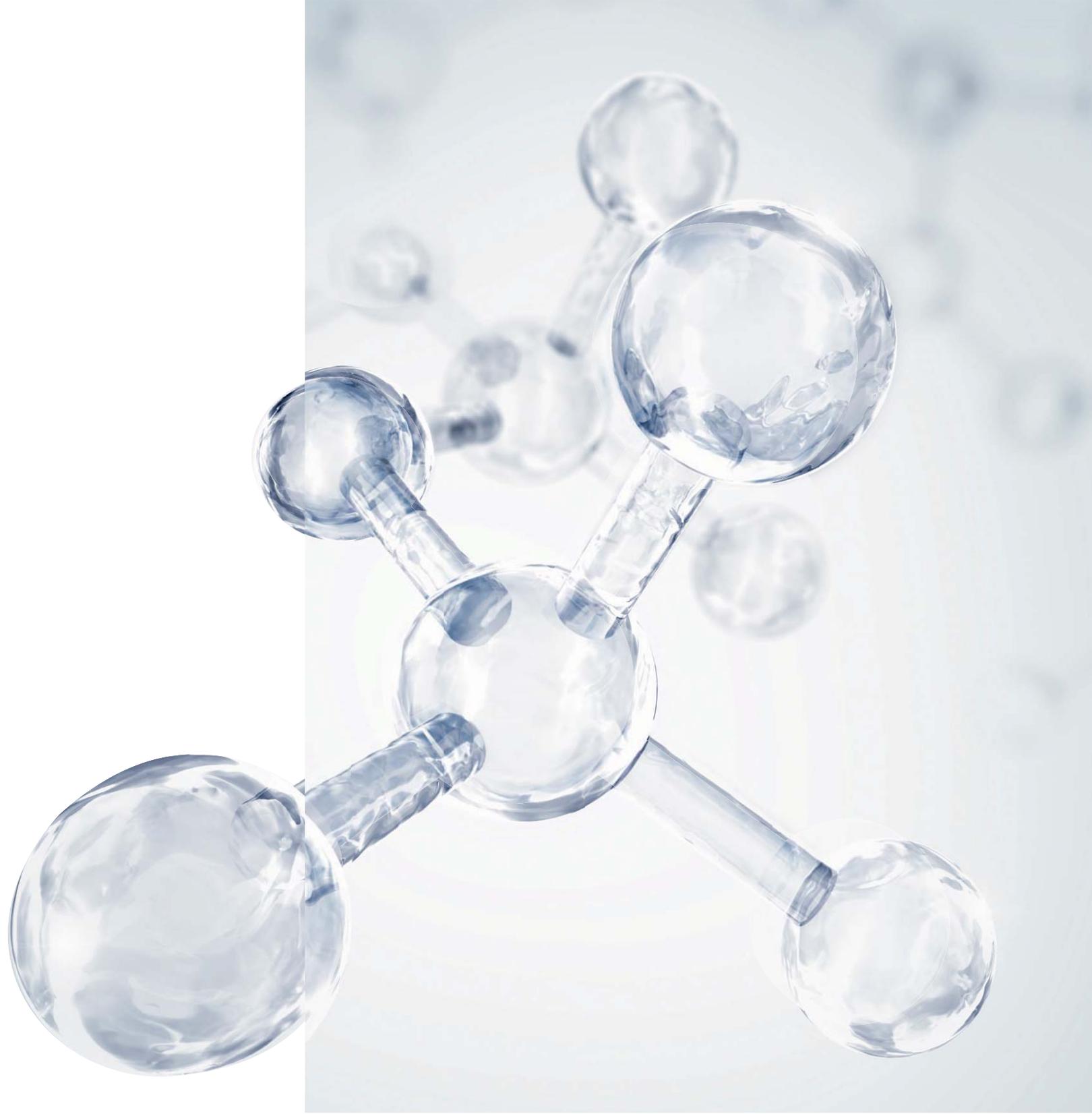
**Hydrogen** is one of the energetic carrier of the future. Through its installations and structures, **CTS H2** has managed to make hydrogen useful at present, moulding a sustainable system by means of a constant and thorough research in the field of renewable technologies. The final aim, primary item on its agenda, is sustainable power autonomy. That is to say, the development of low power consumption and low environmental impact, through the storage of renewable power sources using **hydrogen** as energetic carrier.

**CTS** know how comes from its founders' thirty-year know-how experience in several industrial and power fields. Heterogeneous attitudes allowed to implement and develop modern technologies to produce innovative systems, keeping low costs and increasing product reliability.

The further step which allowed **CTS H2** to open up to new and promising international markets is the use of **hydrogen** as a green and sustainable source of energy, by means of better electrolysis processes and applied technologies. As a matter of fact, **hydrogen** transformation is made by our system only with simple rainwater. The main core is the high-pressure storage system. As a fact, the extra self- production of energy carried out by photovoltaic panels is employed to generate **hydrogen** which will be lately stored in suitable containers. In case of need, the latter can be turned back into power energy by using Fuel Cell.

This technology, compared to the traditional battery, gives more autonomy, lifespan, usage and flexibility, noticeably reduced environmental impact, better resistance to atmospheric conditions and temperatures. It necessitates less maintenance if compared to batteries or common diesel fuel or natural gas generators. It respects the environment avoiding the production of noises and polluting emissions.

A rather widespread and thriving use of Fuel Cell is expected in the telecommunications, data centres and hospitals, where it is required a constant and uninterrupted flow of power to which UPS **hydrogen** generator can be a solution.



The image features a dark blue car on the left side, with a circular graphic overlay in the center. The car is shown from a side profile, and the circular graphic is a light blue circle with a smaller, semi-transparent circle inside it. The background is a blurred image of a road and greenery, suggesting motion. The text 'CTS H2 HYDROGEN, ENERGY CARRIER' is written in white, bold, sans-serif font on the left side of the image.

# CTS H2 HYDROGEN, ENERGY CARRIER

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What **CTS H2** sees as its future is a scenario where **hydrogen** will make a better quality of life and will be able to free economy from the yoke of non-renewable sources and all those sources, very expensive or very polluting for the environment, whose destiny is to extinguish.

As a result, its objectives are a more sustainable mobility and a wider power independence which can be achieved only by working on technologies, know-how and necessary awareness to turn our cities into better worth-living places, functional, modern and environmentally suitable.

In the Smart Cities of the future, it is desirable that **hydrogen** could be used as a possible source of energy for traction. The use of **hydrogen** as an energy vessel in electric transport means gives out only water as a waste product, completely cutting out carbon dioxide emissions and related environmental/weather problems.

Thanks to an interface electronic checking for each device, **CTS H2** technology maximizes any electric application with the advantage of a better use of the renewable sources. The fuel cell work, guaranteed by the **hydrogen** stocked in ultra-light tanks, can be used as range extender to keep a constant charge of batteries present in any electric vehicle, giving them more lifespan, autonomy in hour of distance covered, drastically reducing the recharging time of batteries, their substitution and assuring a better respect of the environment.

# CTS H2 OUR PRODUCTS

## ELECTROLYZER

### CHARACTERISTICS

- Pressure up to 30 bar
- 99.94% Hydrogen purity (at 30 bar)
- Integrated water tank
- Touchscreen display
- Automatic pressure release
- Levels alarm Set
- Remote control ability

**CTS electrolyser** is the portal to **hydrogen** economy. Electrolysers are made of devices which assure a low maintenance-cost. They also have an interface touchscreen display to let the user make an intuitive direct check of the device. Through electrolysis process, water molecules are split into oxygen and **hydrogen** by the passage of power in the water. If the energy we use comes from a renewable source, we get **hydrogen** at no cost. Thanks to **CTS H2** technologies, **hydrogen** can be obtained directly from rainwater and can be stored in high-pressured tanks, with a consequent economy of energy, expenses and volumes





## FUEL CELL SYSTEM

### CHARACTERISTICS

- Durability up to 40,000 hours
- No noises neither vibrations
- Clean and environmental friendly
- Few maintenance service
- Different sizes

Everywhere there is a demand for energy. From this starting point, **CTS H2** has developed a personalized system capable of converting **hydrogen** into power energy and water steam. Fuel Cell technology offers more autonomy and a better resistance to atmospheric conditions and different climates.

This product gives out heat which can be stored and used at user's will during winter months when the **hydrogen** stored is turned into electric power by means of Fuel Cell.

## UPS UPS HYDROGEN GENERATOR

### CHARACTERISTICS

- No CO<sup>2</sup> emission
- Remote control management
- Perfect at mastering electric emergencies
- Different sizes
- Outdoor/indoor model
- EC conformity

**CTS H2** has considered some solutions to the safety of your electronic systems, by managing the several good effects of a Fuel Cell applied to a backup system generating electric power.

With UPS (Uninterruptible power supply), the traditional storage systems restrictions, as well as those of electrical generators, are now over thanks to a remote checking and a significant reduction in times and maintenance expenses.

UPS is employed in strategic fields such as telecommunications, data centres and hospitals, to assure a constant electric flow to equipment during a blackout.

The system offers undeniable advantages, starting from a modular structure which allows a double position, indoor and outdoor, according to the client's necessities. Fuel Cell, core of the system, is perfectly suitable for this use being able to fit different positions, due to the absence of polluting emissions and a ten-year lifespan.





## BATTERY STORAGE SYSTEM

**CTS H2** conceived, designed and produced H<sub>2</sub>home for a completely 'green' house. Thanks to a technologically advanced software. H<sub>2</sub>home allows to reach a high energy efficiency by checking in a clever way electrolysis processes, storage and reconversion to electric power through Fuel Cell. H<sub>2</sub>home is the first system on the market which can give electric power independence simply by adjusting its size.

H<sub>2</sub>home, a patent pending product, assures a complete self-use of domestic renewable energy. It is made of a single unit that can easily be part of the domestic room, outfitted with all the necessary safety measures to make sure that all the power produced by its item can be re-used.

The power energy produced by your photovoltaic plant, but not used, will be converted into **hydrogen** and stored in cylinders. As an example, the electric consumption load, which is not supported by the photovoltaic system at night time, can be assured by re-converting **hydrogen** stored at daytime into electric power.



### CHARACTERISTICS

- Different electric power sizes
- Patent pending system
- Home automation control through web
- Indoor/outdoor item
- Energy autonomy
- Smart checking of energy produced by renewable source
- Top- level safety conform to EC
- Design
- Easy to install

### MAIN ADVANTAGES

- No pollution emission in the environment, only water steam
- 100% renewable source energy consumption
- Energy sustainability
- Possibility to disconnect from electricity grid
- Low maintenance
- High level of the system efficiency
- No worn-out components
- Compact
- Lasting recharge of tank
- Re-use of rainwater
- Re-use of environment air
- UPS mobility system in case of blackout

### MAIN APPLICATIONS

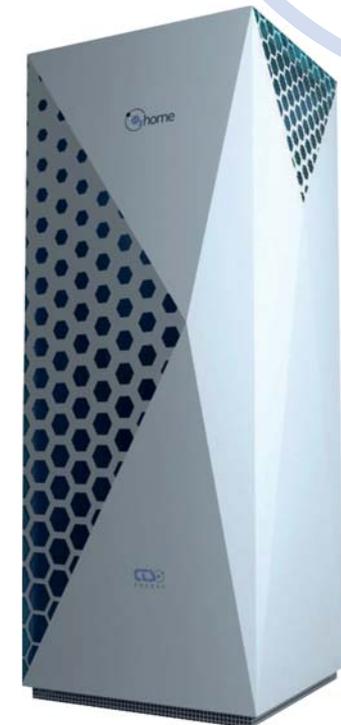
- Domestic
- Office

### ACCESSORIES

- Storage/cylinders

## CONCEPT

To maximize energy saving, H<sub>2</sub>home is conceived within a sustainable perspective: water to be converted into **hydrogen** is the rain one, the oxygen used by fuel cells comes from the environment air, the waste of all the process is only steam, it does not pollute. H<sub>2</sub>home also assures service in case of blackout or overload of the domestic system, supplying the necessary power for electricity consumption. It also works, under certain circumstances, as generator for a short period.





**CTS H2** cylinders, H<sub>2</sub>cylinder, are meant to stock energy in the form of pressurized **hydrogen**. These tanks are available in a wide range of volumes making the product apt to several different applications. Their main feature is their lightness, as a result they are the lighter technical gas tanks on the market at present, thanks to the innovative technology in carbon fiber produced by **CTS Group**. It is possible to adapt H<sub>2</sub>cylinder to different types of connections available on the market through adapted standards.

### MAIN APPLICATIONS

- Electric mobility
- Navigation
- Military use
- Aerospace station
- Electric stockpiles
- Generators
- Range Extenders

### CHARACTERISTICS

- Storage and carriage of high pressured hydrogen
- Different sizes, minimal amount of space
- Easy to handle
- Lightness
- Universality
- High pressure
- High energy density

ULTRA LIGHT TANKS  
MADE OF SPECIAL  
COMPOSITE MATERIAL  
FOR HIGH PRESSURE





## HIGH-PRESSURE CYLINDER SUPPLIER

The project of H<sub>2</sub>dispenser system is a thorough item made of **hydrogen** electrolyser and storage, result of the best synergy among sustainable technologies available to produce, store and re-use electric power. The system has a renewable energy converter which thanks to **hydrogen** is fit for traditional practical uses such as the everyday electric mobility.

H<sub>2</sub>dispenser embodies the new concept of distribution of sustainable energy available to everybody and is characterized by a high level of efficiency of transformation, a minimal environmental impact, insignificant emissions, low noise, modular efficacy, and easiness of tracking. The product consists of a Stand-Alone single item able to make easy for **hydrogen** to access in a rapid, safe and direct way in several different practical uses. For the first time an easy Plug & Play system of **hydrogen** distribution is available.

### CHARACTERISTICS

- Different sizes of rechargeable cylinders
- Quick substitution
- Plug & Play
- Design
- Web Check application
- Remote control
- Maximum safety conform to EC
- Possibility to customize the storage

## CONCEPT

H<sub>2</sub>dispenser allows a punctual and independent localization of the energy in the form of **hydrogen**.

The idea is to make accessible the H<sub>2</sub> to reach the user everywhere it is, in an easy and completely safe way.

### MAIN APPLICATIONS

- Electric mobility
- Hydrogen UPS
- Welding
- Laboratory practical uses
- Electric generator

### MAIN ADVANTAGES

- Possibility of being integrated
- Plug & Play
- Stand alone
- Limited level of maintenance
- Efficiency
- No CO<sub>2</sub> emissions
- Ready substitution of returnable tanks



# CTS H2 CASE HISTORY

**CTS H2** gave its contribution to carry out further prestigious projects involving important national and international partnership such as ENEA, Petronas, Petrobras, Data Center, Itaipù, Radio Viva, Rptv, Gazeta Do Povo e Tv Cnt, ect.



## STORAGE STRUCTURE SLOVACCHIA

This structure is installed in a photovoltaic wind park, capable of storing 200KW of energy in the form of **hydrogen**.



## OFF-GRID SYSTEM ITALY

Zero-environmental impact structure made to store through **hydrogen** renewable energy.



## AUTOMATIC CYLINDER RECHARGE MALESIA

The structure allows to stock 200-bar **hydrogen** by means of an electrolyser with automatic tank recharge.



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