

Solid Oxide Fuel Cells and Electrolyzers from the largest stack production facility in Europe

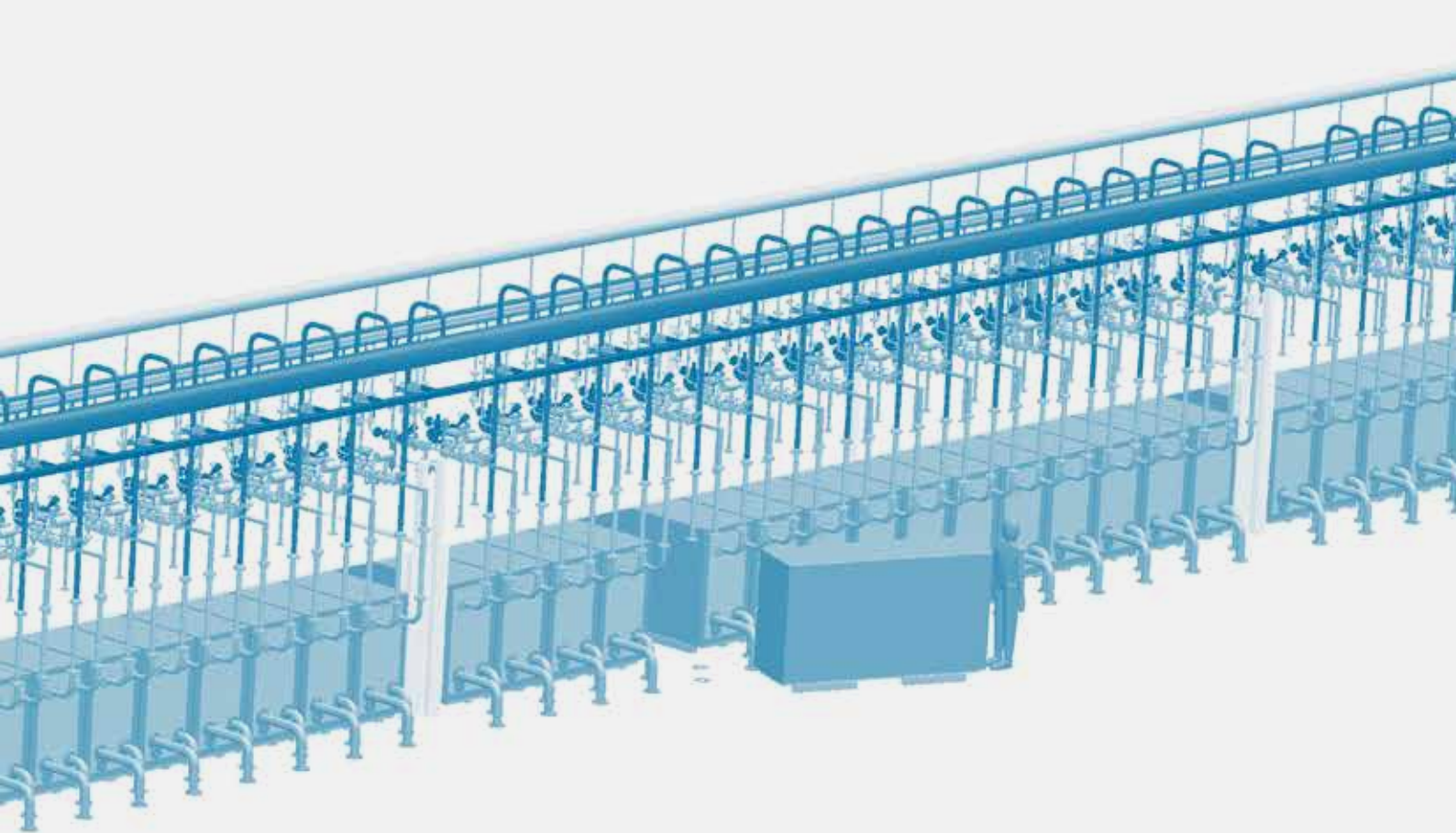
SolydEra

SolydEra is a key world player in the market of Solid Oxide Cells, Stacks and Solutions, with an annual production capacity of 25MW SOFC (75MW SOE) on its industrial site in Pergine Valsugana, Italy. Our Solid Oxide Technology has a proven track record in the field and delivers top in class performance and durability in both fuel cell and electrolysis mode. Our highly efficient solid oxide stacks can be integrated into systems from a few kW to MW sizes.

Would you like to know more? Please contact us!



SolydEra Reversible Electrolyzer Array - rECA



We stack it.

SolydEra SpA
Via ai Manfredi 24
Frazione Ciré

38057 Pergine
Valsugana (TN)
Italy

+39 0461 1755 068
info@solydEra.com
www.solydEra.com

SolydEra rECA Array – Reversible Electrolysis

Technical data

General

rECA Array	
Stack platform	G8X
Module type	EMX-125
Control	Individual EMX module control Array Master Control
Safety systems	Safety PLC
Operation	Electrolysis + Power Generation
Installation	Indoor / Sheltered
Layout	modular, 16 modules for 2 MW
Footprint	< 90m ² /MW

Performance data

	rECA-1	rECA-2
ELECTROLYSIS		
Electrical		
Nominal DC power	0.8 MW	1.6 MW
Max DC power*	1.00 MW	2.00 MW
Forward compatibility**	1.25 MW	2.50 MW
System Efficiency		
Specific consumption System*** (AC)	37-39 kWh/kg	
Specific consumption Stack*** (DC)	34.6 kWh/kg	
Steam conversion nominal	80%-90%	
Product		
Nominal H ₂ production	23 kg/h	46 kg/h
Max H ₂ production	28.6 kg/h	57.2 kg/h
Delivery pressure	< 25 mbar (g)	
Delivery temperature	< 200°C	
Steam		
Steam pressure	2.6 bar(g)	
Steam temperature	150-200°C	
Steam consumption	10-11 kg _{H2O} /kg _{H2}	
Dynamics		
Modulation range	2.5%-100%	
Ramp-up/down time****	< 1 min	
Temperature		
Operating temperature	650-800°C	
POWER GENERATION		
Electrical		
Max DC power	240kW	480 kW
Fuel		
Hydrogen-rich gas	> 50% H ₂	
Pressure	6 bar	
System Efficiency		
Electrical Efficiency	> 50% LHV	

* Other configurations possible on request

** Forward compatibility to 2nd generation stacks

*** Steam generation excluded

**** From 0-100% capacity at nominal temperature, if not limited by downstream/upstream systems

Advantages

- Performances
 - High system efficiency
 - High steam conversion
- Robustness
- Fast modulation
- Hot-swappable EMX modules
- Versatile customer process integration
- Optional reversible operation
- Centralized auxiliaries for multi-array arrangements
- Customizable

Application Areas

- Hydrogen production
- Ammonia production
- Synthetic fuels
- Co-electrolysis
- Grid services