

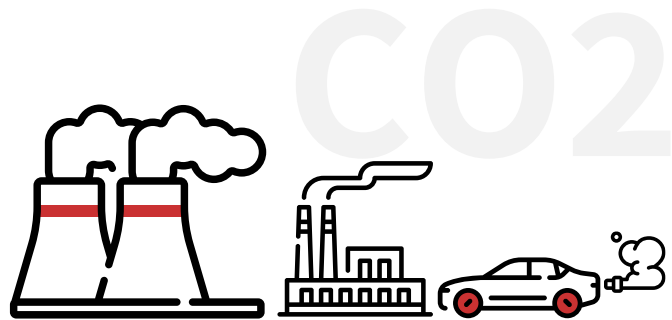


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# Company Introduction

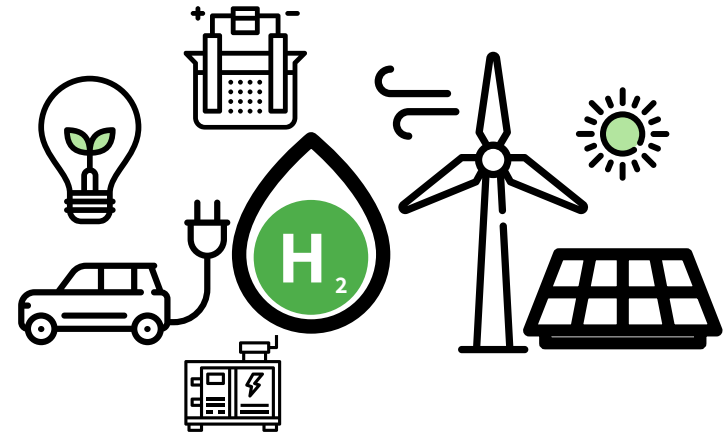
Dr. Ervin Tal-Gutelmacher - CEO

# Energy Transition| From Yesterday's World to the **New World**



## Yesterday's World

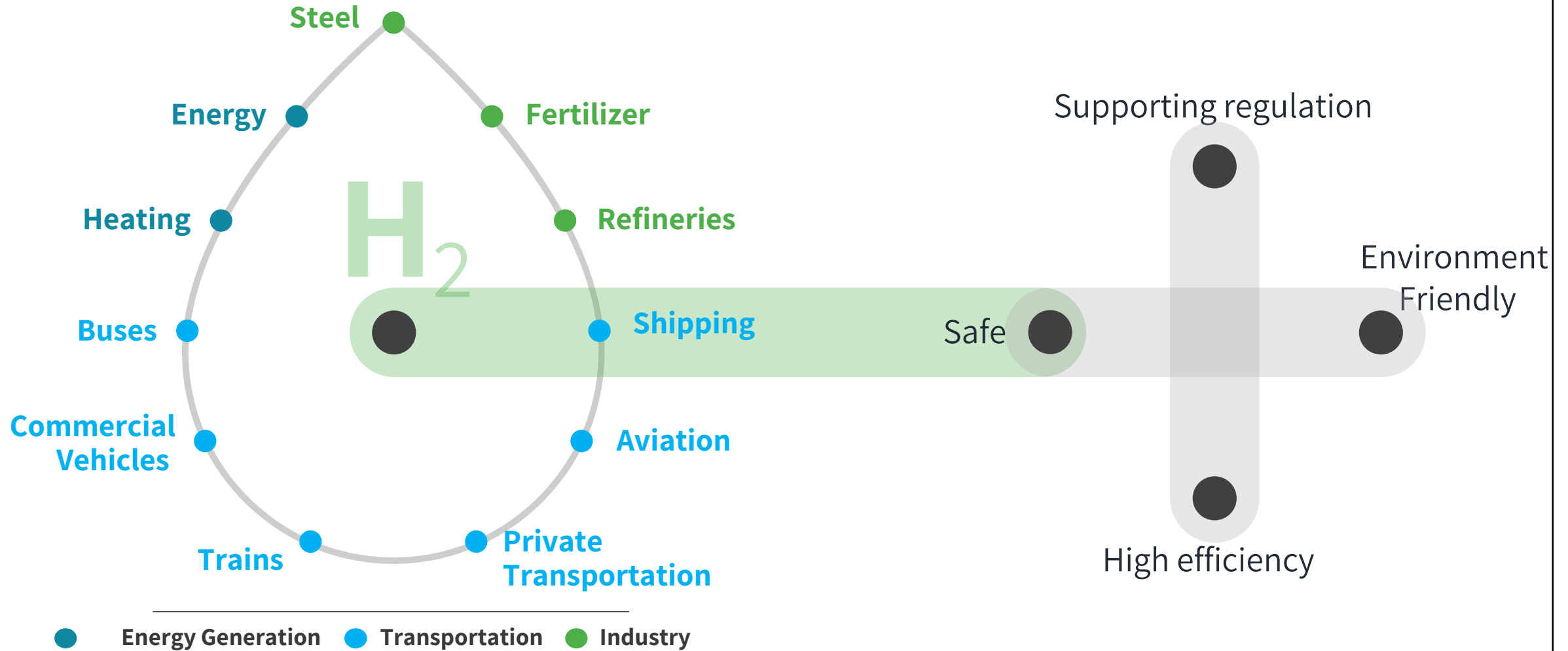
Fossil Fuels Energy



## New World

Green Energy: Wind. Solar. Hydrogen. Hydro

# Hydrogen – Multiple usages| Sector Coupling



# Why Hydrogen Now?



## Policy

Net Zero Ambition

**75** countries,

**50%** of world's GDP

CO<sub>2</sub> Pricing Mechanisms

**49** countries

**80%** of world's GDP



## Market Opportunity

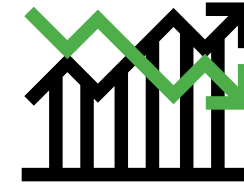
H<sub>2</sub> Investments

**\$700B** Through 2030\*

H<sub>2</sub> Market

**\$130B/Y** in 2021

**\$12,000B/Y** in 2050



## Economy of Scale

Cost of Renewable

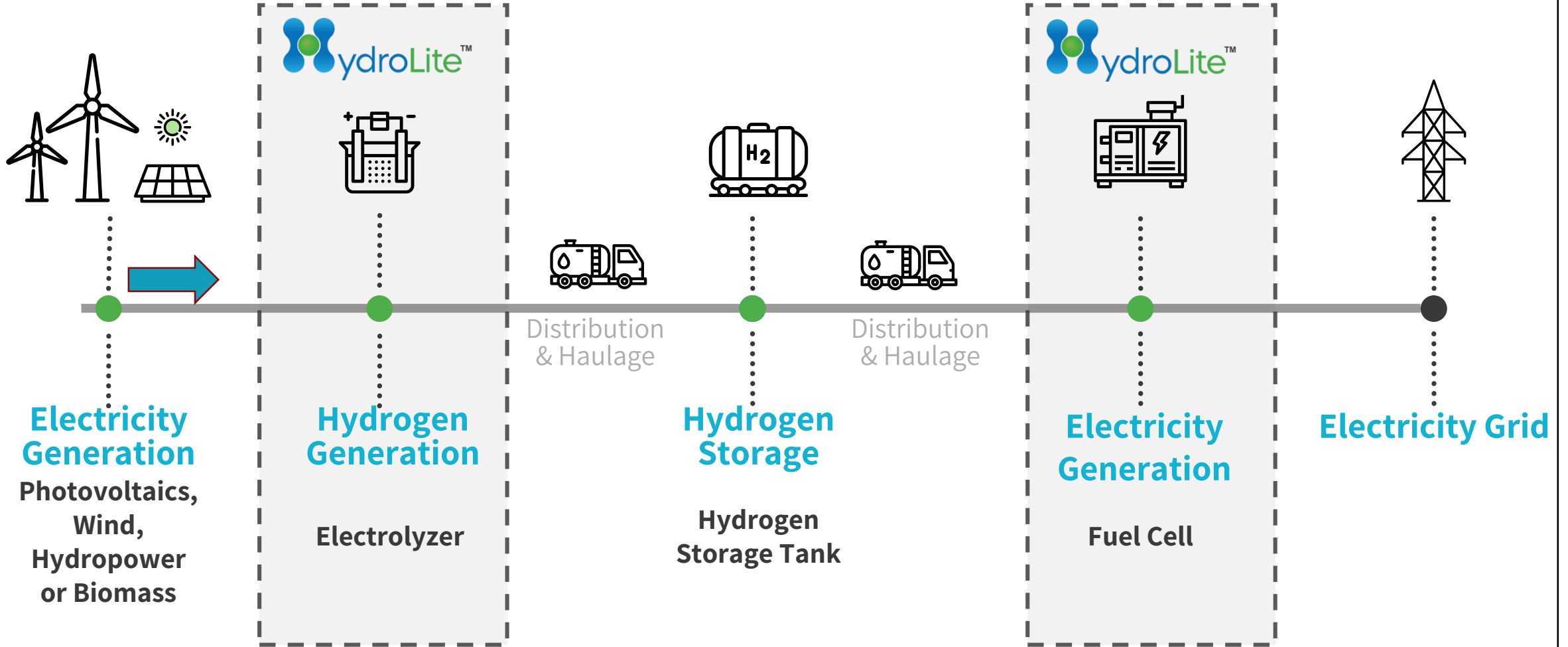
**KWh ~\$0.03** today

Cost of Hydrogen

**Kg ~\$2.5** in 2030

*\*Sources: McKinsey and Goldman Sachs*

# Hydrolite's offering within the hydrogen value chain



# Hydrolite deep tech | AEM experts since 2008



Fully owned by Elbit Systems



## \$55M

Invested to date



## 71

 Patents  
56 granted

## 25

 HC  
5 PhDs, 12Msc & Eng.

## 1,500

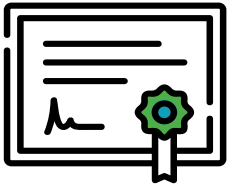
 SQM FACILITY  
R&D & fully equipped H2 Test facility

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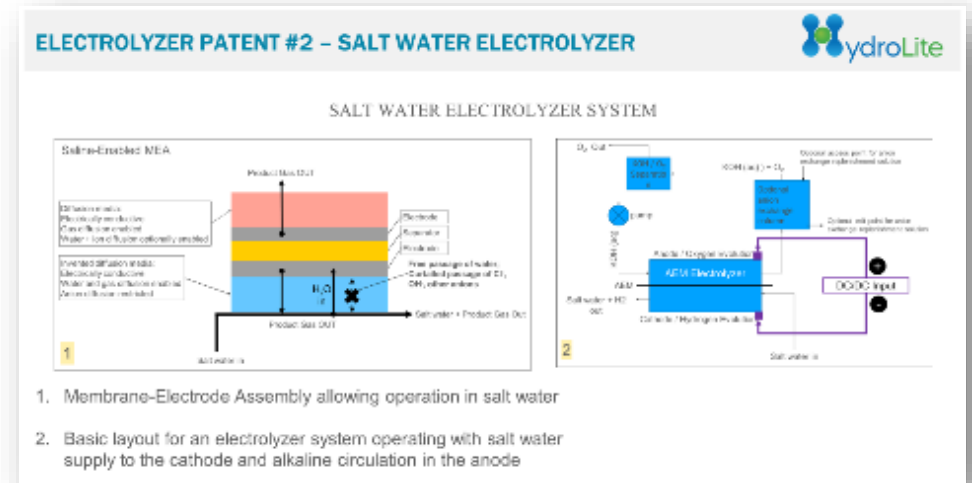
/// POWERING SUSTAINABLE SOCIETY

# The company has 71 patents | 56 granted worldwide



IP portfolio covers the whole domain from core materials and component to stack & system level:

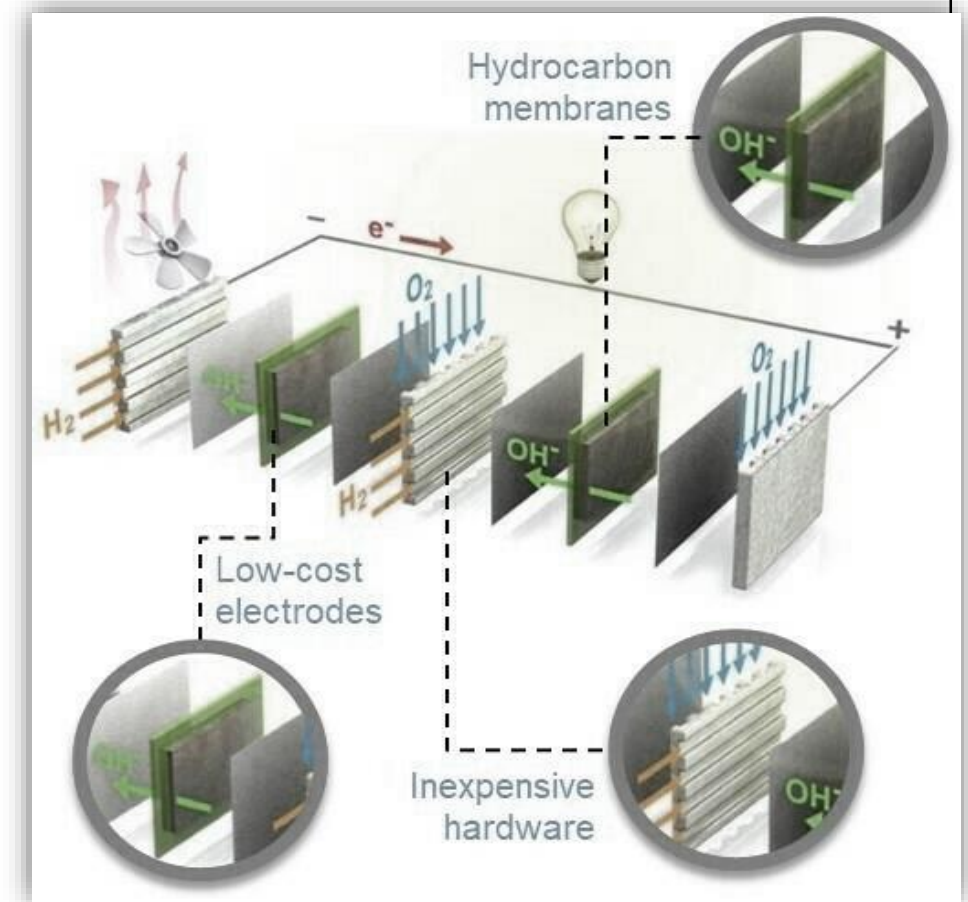
- Membranes
- Catalysts
- Methods for making of a Catalyst Coated Membrane
- Novel MEAs for AEM devices
- Modes of operation (flexible, intermittence)
- Membrane/MEA manufacture



# AEM Technology | Breakthrough Technology

## AEM Tech Advantages

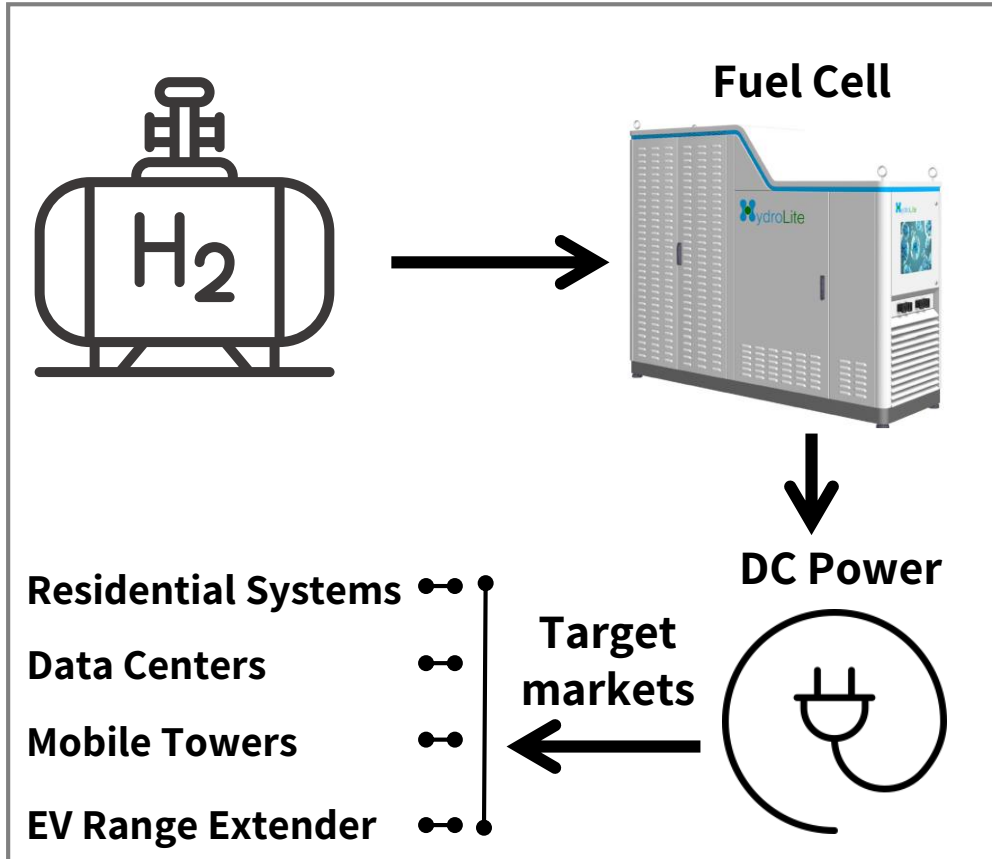
- 💧 **Low-Cost Technology** | Utilizing available low-cost materials
- 💧 **Performance** | High efficiency, dynamic behavior, fast start up
- 💧 **Low Temperature** | small and simple system
- 💧 **Water & Air** | Without unique treatment, use of tap/brine water





# Our AEM Fuel Cell | High performance, Low cost

## Fuel Cell – for Stationary applications



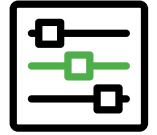
### High Performance

5-10 kW Device  
50%-60% Efficiency



### Low Capex & Opex

As a result of our unique technology



### Modular

Scalable >>  
up to 100kW building blocks



### Long backup time

Up to several days



### Lifetime

10 -15 Years



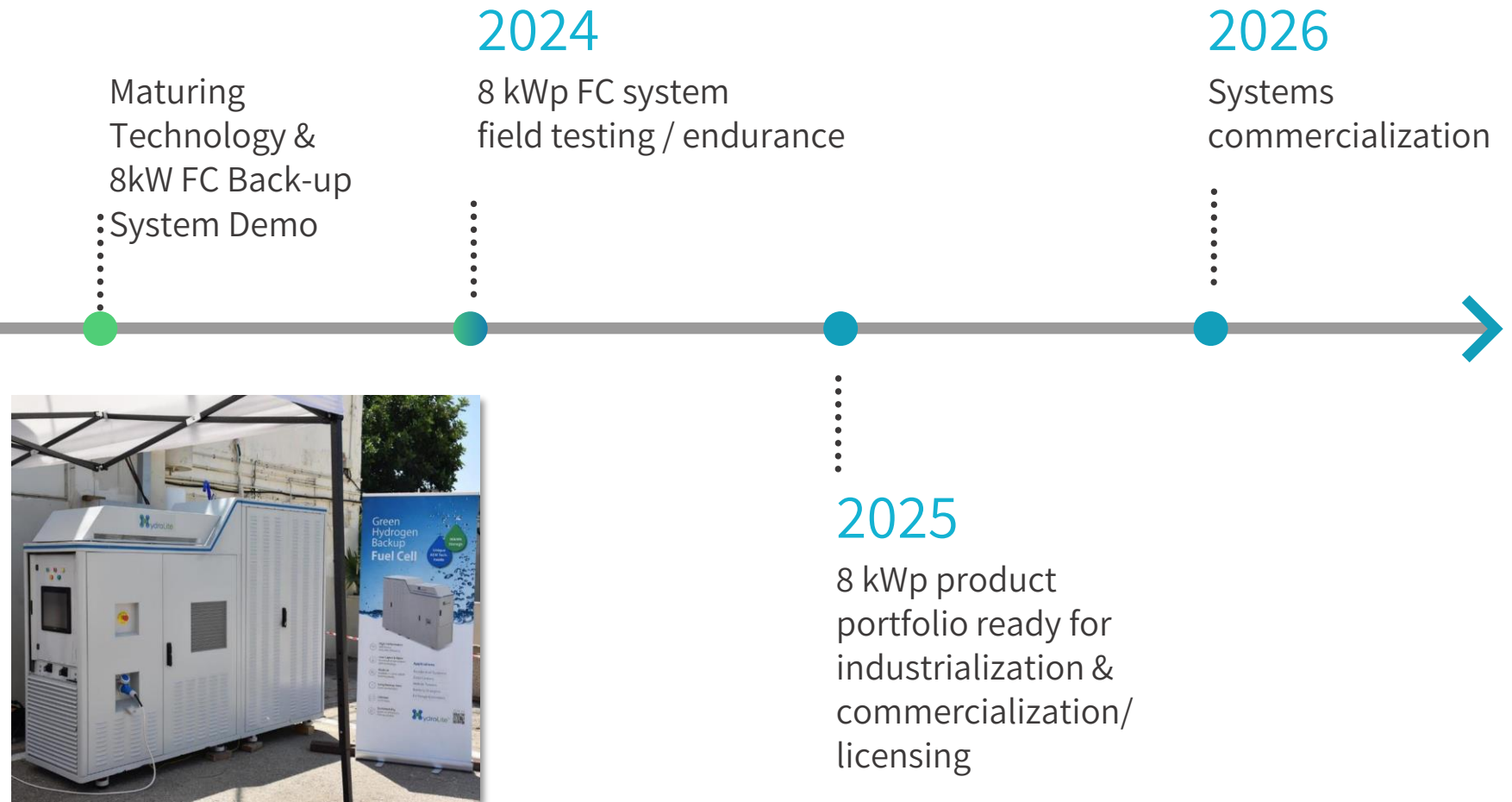
### Sustainability

Quiet, no emissions, 95% recyclable

# Fuel Cell | Road Map Towards Commercialization

FUEL CELL

ROADMAP



# Electrolyzer | Competitive differentiators

Business differentiators



## Low TCO

Disruptive membrane  
<90% cost reduction



## High efficiency Superior dynamics

<45 kWh/ Kg of H<sub>2</sub>  
Up to 3x current density



## Water quality

Low requirements tap,  
brine water  
unlike PEM which  
requires deionized water

Add-on differentiators



## MW scale AEM stack

250kw compact stack



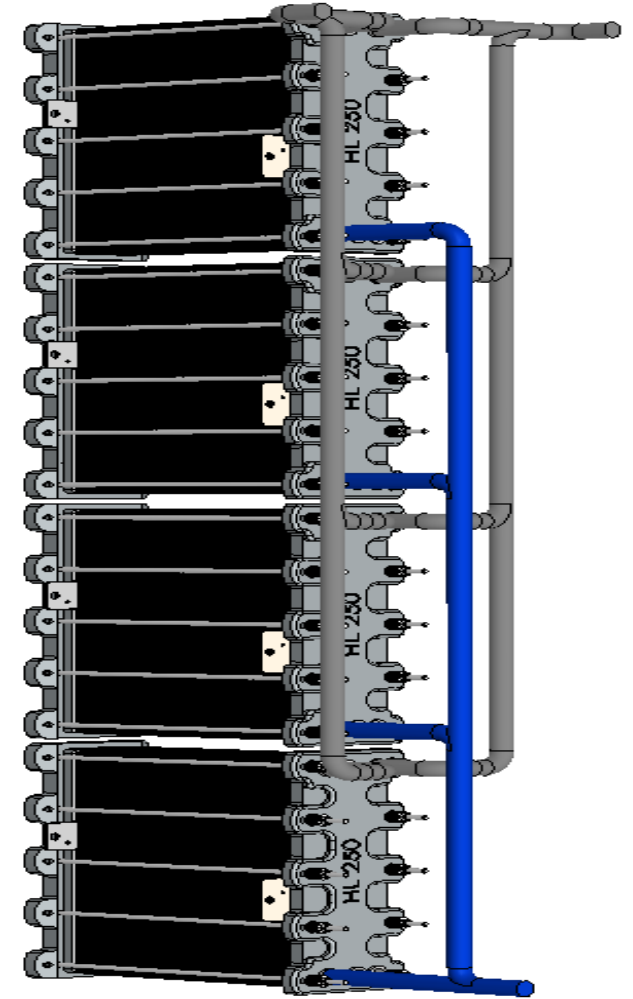
## Sustainability

PFAS free membrane,  
stable & recyclable,  
non PGM/CRM

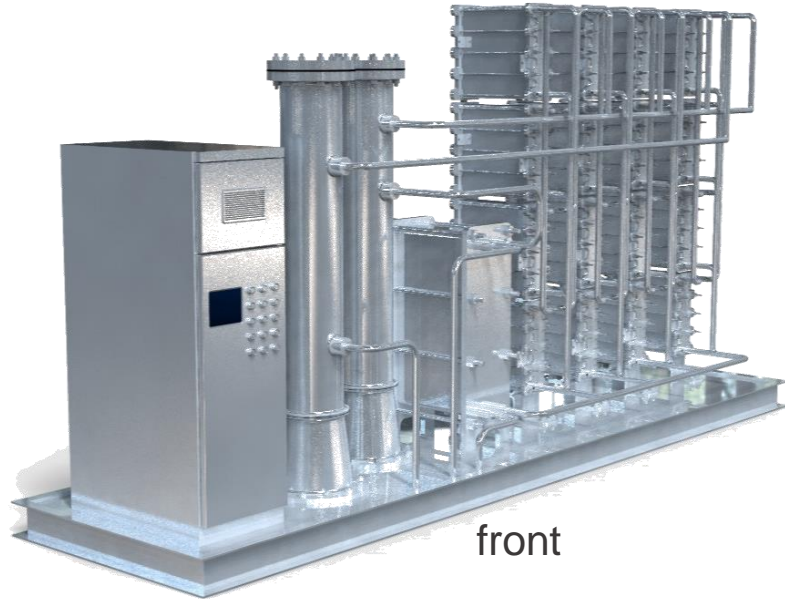


## AEM expertise

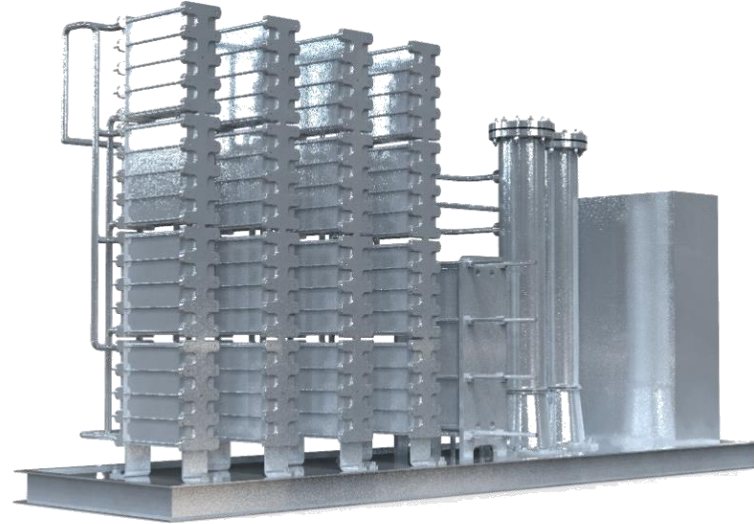
Over 15 years of  
technology development  
and proven field tests



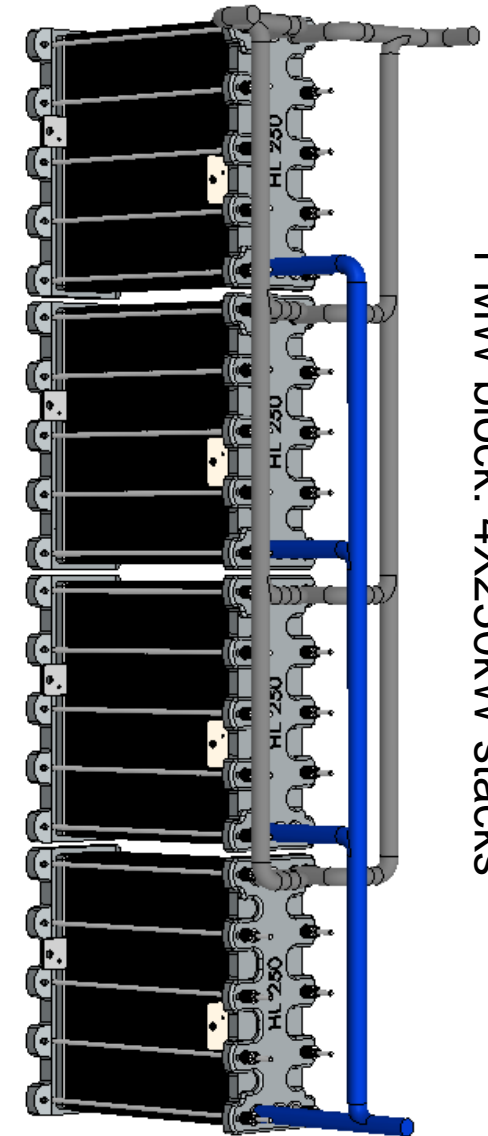
# Electrolyzer | Stack business roadmap



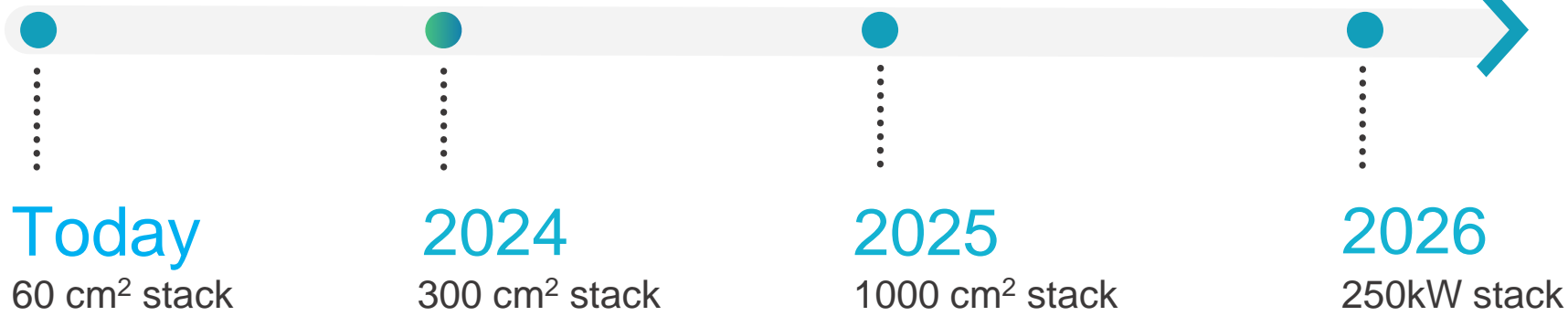
front



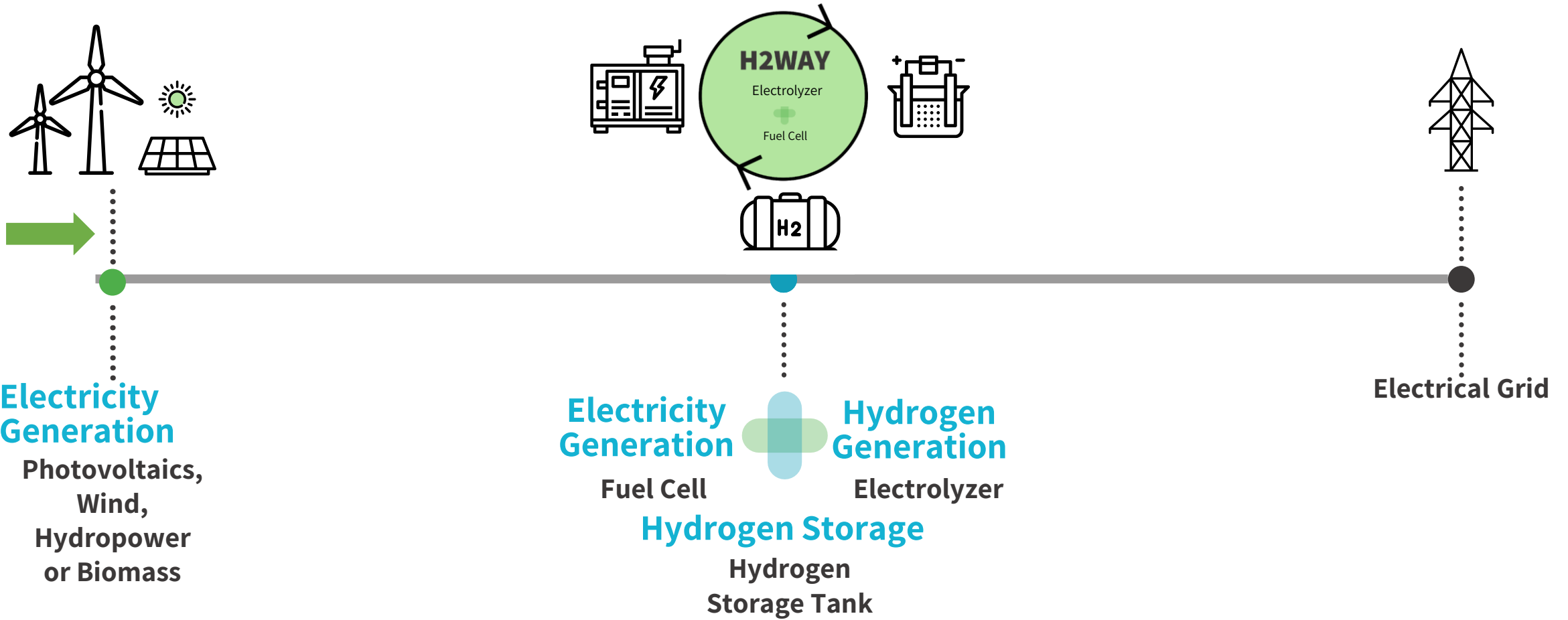
back



1 MW block: 4X250kW stacks



# Distributed Hydrogen | The H<sub>2</sub>WAY



# H2WAY™ | Bi-directional revolutionary AEM Fuel Cell & Electrolyzer device

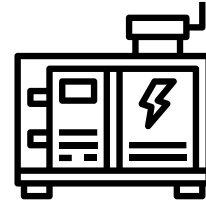
**H2WAY™ Combines**  
Two components to one system

**H2WAY™ Eliminates**  
The need for distribution and haulage

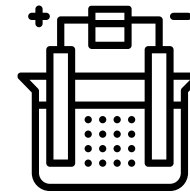
**H2WAY™ Dual Purpose**  
Provides backup and generates hydrogen

**H2WAY™ Novel Solution**  
Based on years of research with barriers to entry  
to create a unique Membrane-Electrode Assembly (MEA)

Fuel Cell



Electrolyzer



# Competitive Landscape

| Unique **standalone** market position

## Alkaline

## PEM

## Solid Oxide / Other

## AEM

Fuel Cell



Electrolyzer



Fuel Cell & Electrolyzer



# Partnership with Hydrolite



A multi-disciplinary **talented and innovative cohesive team** with over 12 years of R&D experience



**71 patents** that cover the whole domain

**Standalone market position**  
Fuel cell & Electrolyzer



State of the art **advanced laboratory** in Israel



**Owned by Elbit Systems** a well-established engineering tradition with a strong presence Worldwide

**Hydrolite** is searching for **Partners** with an established clear long-term vision towards the hydrogen economy and **looking for next generation of hydrogen technology**





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