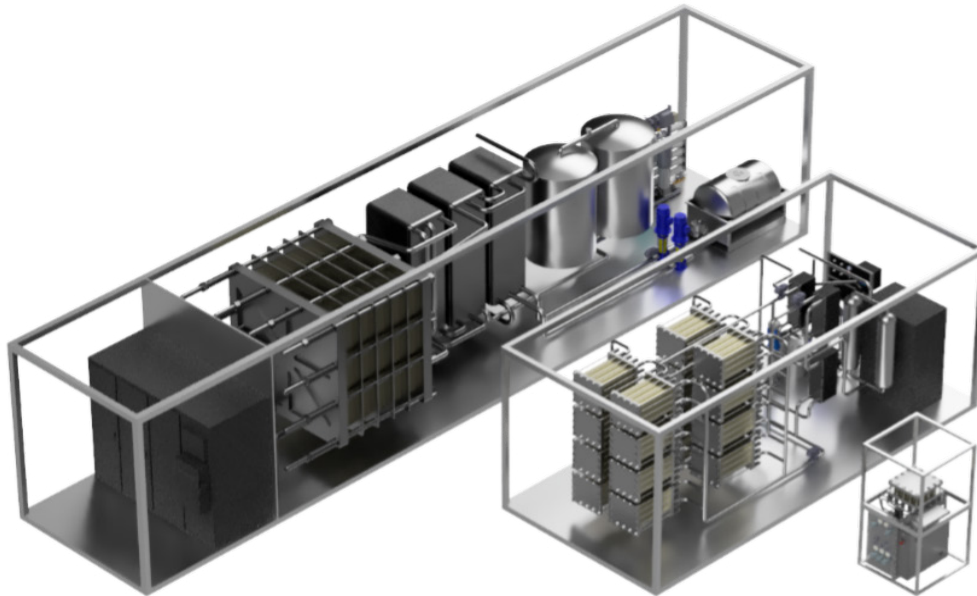


Water Vapor Electrolyzers



**Advanced
Ionics**



Demo units at 1-100kW, Small Commercial 1 ton at 1.6 MW, Large Commercial 7 tons at 11 MW.

Our water vapor electrolyzer creates the lowest-cost green hydrogen available by tapping into existing process and waste heat sources at industrial facilities. This symbiotic relationship allows existing heat sources to help drive electrolysis, reducing electricity requirements. Our systems, built from common materials in unique configurations, allow our electrolyzer to work without polymer membranes or rare materials, and most importantly, function across a wide range of temperatures. Advanced Ionics's water-vapor electrolyzer has significant advantages over existing solid oxide electrolyzers and PEM and Alkaline electrolyzers,

thanks to our low electricity requirements and ability to operate at temperatures similar to existing industrial processes.

- 01** Works without polymer membranes
- 02** No exotic materials or rare elements
- 03** Electricity requirements at 35kWh/kg

Specifications



OPERATIONS

Stack Temperature	300C nominal
Operation Range	0-100%
Lifetime	70,000+ hours
Electrodes/Catalyst	Proprietary nickel-based (No platinum or iridium)
Warm stand-by to production	<100 ms
Cold stand-by to production	<300 s

FLOWS

Hydrogen Pressure	1-40 bar
Hydrogen Purity	99.999% (with purification)

ELECTRICITY

Electricity Consumption	30-46 kWh/kg (dependent on quantity & quality of heat input)
Power Supply	Available options for AC-DC, DC-DC, and hybrid. 98% DC-DC efficiency
Cell Voltage	1.30 V/cell nominal. 1.20-1.50V ranges allowable
Cell Current Density	2-20kA/m2 nominal. up to 40kA/m2 possible

