

## SOLID OXIDE ELECTROLYZERS

# Sunfire-HyLink SOEC

Sunfire's solid oxide electrolyzers (SOEC) are highly efficient enabling lowest LCOH. Leading the way in SOEC development, Sunfire has implemented the most industrial demonstration projects worldwide.



The most powerful standardized SOEC module for large-scale 100+ MW applications



Skid based und pre-assembled for minimal installation effort



World record efficiency of 88%<sub>LHV/AC</sub> for the 3rd generation Sunfire-HyLink SOEC<sup>1)</sup>



Outdoor installation saving building and HVAC costs and offering minimal footprint



Constant efficiency and constant, guaranteed nameplate capacity<sup>2)</sup>



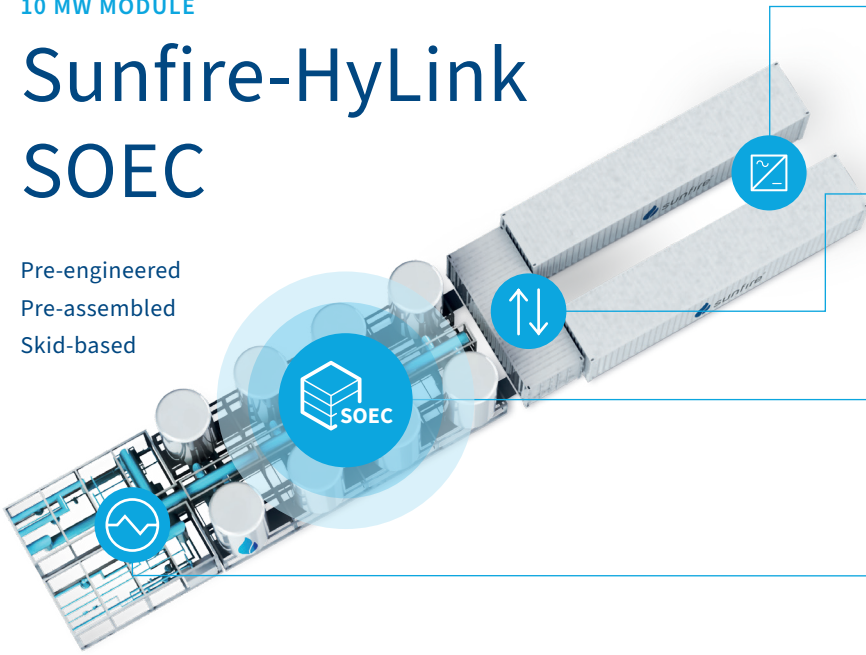
For large-scale industrial applications, such as:

- Sustainable aviation fuel
- Green ammonia
- Green methanol
- Green methane
- Green refining
- Green steel

10 MW MODULE

# Sunfire-HyLink SOEC

Pre-engineered  
Pre-assembled  
Skid-based



## Power Supply Unit

- Highly-efficient AC-DC conversion
- Grid conformity

## Module Control Unit

- Fully automated, remote-controlled operation
- LV power distribution and control logic

## 10 MW SOEC Stack Unit

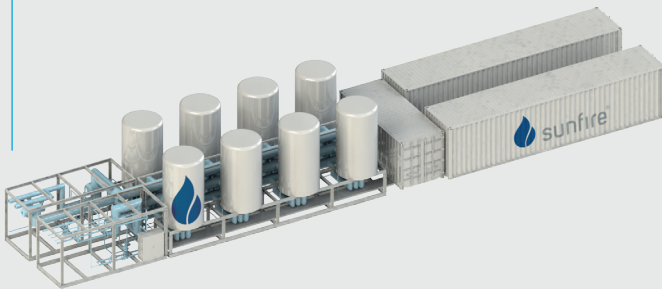
- 8 x 1.3 MW plug and play hotboxes
- Efficient heat recuperation within

## Coldbox

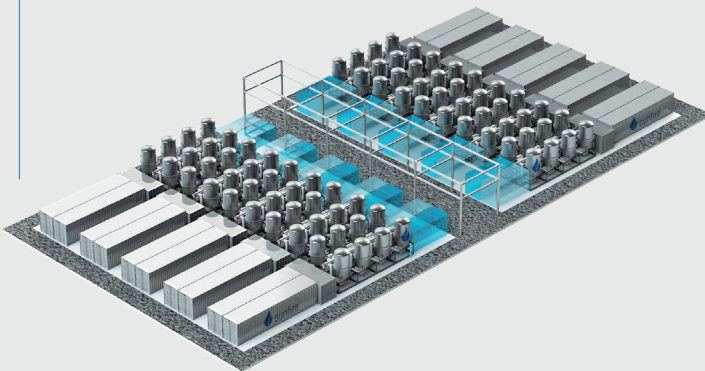
- Feed gas control
- Product gas cooling

## TECHNICAL SPECIFICATIONS

### 10 MW Module



### 100+ MW



Schematic graphic of a 100 MW plant.

## 99.9%

Hydrogen purity after drying, before cleaning<sup>1)</sup>  
(ISO 14687 Grade B)

## 88%<sub>LHV/AC</sub>

Expected record efficiency Sunfire-HyLink SOEC GEN 3  
Constant efficiency and constant, guaranteed  
nameplate capacity<sup>2)</sup>

## Hydrogen Production

Net production rate <sup>3)</sup>	284 kg/h · 3,153 Nm <sup>3</sup> /h
Flexibility <sup>4)</sup>	50 – 100 % and 10%/min
Delivery pressure	0.1 bar(g)
Oxygen	2,251 kg/h · 99.9% purity

## Electrical Efficiency

AC-Power	10.7 MW
Specific consumption	3.40 kWh/Nm <sup>3</sup> · 37.8 kWh/kg
Hot standby	170 kW

## Feed Gas

Steam consumption	12 kg/kg H <sub>2</sub>
Condition	> 3 bar(g) · > 150 °C
Composition	95 mol% H <sub>2</sub> O · 5 mol% H <sub>2</sub>

## Hardware

Stack service life	4 years
Footprint <sup>5)</sup>	24 m <sup>2</sup> /MW

All specifications refer to our product: Sunfire-HyLink SOEC GEN 3, graphics and illustrations may vary, some components and specifications in this illustration are tailored to customer and project requirements. Information in this version (08 2024) is valid until the next version.

1) Product gas is water-saturated with <0.1 mol/mol depending on product gas temperature. 2) Through full LTSA (Long-Term Service Agreement) offering incl. all required stack replacements. 3) Total H<sub>2</sub> production minus recycle stream required for feed gas. 4) Dynamic range of one module. So, in any plant the min load would be 5 MW. 5) Net module footprint (34 x 7.5 m).