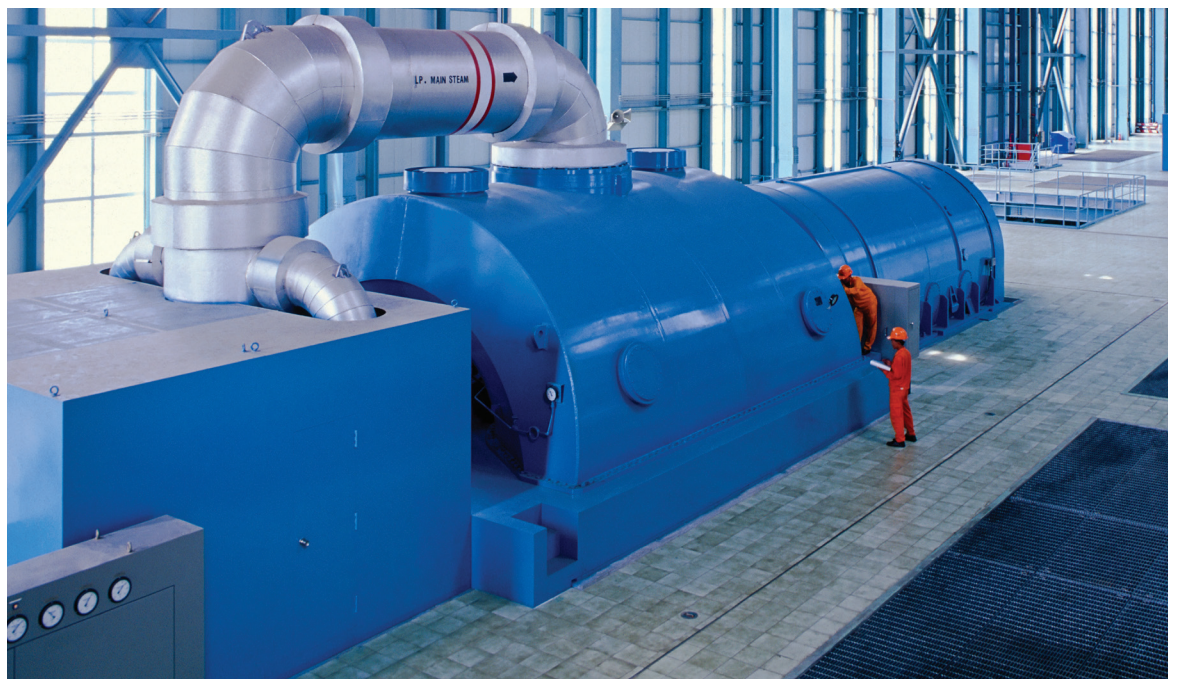


# On-Site Hydrogen Solutions for Generator Cooling



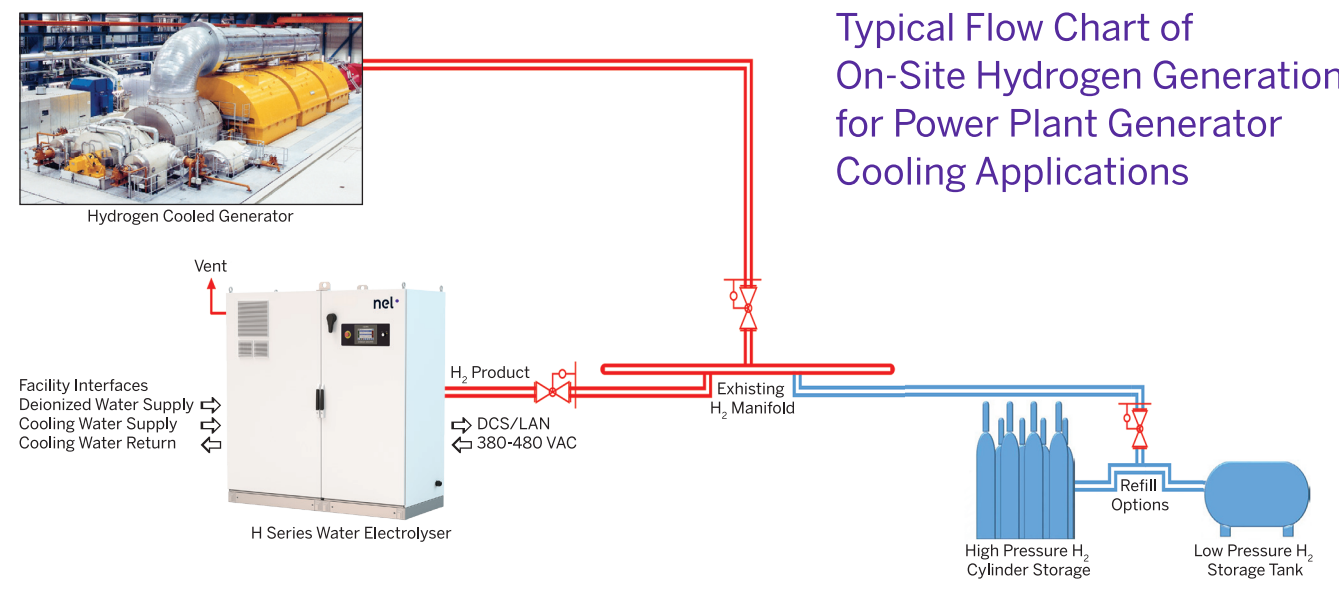
Featuring Proton Exchange Membrane (PEM)  
Advanced Water Electrolysis Technology

# On-Site Hydrogen Production Optimizes Cooling Operations for Power Plant Generators

Nel Hydrogen PEM water electrolyzers are designed to meet the specific needs of power plant generator cooling. Our C, H and S Series units provide fast response times and production flexibility, offering turnkey solutions for generator cooling hydrogen supply. These state-of-the-art electrolyzers utilize proton exchange membrane technology and electricity to separate water into pure hydrogen and oxygen. Each generator produces ultra-high purity hydrogen gas at 99.999+% with output pressures up to 30 barg (435 psig) and at a dew point of -65°C (-85°F) or better.

These compact electrolyzers can be placed on the generator deck or most other indoor plant areas. Their unique design allows the electrolyzers to contain virtually no stored hydrogen, even when generating hydrogen at 30 Nm³/h – meeting the daily hydrogen requirements of power plants, no matter how large.

Nel Hydrogen’s water electrolyzers provide reliable, safe, low-cost hydrogen for generator cooling, giving power plant customers an attractive return on investment while improving site security, safety and personnel productivity.



SPECIFICATIONS		C10 System	C20 System	C30 System
Nominal Production Rate		10 Nm³/h	20 Nm³/h	30 Nm³/h
Turndown Range		0 to 100% (automatic)	0 to 100% (automatic)	0 to 100% (automatic)
Power Consumption by System <sup>1</sup>		6.2 kWh/Nm³	6.0 kWh/Nm³	5.8 kWh/Nm³
Purity		99.999+% [H <sub>2</sub> O < 2 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 2 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 2 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]
Delivery Pressure		30 barg (435 psig)	30 barg (435 psig)	30 barg (435 psig)
Dimensions W x D x H	Electrolyser Enclosure	2.5 m x 1.2 m x 2 m (8.2 ft x 3.9 ft x 6.6 ft)	2.5 m x 1.2 m x 2 m (8.2 ft x 3.9 ft x 6.6 ft)	2.5 m x 1.2 m x 2 m (8.2 ft x 3.9 ft x 6.6 ft)
	Power Supply Enclosure	1.7 m x 1 m x 2 m (5.6 ft x 3.3 ft x 6.6 ft)	1.7 m x 1 m x 2 m (5.6 ft x 3.3 ft x 6.6 ft)	1.7 m x 1 m x 2 m (5.6 ft x 3.3 ft x 6.6 ft)
Ambient Temperature		5 to 40°C (41 to 104°F)	5 to 40°C (41 to 104°F)	5 to 40°C (41 to 104°F)
Electrolyte		Proton Exchange Membrane	Proton Exchange Membrane	Proton Exchange Membrane
Feed Water at Maximum Production		9 l/h (2.4 gal/h)	17.9 l/h (4.7 gal/h)	26.9 l/h (7.1 gal/h)

SPECIFICATIONS		H2 System	H4 System	H6 System
Nominal Production Rate		2 Nm³/h	4 Nm³/h	6 Nm³/h
Turndown Range		0 to 100% (automatic)	0 to 100% (automatic)	0 to 100% (automatic)
Power Consumption by System <sup>1</sup>		7.3 kWh/Nm³	7.0 kWh/Nm³	6.8 kWh/Nm³
Purity		99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]
Delivery Pressure <sup>2</sup>		15 barg (218 psig)	15 barg (218 psig)	15 barg (218 psig)
Dimensions – W x D x H		1.8 m x 0.8 m x 1.9 m (5.9 ft x 2.6 ft x 6.2 ft)	1.8 m x 0.8 m x 1.9 m (5.9 ft x 2.6 ft x 6.2 ft)	1.8 m x 0.8 m x 1.9 m (5.9 ft x 2.6 ft x 6.2 ft)
Ambient Temperature		5 to 50°C (41 to 122°F)	5 to 50°C (41 to 122°F)	5 to 50°C (41 to 122°F)
Electrolyte		Proton Exchange Membrane	Proton Exchange Membrane	Proton Exchange Membrane
Feed Water at Maximum Production		1.83 l/h (0.48 gal/h)	3.66 l/h (0.97 gal/h)	5.5 l/h (1.45 gal/h)

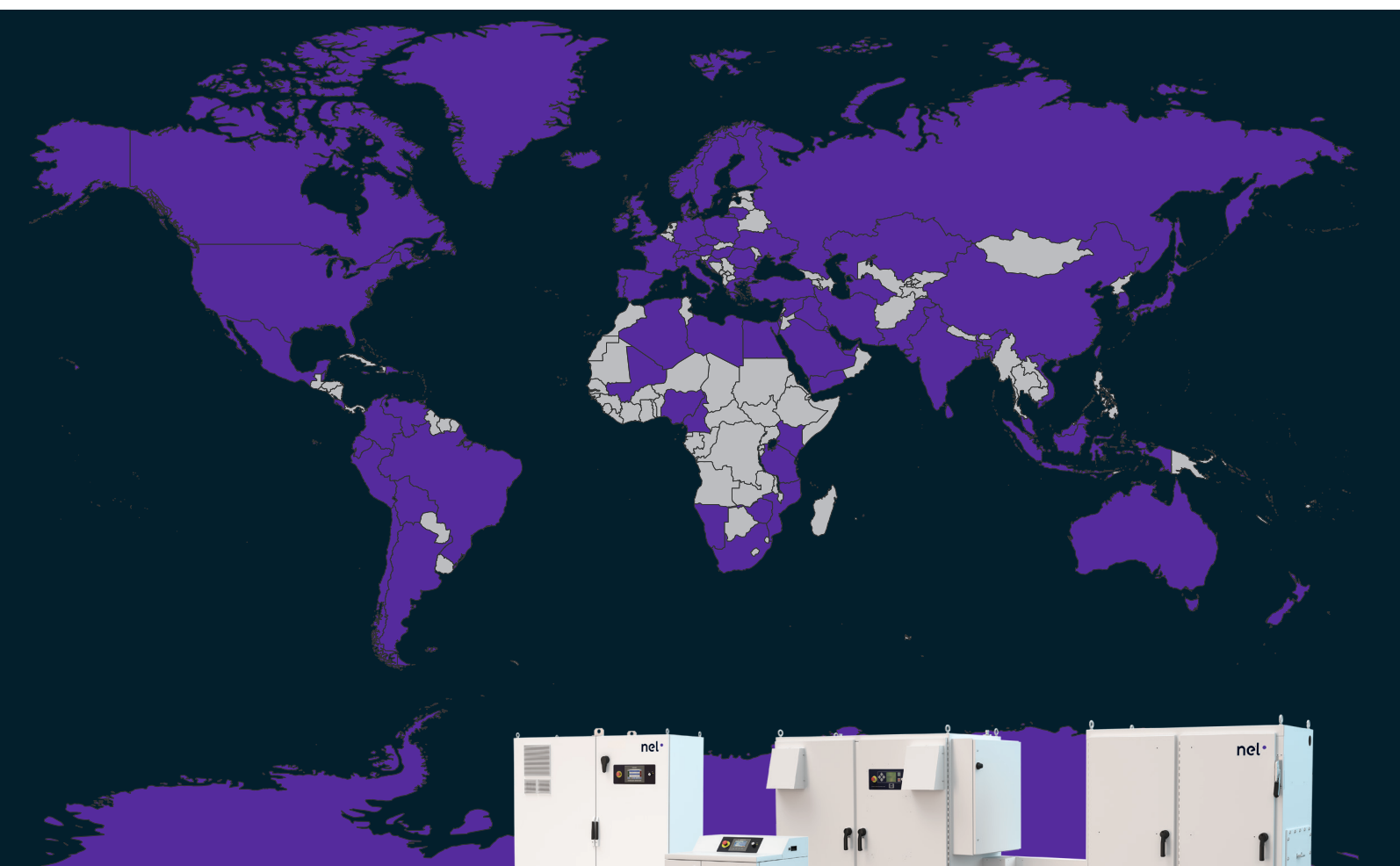
SPECIFICATIONS		S10 System	S20 System	S40 System
Nominal Production Rate		0.27 Nm³/h	0.53 Nm³/h	1.05 Nm³/h
Turndown Range		0 to 100% (automatic)	0 to 100% (automatic)	0 to 100% (automatic)
Power Consumption by System <sup>1</sup>		6.1 kWh/Nm³	6.1 kWh/Nm³	6.1 kWh/Nm³
Purity		99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]	99.999+% [H <sub>2</sub> O < 5 ppm, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all others undetectable]
Delivery Pressure		13.8 barg (200 psig)	13.8 barg (200 psig)	13.8 barg (200 psig)
Dimensions – W x D x H		0.8 m x 1 m x 1.1 m (2.6 ft x 3.3 ft x 3.6 ft)	0.8 m x 1 m x 1.1 m (2.6 ft x 3.3 ft x 3.6 ft)	0.8 m x 1 m x 1.1 m (2.6 ft x 3.3 ft x 3.6 ft)
Ambient Temperature <sup>3</sup>		5 to 40°C (41 to 104°F)	5 to 40°C (41 to 104°F)	5 to 40°C (41 to 104°F)
Electrolyte		Proton Exchange Membrane	Proton Exchange Membrane	Proton Exchange Membrane
Feed Water at Maximum Production		0.26 l/h (0.07 gal/h)	0.47 l/h (0.13 gal/h)	0.94 l/h (0.25 gal/h)

For reference only – specifications are subject to change. Please contact Nel Hydrogen for solutions to best fit your needs.  
<sup>1</sup> Beginning of life and dependent on configuration and operating conditions.   <sup>2</sup> 30 barg (435 psig) option.   <sup>3</sup> 5 to 50°C (41 to 122°F) option for S10.

# Global Service and Support Solutions

Nel Hydrogen is proud to offer products and services that assure a superior level of customer satisfaction. Our uncompromising attention to customer service and quality enables us to deliver, install and support gas generation solutions on every continent. With proven reliability and world-class technical support in over 85 countries, we continue to foster a strong network of lasting relationships with our customers.

Let us help you, visit [www.nelhydrogen.com](http://www.nelhydrogen.com) to learn more!



[www.nelhydrogen.com](http://www.nelhydrogen.com) | +1.203.949.8697 | [info@nelhydrogen.com](mailto:info@nelhydrogen.com)

MADE IN USA

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