

# Asahi Kasei's Alkaline Water Electrolyzer (AWE) for Green Hydrogen

**Green Solution Project**  
**Asahi KASEI Corporation**



# Asahi Kasei at a glance

**Founded**  
1922



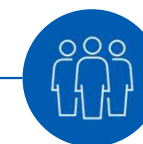
**Annual sales**  
USD 18.5 bn\*



**Worldwide presence**  
Consolidated subsidiaries  
287 companies 20 countries



**Employees**  
49,295



Global Headquarters  
Tokyo Japan

## 3 business sectors: material, homes and health care

Percentage of annual revenue

**46%**  
**Material**

Fibers and textiles  
Chemicals/plastics  
Electronics

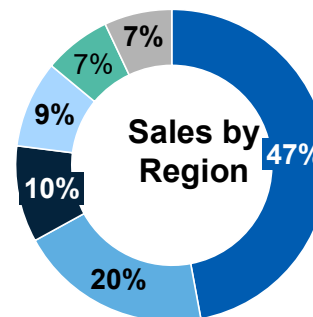
**34**  
**Homes**

Homes  
Construction materials

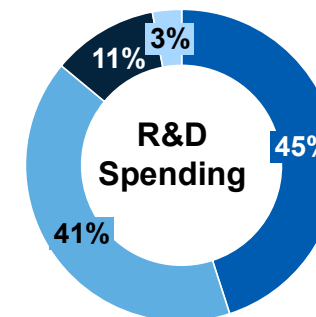
**20%**  
**Health Care**

Pharmaceuticals  
Medical care  
Acute medical care

## Creating for tomorrow - Company Slogan



■ Japan      ■ China  
■ North America      ■ Europe  
■ Asia



■ Healthcare      ■ Homes  
■ Material  
■ Corporate R&D

\* Calculated based on an exchange rate of 1 USD = 150 JPY <sup>2</sup>



1. FH2R is a project commissioned by the New Energy and Industrial Technology Development Organization (NEDO). Aqualyzer™

# History of Asahi Kasei's Electrolyzer



1923

Started ammonia production using hydrogen from Water Electrolysis. Electricity was supplied by our own hydroelectric power plant.



1975

Launched Chlor-Alkali Electrolyzer system using Ion Exchange Membranes



2010

Started the development of the Alkaline Water Electrolyzer (AWE) system based on our Chlor-Alkali know-how

2020

Joined Germany ALIGN-CCUS project as an AWE supplier  
Started 10MW scale AWE to FH2R<sup>1</sup> project in Japan



2024

Started the operation of AWE pilot plant in Kawasaki to demonstrate the multi-modules control system

Collaborated with DeNora on the development and sales of a containerized AWE system.

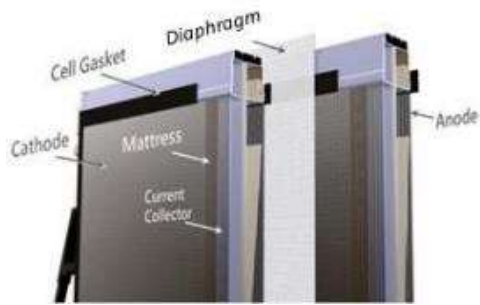


2025 **Launch Product**

# Easy expandability of Aqualyzer 10MW module



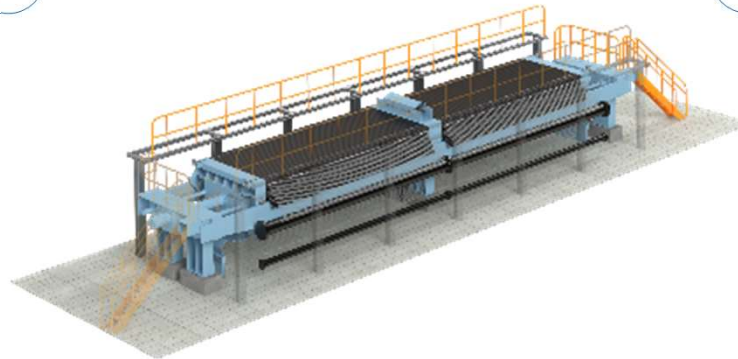
Cell



Basic unit of electrolyzer



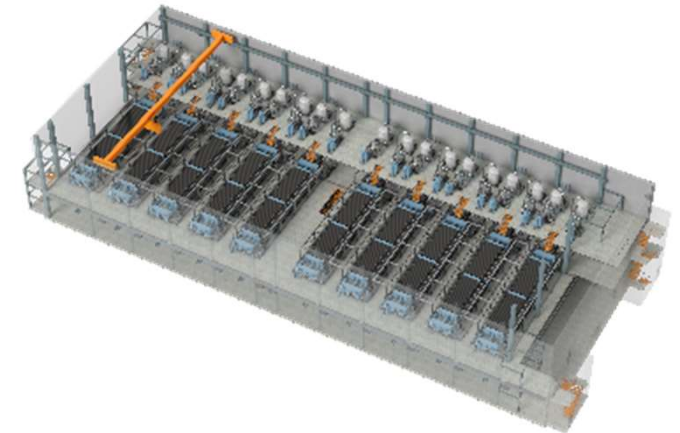
10 MW module



10 MW modules can be used individually or as a standard building block for larger systems



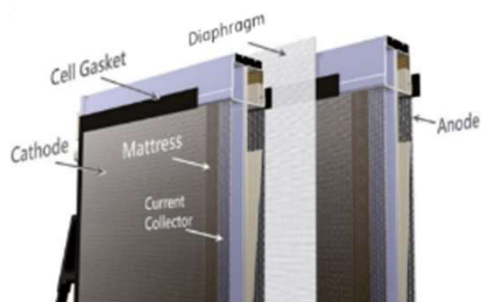
100 MW multi modules



Expandable by connecting the 10 MW modules

# Ongoing RD&D

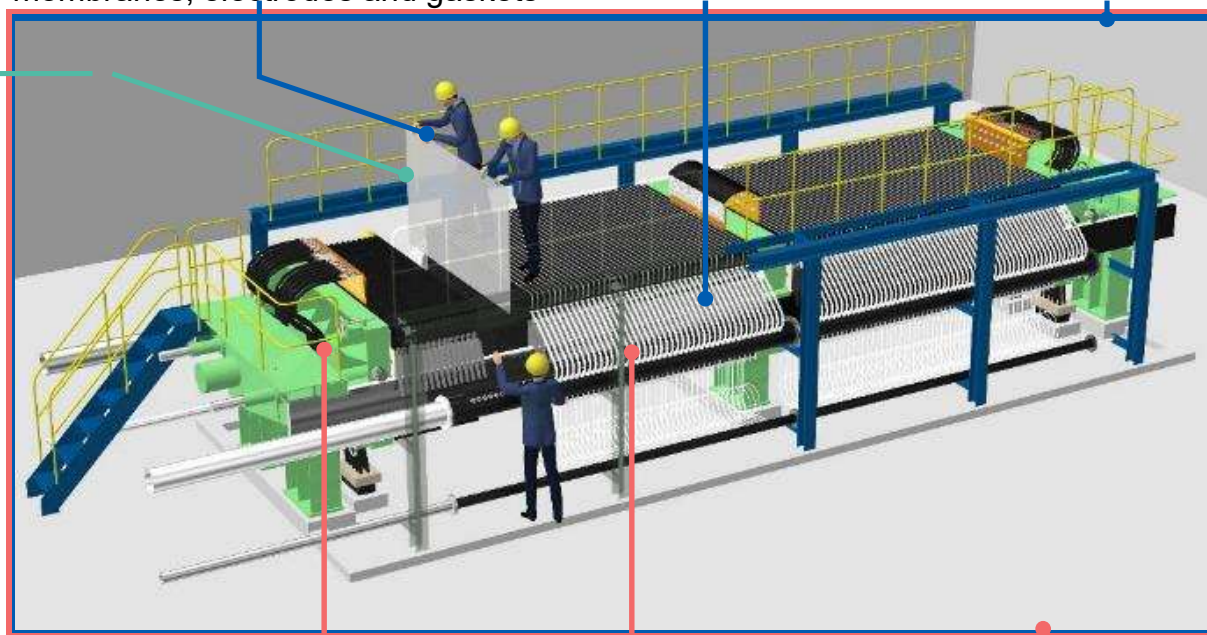
## Cell design and performance improvement



- ✓ Improved cell cost performance
- ✓ Improved internal circulation and uniformity
- ✓ Optimized with diaphragms, membranes, electrodes, and gas/liquid separation

## Downtime reduction

Easy replacement of diaphragms, membranes, electrodes and gaskets | Hose connection | Automatic sequence



## Enhanced safety

Automatic lock adjustment | Predictive maintenance | **R2** | Performance monitoring and optimized operation control

**Asahi Kasei is continually making improvements to the entire electrolyzer system to reduce the total cost of ownership, improve safety and provide a “one-stop solution”**



**AsahiKASEI**

*Creating for Tomorrow*

