

OCTOBER 2023

# NEWSLETTER

## Update from GRZ

While Europe was on vacation, our systems have produced on-demand electric power, high-pressure hydrogen, and renewable methane this summer. Learn more about it in this and upcoming newsletters!

**Standardized storage:** We have recently released our standardized solid-state metal hydride storage modules that are now commercially available. We have developed two different product lines: the DASH M-series and C-series. Common for our storage is that there is no ATEX zone around it - as it is the safest hydrogen storage technology by design.

The DASH M-series Hydrogen Storage Modules are delivered as stand-alone modules for direct usage or integration in bigger hydrogen solutions. The modules are designed so that they can both store and release hydrogen at ambient temperature - and no cooling or heating is required. We have 2 versions available: the M3 and the M45. The M3 module holds 3 kg of useable hydrogen and the M45 holds 45 kg of useable hydrogen.

The DASH C-series Hydrogen Storage Modules are delivered as Plug & Play containerized modules to be used as single systems or to be integrated into bigger hydrogen solutions. We have included an HVAC system which allows us increasing both the charging and the discharging flowrates. The DASH C-series comes in 4 different versions storing 45, 90, 135, or 180 kg of useable hydrogen.

We are also happy to announce that we have already received orders immediately after product release for our DASH M45 from Italy for a Power-to-Power solution with renewable energy, and for a DASH C45 from a client in Brazil where the hydrogen will be used to power a fuel cell within an innovation park.

We are ready to take your orders - so do not hesitate to contact us or our certified partners directly.

## Technology update

On August 30<sup>th</sup>, we participated in the inauguration of the "Green Gas" project at Gaznat in Aigle in Switzerland with a great success. The UPSOM single stage modular methanation reactor designed and built by GRZ is one of the core parts of this reference plant. It takes CO<sub>2</sub> and hydrogen and produces synthetic methane to be injected in the natural gas grid.



The plant can be seen in an online video [here](#) or, of course, can also be visited on site. News on the further commercialization of the technology will follow.



# NEW PARTNERS

At GRZ we have a clear strategy to work with local qualified partners in order to be closer to the market, and thus provide better service to our final customers. We are aware that most end-users of hydrogen applications are looking for complete turn-key solutions, and this is exactly what our partners are able to deliver. We are building a global presence, so the end-users can always find a local GRZ partner to help them designing and delivering the best state-of-the-art hydrogen solutions. We are happy to have entered into partnership agreements with a number of forward looking companies. Please see a short presentation of our new partners below.



**Milani S.p.A.** was founded in 1964 as a family company in Italy, and has rapidly broadened its activities realizing important projects and transforming the company from a family business into an industrial enterprise, able to equally deal with little private clients and big industrial ones.



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Milani offers to its customers a remarkable flexibility with a full-spectrum approach towards every project. These are the distinctive features of a customer service which is developed, step by step, from the feasibility stage to the design phase, and from the conclusion of works up to the following maintenance and management of systems.

Milani is active in electrical systems, automation, low voltage systems, photovoltaic systems and skid mounted units for gas treatment as well as engineering and have recently expanded their portfolio so they also now are active within the hydrogen space – which is closely linked to the electricity areas Milani has been working in for several decades. Milani works as an EPC for electrical, PV, and hydrogen solutions.

**SHG Supreme Hydrogen AB**, founded in 2018, is a knowledge and engineering company developing and applying circular, green, and emission-free energy solutions.

SHG is focused on development and implementation of systems for production, handling and usage of green hydrogen and other products generated by green power. SHG delivers concept development of green hydrogen production, solutions for optimizing hydrogen usage and the development of hydrogen solutions for transportation.



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Their main areas of activity are on site applications for heating and energy supply of buildings, farms, auxiliary power supply as well as mobile applications, mainly passenger vessels and work boats.



**MAS Energy s.r.l.** is an Italian family-owned company, based in Palo del Colle (BA) established by Ing. Gaetano Mastrandrea with over two decades of successful development of photovoltaic and wind projects in Southern Italy. With a passion for renewable energy and a deep understanding of the Italian energy market, Gaetano, with the collaboration of his son Onofrio Mastrandrea and his team, aims to promote sustainable energy solutions and to contribute to the fight against climate change. According to Gaetano Mastrandrea, "renewable energy has the potential to revolutionise the way we power our world. By harnessing the power of the sun and wind, we can create clean and sustainable energy sources that will help to reduce our reliance on fossil fuels."



Onofrio and Gaetano Mastrandrea  
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This is where green hydrogen comes in. Undoubtedly it is a highly versatile element with a wide range of possible applications. It can be used fuelling fuel cells, for heating and cooking, as well as for transportation or in the industry. MAS Energy works as an EPC for complete renewable energy solutions, including energy storage, transport, or to decarbonize industrial clients.



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**Skai Energies** is a leading Australian hydrogen solutions project developer and technology supplier, specialising in guiding organisations through their transition to hydrogen-based clean energy. Leveraging strong partnerships with key European technology innovators, Skai Energies delivers comprehensive hydrogen solutions for localised 'green' power generation, storage, and utilisation.

Their approach is to work in close collaboration with customers, to develop the critical elements that feed into a hydrogen project. This typically includes the development of hydrogen strategies with clear direction and actionable plans, operational and commercial modelling, stakeholder engagement planning and implementation, hardware procurement, specialist engagement, and project implementation support.

# DASH HYDROGEN STORAGE MODULES

Our metal hydrides offer unparalleled longevity, lasting for decades without any significant losses. They represent the most dependable and safest means of hydrogen storage. When energy is required, we extract hydrogen from the storage, converting it back into electricity and heat, or consuming it directly in industrial applications.

**DASH Hydrogen Storages:** Whether it is for energy storage, industrial, Power-to-X, ammonia production, or other applications, the technology enables storing large quantities of hydrogen in a safe, dense and effective manner, wherever you need it and for as long as you need it.

**C-series:** for applications in which containerized solutions are needed, we have created the C-series. These containerized versions represent a complete Plug & Play solution with thermal management, H<sub>2</sub> sensors, and ventilation, ready for immediate deployment. They are available as 45, 90, 135, and 180 kg versions.



DASH C180 Hydrogen Storage Module with 180 kg of usable storage capacity

**M-series:** the Modules are delivered as stand-alone parts to be used directly or to be integrated into bigger hydrogen solutions. They are available in a 3 kg and a 45 kg version.



DASH M45 Hydrogen Storage Module with 45 kg of usable storage capacity

Did you know that GRZ is not only a producer of storages, but also builds hydrogen compressors? Stay tuned for more information!

**Increasing the pressure:**

