

RENEWABLE SYNGAS FOR E-FUEL AND CHEMICALS PRODUCTION

SUNFIRE-SYNLINK SOEC**PRODUCT**

Sunfire-SynLink SOEC is the world-leading high-temperature electrolysis solution based on solid oxide cells. The electrolyzer uses steam and CO₂ as feed to produce renewable syngas in only one process step. Smart integration of waste heat and CO₂ sources reduces electricity demand while flexible scaling enables a gradual phase-in of renewable syngas into existing infrastructures and processes.

APPLICATIONS

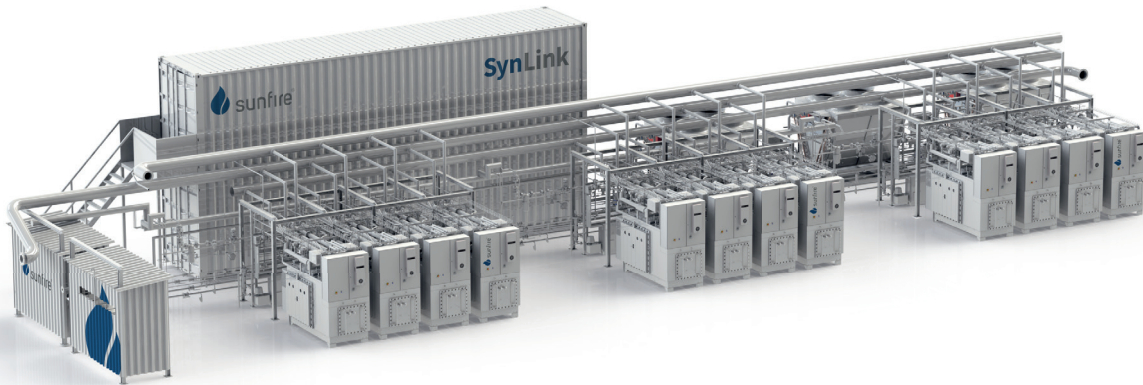
The electrolyzer provides renewable syngas as an essential feedstock for producing a variety of hydrocarbon products.

- + e-Fuel: Diesel, gasoline, jet fuel, marine diesel oil, etc.
- + Chemicals: Agrochemicals, pharmaceuticals, cosmetics, fine chemicals, etc.

CORE ADVANTAGES

- + **Co-electrolysis**
High efficiency one-step conversion of CO₂ & water yields lowest syngas costs
- + **Versatility**
Supply of a broad range of H₂:CO molar ratios
- + **Reliability**
Certified electrolyzers with proven long-term operation
- + **Flexibility**
Modular design simplifies scaling to any desired electrolysis capacity
- + **Sustainability**
No use of PGM-based materials in electrolyzer production

SUNFIRE-SYNLINK SOEC – TECHNICAL DATA



SYNLINK SOEC

Syngas production	
Net production rate	750 Nm ³ /h
Production capacity dynamic range	5 % ... 100 %
Hot idle ramp time	< 10 min
Delivery pressure	0 bar(g)
Available H ₂ :CO ratios	1.5 ... 3.5
Power input and electrical efficiency	
System power rating (AC)	2,890 kW
Specific power consumption at stack level (DC)	3.17 kWh/Nm ³
Specific power consumption at system level (AC)	3.85 kWh/Nm ³
System electrical efficiency*	82 %
Steam input	
Consumption	560 kg/h
Temperature	150 °C ... 200 °C
Pressure	3.5 bar (g) ... 5.5 bar (g)
CO ₂ input	
Consumption	730 kg/h
Temperature	0 °C ... 40 °C
Pressure	6 bar (g) ... 8 bar (g)
Other specs	
Footprint**	~ 300 m ²
Ambient temperature	-20 °C ... 40 °C

* Lower heating value of syngas (H₂:CO = 2) referred to AC power input

** Average space requirement for a 2.89 MW system comprising all auxiliary systems

Disclaimer: For illustrative purposes, all above values are based on a syngas ratio (H₂:CO) of 2 and 100% pure CO₂ feed. Sunfire-Synlink is capable to deliver different syngas ratios and to process a wide range of CO₂ feedstocks, e.g. shares of hydrocarbons, CO, H₂, and H₂O. Any potential deviation of CO₂ feed will be evaluated by Sunfire.