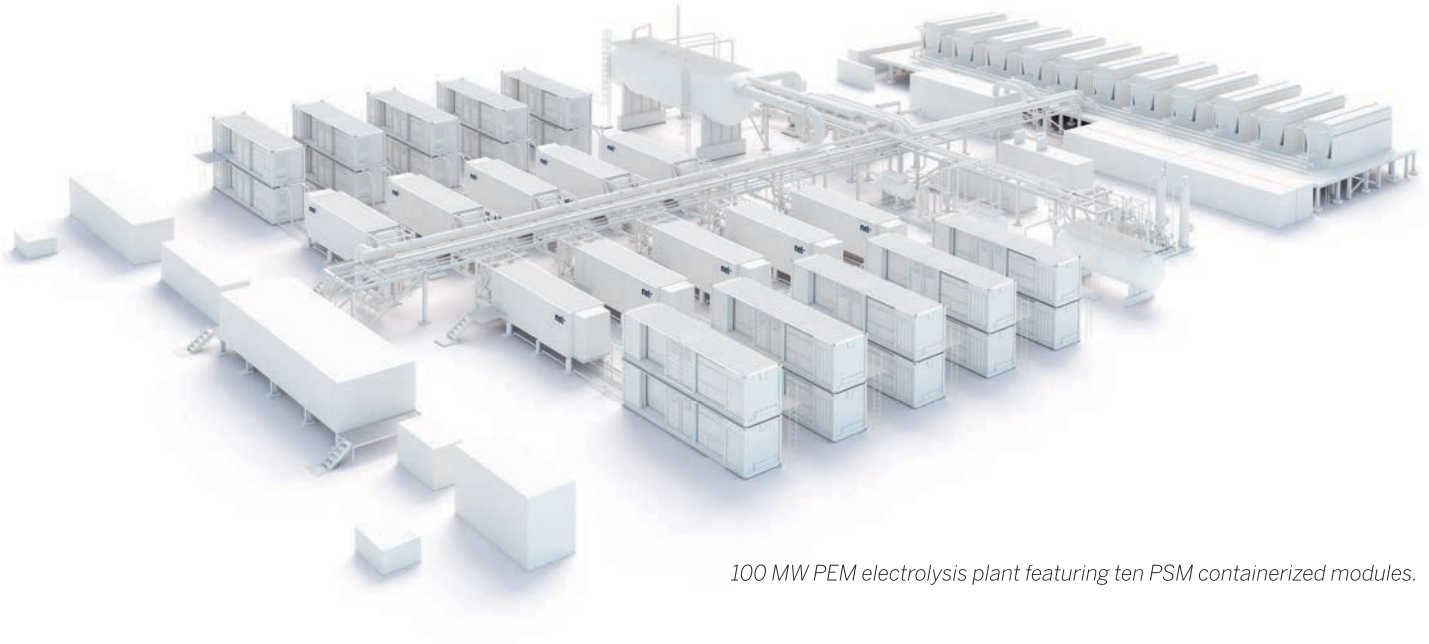
PEM 100

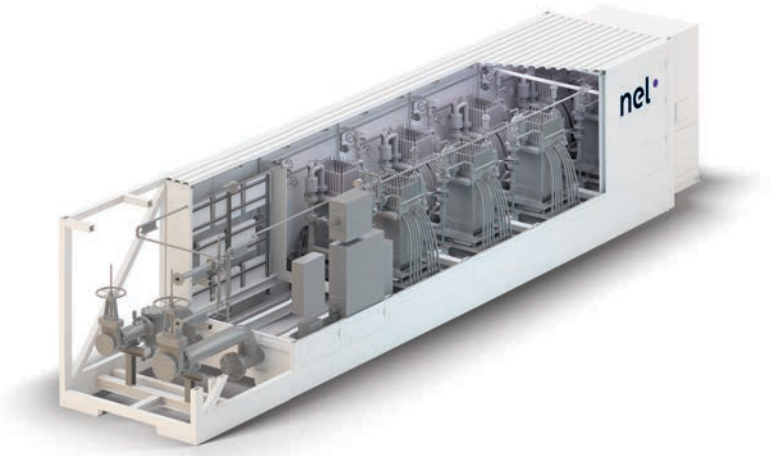
Proton Exchange Membrane (PEM) 100 MW Process Design Package



100 MW PEM electrolysis plant featuring ten PSM containerized modules.

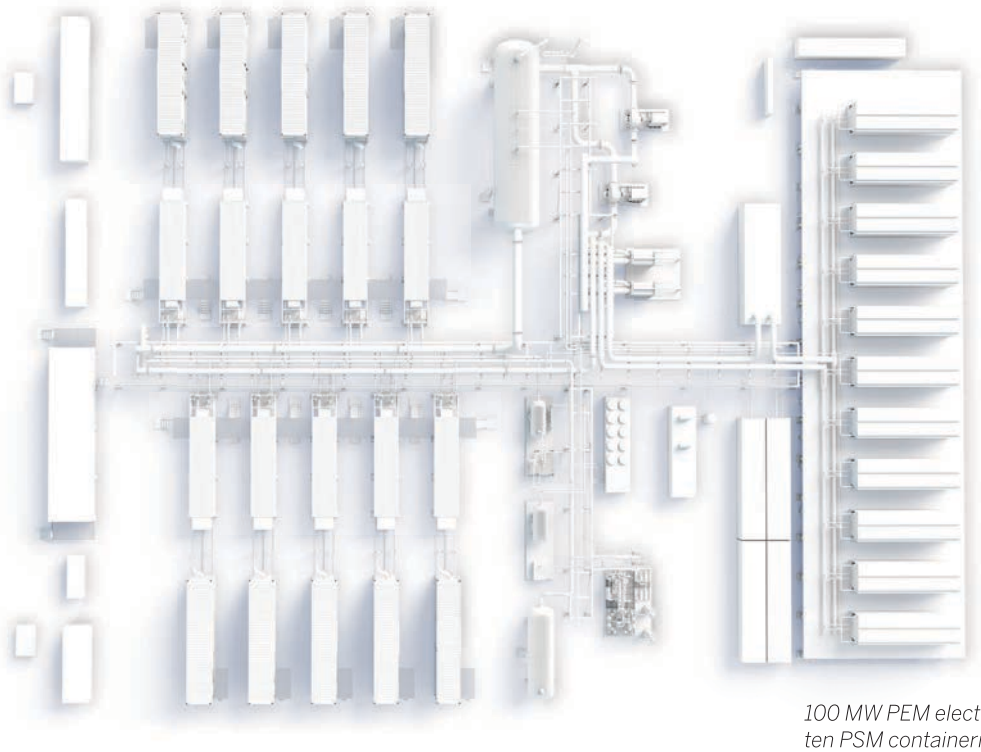
The PEM 100 is an advanced, cost-optimized electrolyser platform, converting a nominal input of 100 MW into high purity hydrogen. This platform integrates ten PSM containerized electrolyser stack modules into a consolidated balance of plant to enhance energy efficiency and scalability, and creating a standard building block for large plants.

- Industry leading reliability
  - Longest life stacks
- Modularity at scale
  - Containerized equipment
  - Minimized EPC scope
- Proven technology
  - Largest installed base globally
  - Demonstrated and field tested safety
- Lowest total cost of ownership
  - High efficiency and low O & M costs



Cutaway view of 10 MW PSM containerized module.

MODEL	PEM 100
Class	100 MW
Electrolyte	Proton Exchange Membrane (PEM) – caustic-free
HYDROGEN PRODUCTION	
Nominal Production Rate Nm^3/h (m^3/h @ 0°C, 1 bar) kg/24 h	20,127 Nm^3/h 42,846 kg/24 h
Delivery Pressure – Nominal	30 barg (435 psig); full differential pressure H_2 over O_2
Power Consumption at Stack per Unit of H_2 Gas Produced at 100% Capacity[1]	4.72 kWh/Nm^3 53.2 kWh/kg
Power Consumption by Plant (Stack + BoS + Bop + Cooling) per Unit of H_2 Gas Produced at 100% Capacity[1]	5.0 kWh/Nm^3 56.7 kWh/kg
Purity (with optional dryer)	99.999+%
Turndown Range	10 to 100%
SITE AND UTILITIES	
Standard Siting Location	Outdoors
Ambient Temperature[2]	-30 to 50°C (-22 to 122°F)
Altitude Range[3]	Sea level to 1,000 m (3,281 ft)
Water Consumption (cooling + feedwater)[4]	1.2 l/Nm^3 of H_2 (0.32 gal/Nm^3 of H_2) 13.1 l/kg of H_2 (3.46 gal/kg of H_2)
Electrical Requirements	35 kV, 50/60 Hz
Dimensions W x D[5]	96 m x 69 m (315 ft x 226 ft)



100 MW PEM electrolysis plant featuring ten PSM containerized modules.

Specifications are subject to change. Please contact Nel Hydrogen for solutions to best fit your needs.

1. Beginning of life and dependent on configuration and operating conditions.
2. Ambient temperature requirement for PSM containerized electrolyser stack modules only.
3. Consult Nel Hydrogen Applications Engineering Department for installations above 1,000 m (3,281 ft).
4. Cooling water is not continuous. Max required is ~250 LPM at hottest times at EOL and will vary significantly by site.
5. Site conditions may cause the design to vary.

www.nelhydrogen.com | +1.203.949.8697 | info@nelhydrogen.com

Made in the USA with global materials

PD-0600-0144 Rev A