

6MW CLASS AEM ELECTROLYSER

The Ansaldo Green Tech **6 MW AEM** electrolyser extends the strengths of the 1 MW platform into an industrial-scale solution designed for high hydrogen production, operational flexibility and long-term reliability. Its advanced AEM technology enables high-purity hydrogen, while maintaining stable and efficient performance.

Efficiency is ensured through optimized electrochemical cell definition, FEM-refined geometries and CFD-based electrolyte flow design. Continuous monitoring of key parameters of the process ensures safe and reliable operation. Electrical protection systems allow rapid emergency response, while mechanical stress-limiting strategies preserve membrane integrity.

The electrolyser offers rapid and efficient **load transitions**, supporting integration with intermittent renewable sources such as solar and wind. It is engineered for both greenfield and brownfield sites and can be delivered as a containerized plug-and-play modular solution for multi-MW hydrogen production systems. **Remote monitoring**, predictive diagnostics and minimized maintenance contribute to high operational readiness.

The system is designed with reduced dependency on **critical raw materials** and uses low-molarity electrolytes together with top tier membranes. Water consumption is minimized and partial-load performance remains excellent, making the system suitable for renewable-driven hydrogen production.



The 6 MW electrolyser incorporates a modular process skid integrating **multiple 1MW AEM stacks**, auxiliary subsystems and power conversion units. It provides scalable potential through clustered configurations, with hydrogen production capacity beyond 20 MW. PLC/SCADA control ensures coordinated management, remote access and data-driven diagnostics.

Maintenance is minimal and dedicated service packages can be provided based on Customer needs, leveraging remote monitoring and diagnostic of the whole system.

Electrolyser performance

Single Stack power consumption (BoL)	1 MW
System power consumption	6.6 MW
Hydrogen production (base load)	123 kgH2/h @30barg
Oxygen Production (base load)	990 kg/h @30barg
Energy consumption	<53,5 kWh/kgH2
Startup time (warm)	<2 min
Load range	15 - 100 %
Demi water consumption	1,1 cubic meter/h
Demi water quality	5µS/cm
Hydrogen quality	99,95% (higher purity achievable with dryer)
Operating temperature	-5 ÷ +40°C
Sound Pressure Level	85 dB(A)@1m
Footprint	12x16m



Scan the QR code for more information and the AEM Electrolysers video

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