

MODULAR ELECTROLYSIS

KEY BENEFITS



CLEANER HYDROGEN

NEA|HYTRON HyPEM is free of harmful chemicals.



QUICK AND FLEXIBLE

NEA|HYTRON HyPEM's modular structure allows easy installation and scalability.



MINIMUM FOOTPRINT

The containerized system makes planning easy when space is limited.



BROAD MODULATION RANGE

NEA|HYTRON HyPEM reacts quickly to fluctuations in H₂-demand or renewable energy supply.



CLOUD-CONNECTED

Asset health is always monitored with NEA|EXPLORE cloud platform.



CONDITION MANAGEMENT

360° Service. NEA service levels give confidence for interruption-free and smooth operation.



FIT FROM THE START

HyPEM is designed to fulfill Hydrogen Refueling Station standards.



PURITY AS A STANDARD

HyPEM delivers hydrogen in vehicle fuel-cell compliant quality.

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PUT YOUR DECARBONIZATION PROJECTS IN THE HANDS OF A PARTNER OF TRUST

Orchestrating all elements in a hydrogen generation project from planning, implementation to operation is a considerable challenge. Involving the right partners is key and a matter of trust.

NEUMAN & ESSER designs turnkey solutions for the overall optimum through deep inhouse expertise in all relevant modules instead of supplying single components for H₂-generation plants or HRS.

- COMPRESSOR SOLUTIONS
- SEALING SOLUTIONS
- PROCESS SOLUTIONS
- DIGITAL SOLUTIONS
- ENERGY SOLUTIONS

Customers benefit from an OEM with decades of H₂-expertise and receive support throughout the entire lifecycle of their decarbonization projects: starting from greenfield studies, through engineering and construction, to digital integration and 360° service during operation.

Contact NEUMAN & ESSER

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Find your local contact
and more information



CARING FOR CLEAN INDUSTRY

An Integrated Solution Use Case

Agile. Solution. Experts.

NEA | HYTRON HyPEM

QUICK FACTS

Nominal Power	[MW]	1	2	5	10
Output	[kgH ₂ /day]	430	860	2,150	4,300
System Power Consumption	[kW/kgH ₂]	53			
Modulation Range (per stack)		20% - 100%			
H₂ Pressure	[bar(g)]	30			
O₂ Pressure	[bar(g)]	<= 10			
H₂ Quality		Hydrogen Fuel Ready (SAE J 2719 / ISO14687:2019)			
H₂O Consumption	[l/kgH ₂]	19			
H₂O Quality Required		EU Directive 2020/2184-EU			
Temp. Range	[°C]	-20°C - +40°C			
Noise Level		Optimized for Installation in Urban Environments			
Input Voltage Required	[kV]	Medium Voltage (e.g., 20kV)			
Power Cube		Rectifier and Transformer Unit delivered to Customer Requirements (Customized)			

All HyPEM systems are compliant with ISO 19880 for Hydrogen Refueling Station (HRS) applications.

For individual/large scale applications, a local NEUMAN & ESSER Sales expert is ready to assist.

SAVINGS OF 1,600t CO₂ THROUGH SECTOR COUPLING

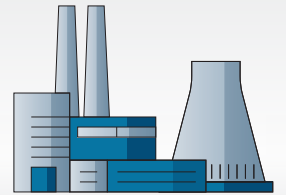
AN INDUSTRY USE CASE

PROJECT DEVELOPMENT

An industrial company requiring steam boiling for technical processes wishes to become independent from fossil energy.

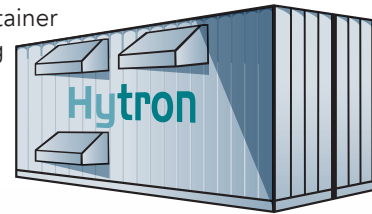
In the first step as a general contractor for turnkey Hydrogen production solutions, NEUMAN & ESSER

develops and engineers a full-scope sector coupling project including electrolysis and utilization of excess heat and O₂.



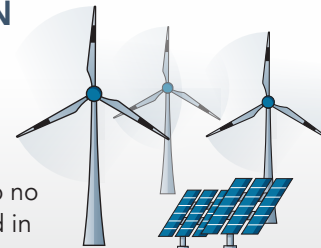
ELECTROLYZER SOLUTION

The heart of the overall solution: the **NEA|HYTRON HyPEM** electrolyzer. Easily installed container modules, delivering the highest standards in H₂ quality and operation.



GREEN HYDROGEN

Water electrolysis with a **NEA|HYTRON HyPEM**, means making green Hydrogen from renewable sources even cleaner due to no harmful chemicals involved in PEM technology.



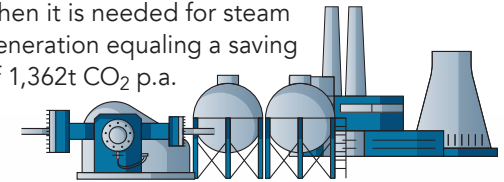
DIGITALIZED SERVICE

Customer confidence: All Hydrogen related processes are monitored remotely to support trouble-free production and processing. The basis for a 360° Service Level Agreement with NEUMAN & ESSER.



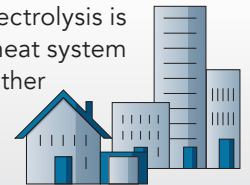
COMPRESSION FOR STEAM GENERATOR

A **NEA|HOFER MKZ** Compressor System creates the pressure required for the customized storage vessels to have the right H₂-supply when it is needed for steam generation equaling a saving of 1,362t CO₂ p.a.



FEEDING A DISTRICT HEAT SYSTEM

The excess heat from the electrolysis is used to feed into a district heat system nearby. This translates to another contribution to stopping climate change of 238t CO₂ savings p.a.



O₂ FOR SEWAGE TREATMENT PLANT

Additional benefit: The oxygen produced during the electrolysis as a by-product accelerates wastewater recycling at the municipal sewage treatment plant.

