

# TECH FACT SHEET

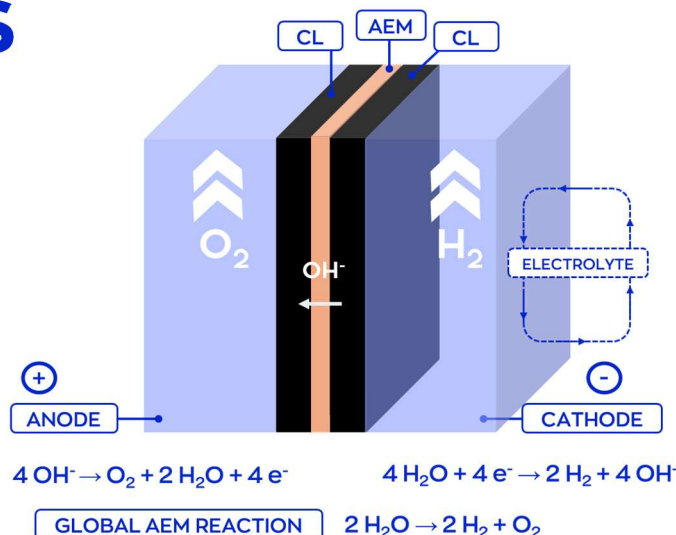
## AEM Electrolysis



Anion Exchange Membrane (AEM) electrolysis is a technology which is accumulating field data to go up the ladder of technology readiness level (TRL > 5), being considered in validation stage.

AEM ELX is based on alkaline chemistry but apply a **solid polymer electrolyte (AEM)**:

- For the charge carrier of the hydroxide ions (OH<sup>-</sup>)
- To act as the separator between the anode and the cathode



### TRL 5-6 – Validation stage



AEM is accumulating field data and moving toward pilot-scale demonstration

**Expected commercial readiness: 2027-2030**

### Active Players in Market

#### AEM ELX Systems

- Enapter (Italy)
- Hydrolite (Israel)
- EVE Hydrogen (China)...

#### AEM Materials

- Ionomr
- Ionysis
- Evonik...

### Adoption Barriers

1. Membrane durability under continuous or dynamic operation
2. Limited long-term field data (<5,000 hrs)
3. Supply chain for ionomer materials not yet mature
4. **Stack scale-up beyond 1 MW still unproven**

**≈ 52 kWh/kg**

ELX Stack Level

\*average value from multiple stacks

**99.9%**

H<sub>2</sub> Purity

\*possible to improve with purification equipment

**< 5000 h**

Demonstrated system

#### Best suited for

- Small-to-medium scale projects (kW to low MW)
- Projects prioritising low CAPEX over longevity
- R&D and pilot demonstration environments

#### Not recommended for

- Continuous baseload operation is required
- Long stack lifetime (>80,000 hrs) is contractually required
- Large-scale industrial H<sub>2</sub> supply (>5 MW)

Let's tick the boxes

# together

I know if AEM fits my operating profile and load factor

I have compared AEM vs PEM CAPEX/OPEX for my scale

I know which AEM suppliers match my procurement timeline

I have validated supplier warranties against my stack lifetime needs

**Ready to evaluate AEM ELX for your project?**

Fado Energy provides independent technology assessment, supplier benchmarking and procurement advisory – tailored to your application.

**Talk to our team**