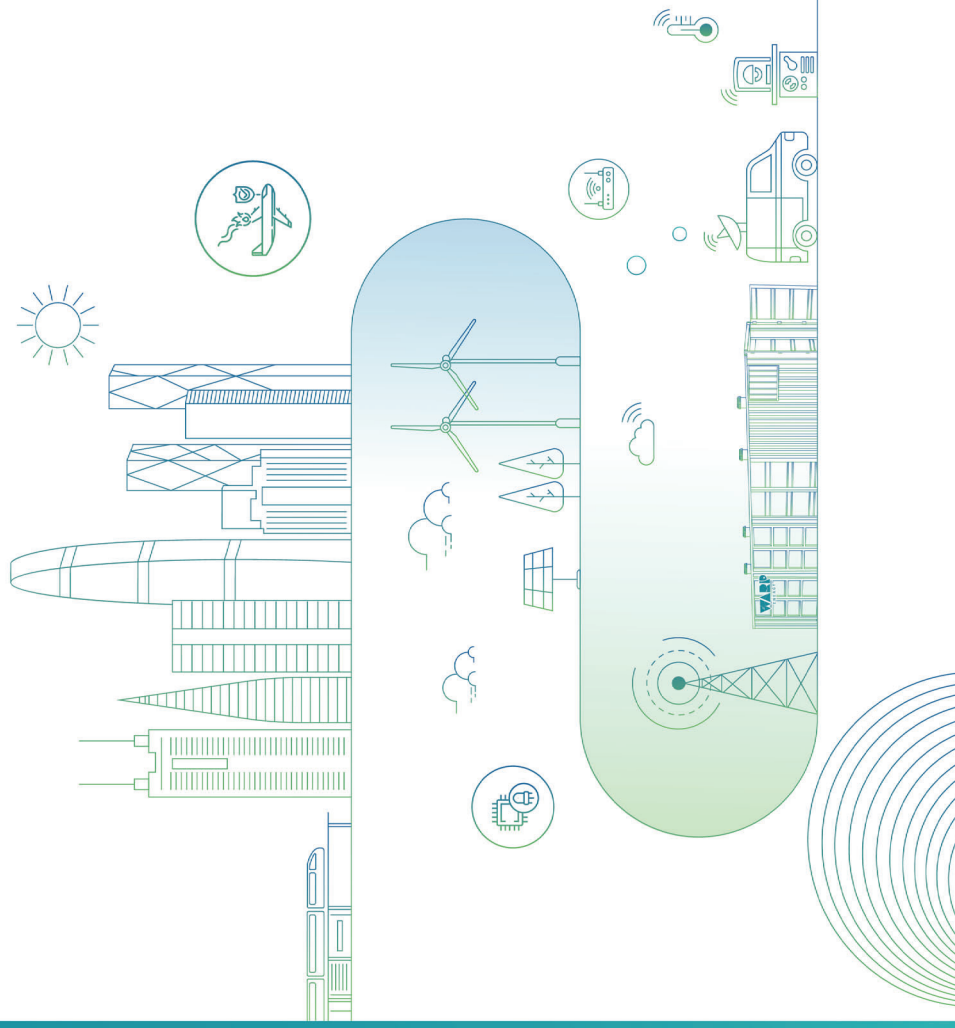




Global Leader in AEM Technology



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AEM Electrolyser Lineup



High efficiency



High reliability



Fluctuation resistance



Modularization



AEM

Delivering Anion Exchange Membrane (AEM)
Based Comprehensive Energy Solutions

About WarpEnergy



2023

A global leader in AEM technology that is founded in September 2023 at Shanghai.



60%

Founded by professors who returned from Australia, over 60% of the company's staff have postgraduate degrees.



100%

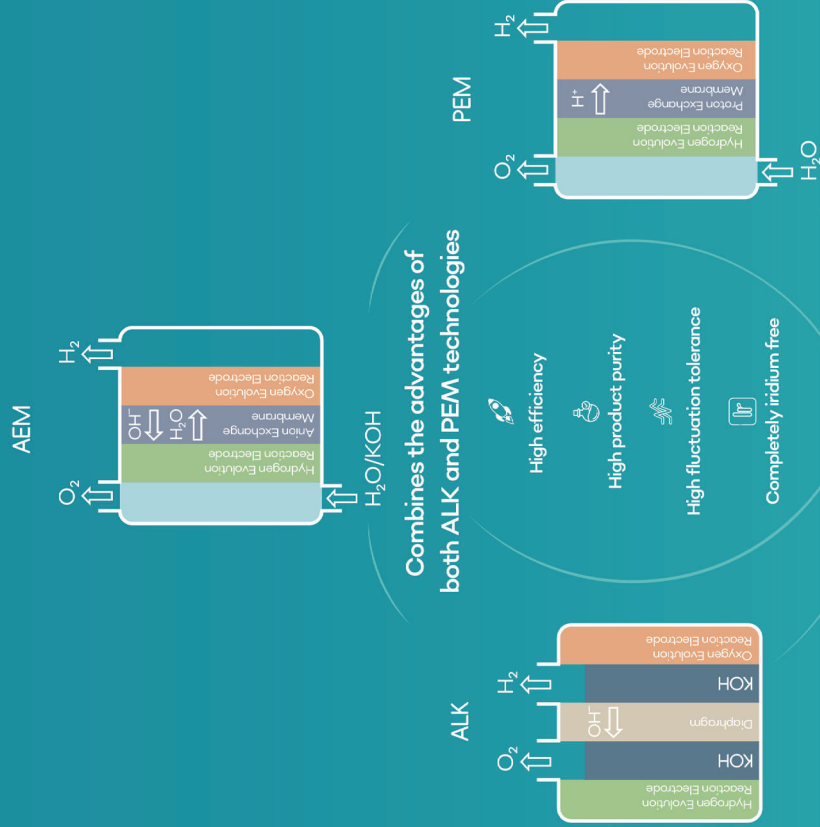
Integrated industry-academia model with 100% independently developed core technology.



MW

The company offers complete solutions — from catalysts to megawatt-scale systems.

Advantages of AEM



Cathode Catalyst



Low overpotential High stability High specific surface area



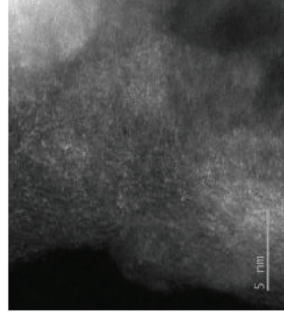
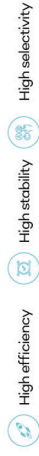
Anode Catalyst



High stability Superior performance Suitable for mass production



CO₂ Reduction Catalyst



Electrode Products



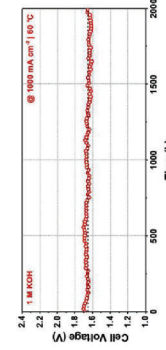
CCS Cathode



CCS Anode



CCM Electrode



Performance Test Based on CCM

Water Supply Unit

Technical Parameters

Capacity	55L
Outlet Flow Rate	2L/min
Water Input Pressure	≤0.6bar
Water Output Pressure	≤0.4bar
Water Input Requirements	Recommended ASTM D1193-06 Type II or ASTM D1607 with acidity <01 meq/L and conductivity <5µ S/cm
Power	198V-234VAC , 47-63Hz



LUMINOUS10

-  Ultra-portable
-  Fluctuation resistance
-  High reliability
-  High efficient



Hydrogen Drying Unit

Technical Parameters

Hydrogen Production Rate	25Nm ³ /h
Hydrogen Input Pressure	1.6bar
Hydrogen Output Purity	99999%
Hydrogen Input Purity	>999%
Power Consumption	200W
Power	198V-234VAC, 47-63Hz

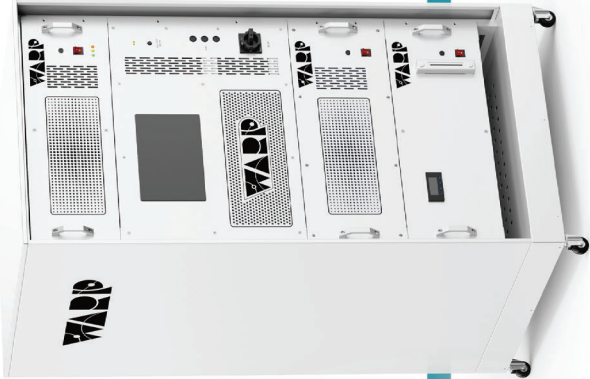


Technical Parameters

Hydrogen Production Rate	2Nm ³ /h
Hydrogen Output Pressure	1.6bar
Hydrogen Output Purity	99999% (With Optional Dryer)
Water Input Requirements	Recommended ASTM D1193-06 Type II or ASTM D1607 with acidity <01 meq/L and conductivity <5µS/cm
Power Consumption	43kWh/Nm ³
Hot Start Time	<60s
Cold Start Time	<20min

LUMINOUS10 ULTRA

10kW AEM H₂/O₂ All-in-One



- Fluctuation resistance
- High efficient
- High-purity hydrogen
- High-purity oxygen
- Easily stackable
- Highly integrated

Technical Parameters

Hydrogen Production Rate	2Nm ³ /h
Hydrogen Output Pressure	16barg
Hydrogen Output Purity	9999%
Oxygen Production Rate	1Nm ³ /h
Oxygen Output Pressure	1barg
Oxygen Output Purity	999%
Water Consumption	18L/h
Power Consumption	43kWh/Nm ³ (Beginning of Life (BOL) Under Normal Temperature, Rated Conditions and Full Load)

LUMINOUS1000

1MW AEM Integrated System



Technical Parameters

Hydrogen Production Rate	210Nm ³ /h (453kg/24h)
Hydrogen Output Pressure	≤16barg
Hydrogen Output Purity	99999%
Oxygen Production Rate	105Nm ³ /h
Oxygen Output Pressure	0 - 4barg
Oxygen Output Purity	999%
Operational Flexibility	1%-100% (Recommended adjustment to 10% - 100% for prolonged operation)
Power Consumption	43kWh/Nm ³ H ₂ (Beginning of Life (BOL) Under an Ambient Temperature of 15°C, Rated Conditions and Full Load)

Solution

The Green H₂ & O₂ Demonstration Project in a Digital Fish Barn

Most fishery-PV integrated projects currently have less than 40% photovoltaic utilization due to limited fish farm loads and grid constraints. WarpEnergy's water electrolysis system replaces costly traditional energy storage by converting surplus electricity into green hydrogen and oxygen. The hydrogen is sold externally for revenue, while oxygen is used on-site for aquaculture, reducing operating costs. This creates the world's first PV-to-hydrogen and oxygen-for-aquaculture dual-cycle system, achieving environmental, economic, and industrial synergy, and serving as a model for local renewable energy utilization.

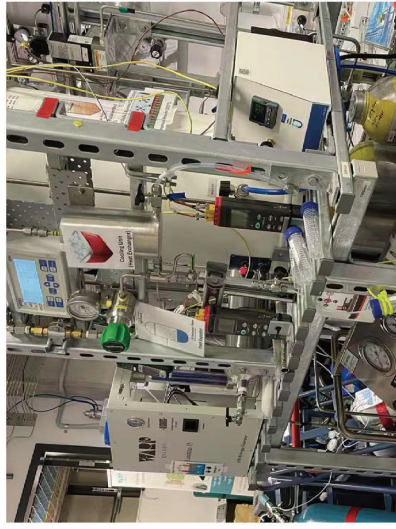


Plateau Hydrogen and Oxygen Supply Project



To overcome the challenges of harsh plateau environments, WarpEnergy's AEM electrolyzer system utilizes green electricity to produce both hydrogen and oxygen. The hydrogen is efficiently used through a combined heat and power (CHP) mode, while the oxygen serves as a highly valuable and scarce resource in high-altitude regions. This enables dual efficient conversion of energy and resources under extreme conditions.

Case Study: Green Hydrogen-to-Methanol Project in Australia



In April 2025, WarpEnergy's Luminous AEM system was integrated into Australia's green methanol project, supporting the ARC hydrogen economy program. Combining the advantages of ALK and PEM technologies, it enables efficient, low-cost green hydrogen production and has proven stable performance in overseas industrial operation.