



Converters for green hydrogen production



Rectifiers for large scale electrolysis



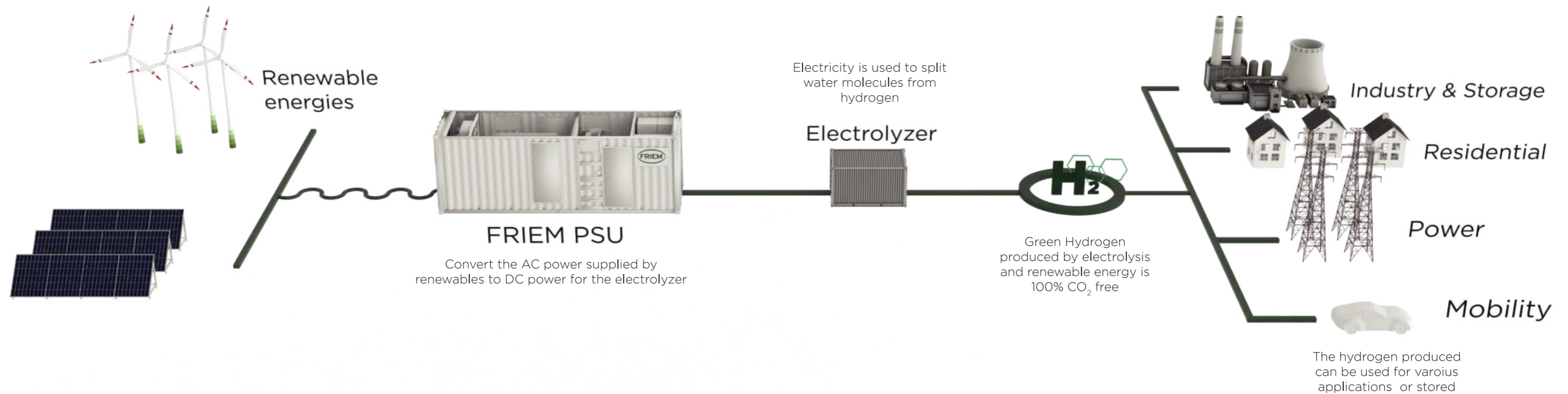
The production of green hydrogen using FRIEM's Power Supply Unit (PSU) will be key to support the net-zero emissions target and transform the energy of tomorrow. We deliver the perfect solution for our customers' needs: we supply the rectifier and all the equipment which are part of the conversion system.

Robust, efficient and purpose-built, FRIEM's PSU pairs with the main electrolytic cells' technologies (Alkaline, PEM and SOEC). In situation where plant space is narrow or restricted, the PSU can be containerized.



Decarbonization one way step to 2050

Reducing CO2 emissions and tackling climate change, are goals of the energy transition. Hydrogen is an energy flexible carrier. It enables the renewables integration in power generation and clean energy distribution, helping in decarbonize the so called "hard to abate sector". Green hydrogen has been globally identified as one of the most important enablers to reach the zero emission within 2050.



FRIEM's PSU in short

- Low impact on the supply voltage grid
- High efficiency of the system
- Development of plug & play solutions
- Technical support during the whole lifecycle of the plant
- Reduced footprint
- Easy maintenance on each component

Research generates value

Our systems are custom-tailored developed and realized, following our clients' specifications. Constant investments in research and development grant our products accountability and efficiency.



Technology	SCR/IGBT
Maximum DC Voltage	Up to 1500 Vdc
Maximum Current	>100.000 A
Operation	Continuous
Type of regulation	Digital
Regulation accuracy	0,1% full scale
Regulation Range	1% ... 100% of rated current
Communication protocol	Profibus, Modbus, Profinet, Ethernet
Primary Voltage	3 - 36 kV (Higher levels on demand)
Transformer Type	Dry Type/Oil Filled
Cooling Medium	Water/Air
Installation	Indoor/Outdoor/Fully Containerized (20", 40", Custom)
Ambient Conditions	-20/+40 °C
Standards	IEC, CSA, EAC/GOST, UL
Protections	Overcurrent, overvoltage, temperature monitoring, water flow and temperature, coolant level and pressure





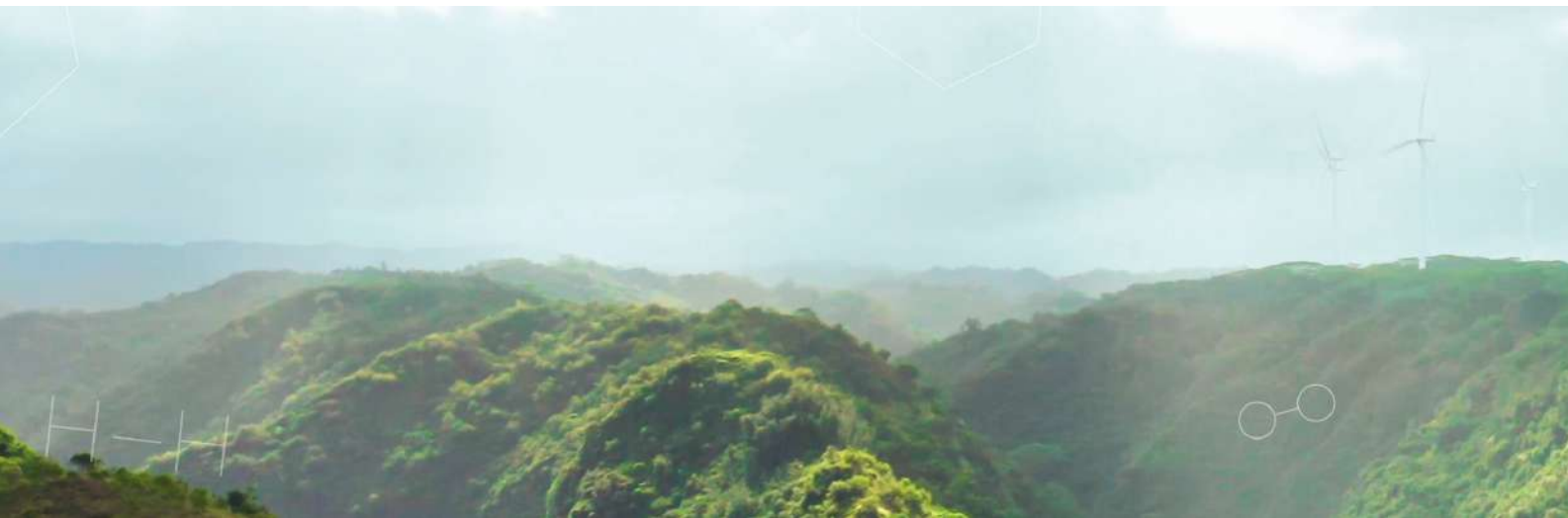
The green hydrogen challenge: our commitment towards the future

FRIEM's converters have been working for the primary industry for over 70 years. Today, thanks to the extensive experience matured in the chlor-alkali applications, we hold a central position in the green hydrogen supply chain, between the renewable energies and the end users, both in the process Power to Gas and Gas to Power.

We partner with international associations sharing knowledges and best practices to help the energy transition and we contribute in research European projects to increase hydrogen technology social awareness, enhancing its application and benefit for the community.

Today FRIEM keeps its headquarters in Segrate (Milan). The industrial area of 11 thousand sqm, hosts more than 120 workers. Moreover, the company counts on workshops and representatives in 27 countries across the 5 continents, beyond two subsidiaries in USA (FRIEM America Ltd.), Brasil (FRIEM LATAM Eireli) and a commercial branch in Indonesia.





CONVERTING TECHNOLOGY

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