



Bloomenergy[®]

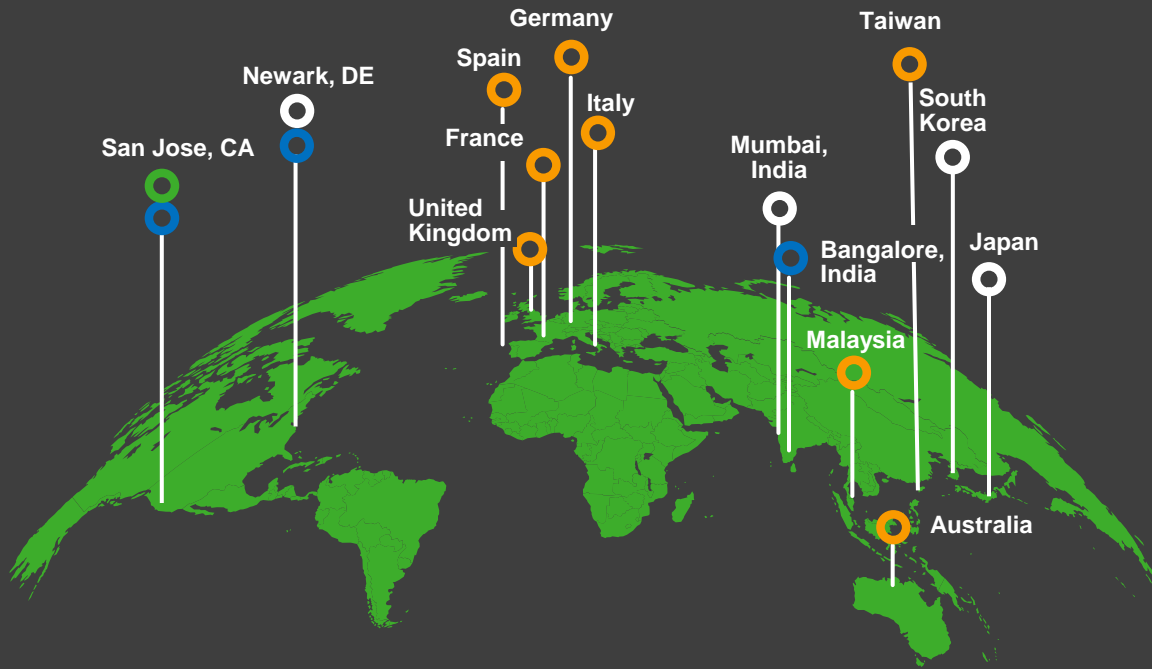
Bloom Electrolyzer[™] AEA discussion

November 2023

Bloomenergy

BLOOM ENERGY AT A GLANCE

Bloomenergy®



● Headquarters ● Office Locations ● Manufacturing/R&D ● Business Development

~\$1.2bn

2022 Revenue

~20 Billion kWh

Produced without
Combustion

+ 1GW

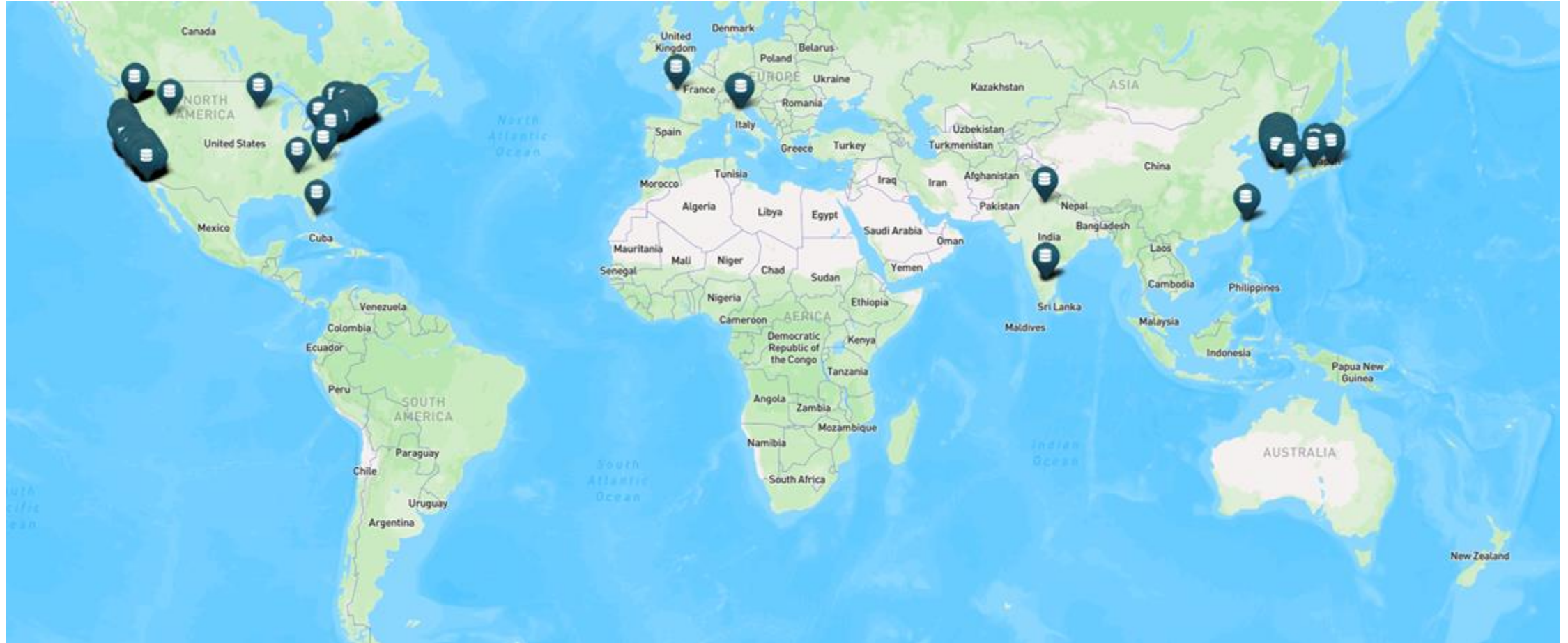
Deployed

~1,000 Installations

~150 Microgrids

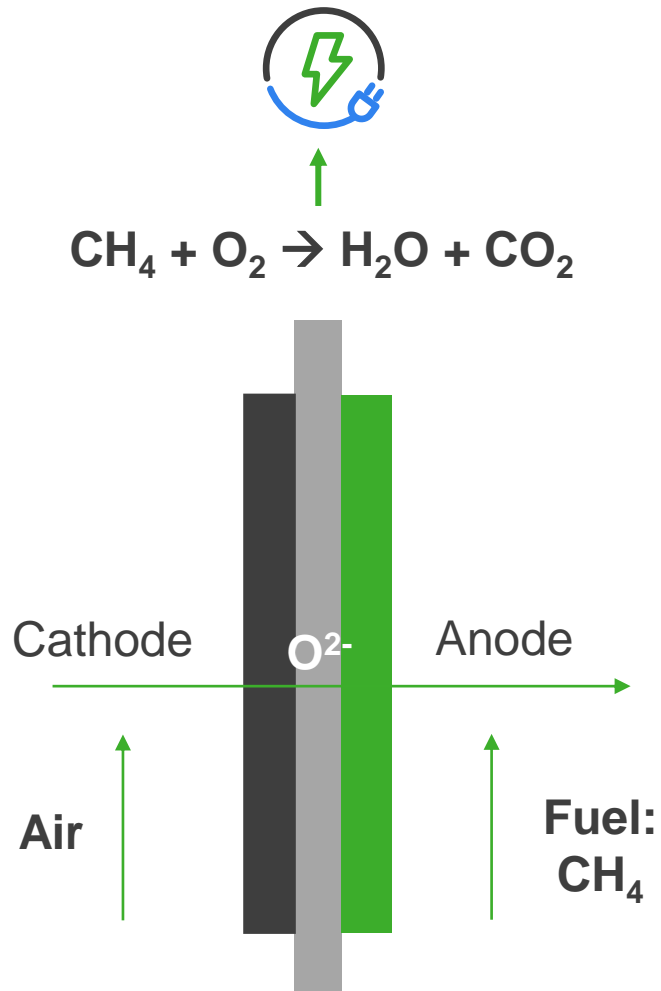
GLOBAL DEPLOYMENTS

BE
LISTED
NYSE

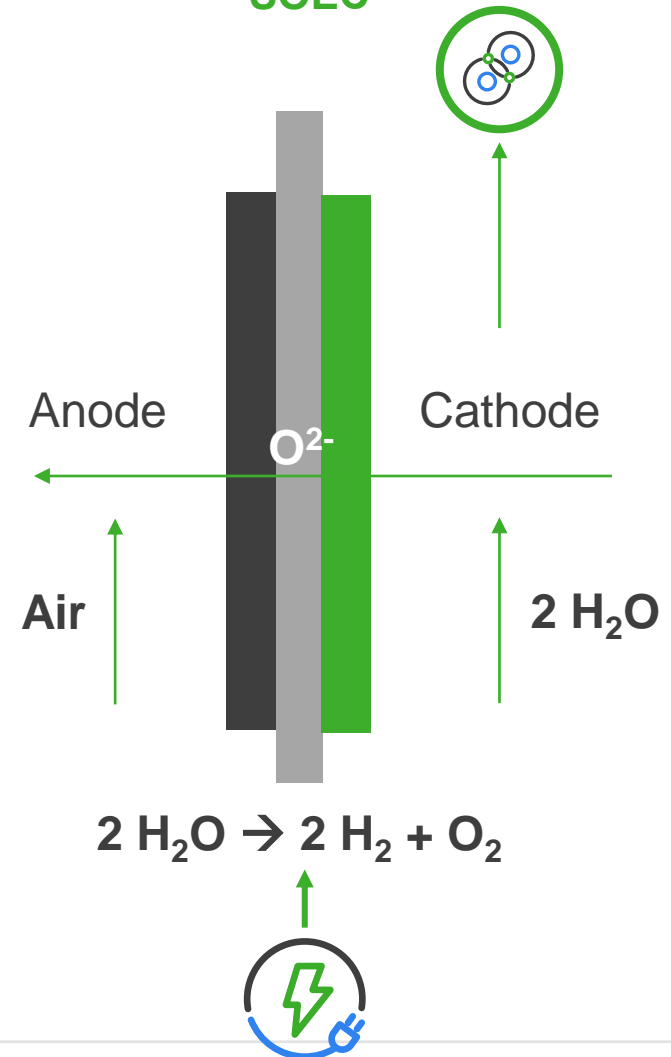


PLATFORM CONCEPT – CORE TECHNOLOGY








Electricity – Fuel Cell
“SOFC”



Hydrogen – Electrolyzer
“SOEC”



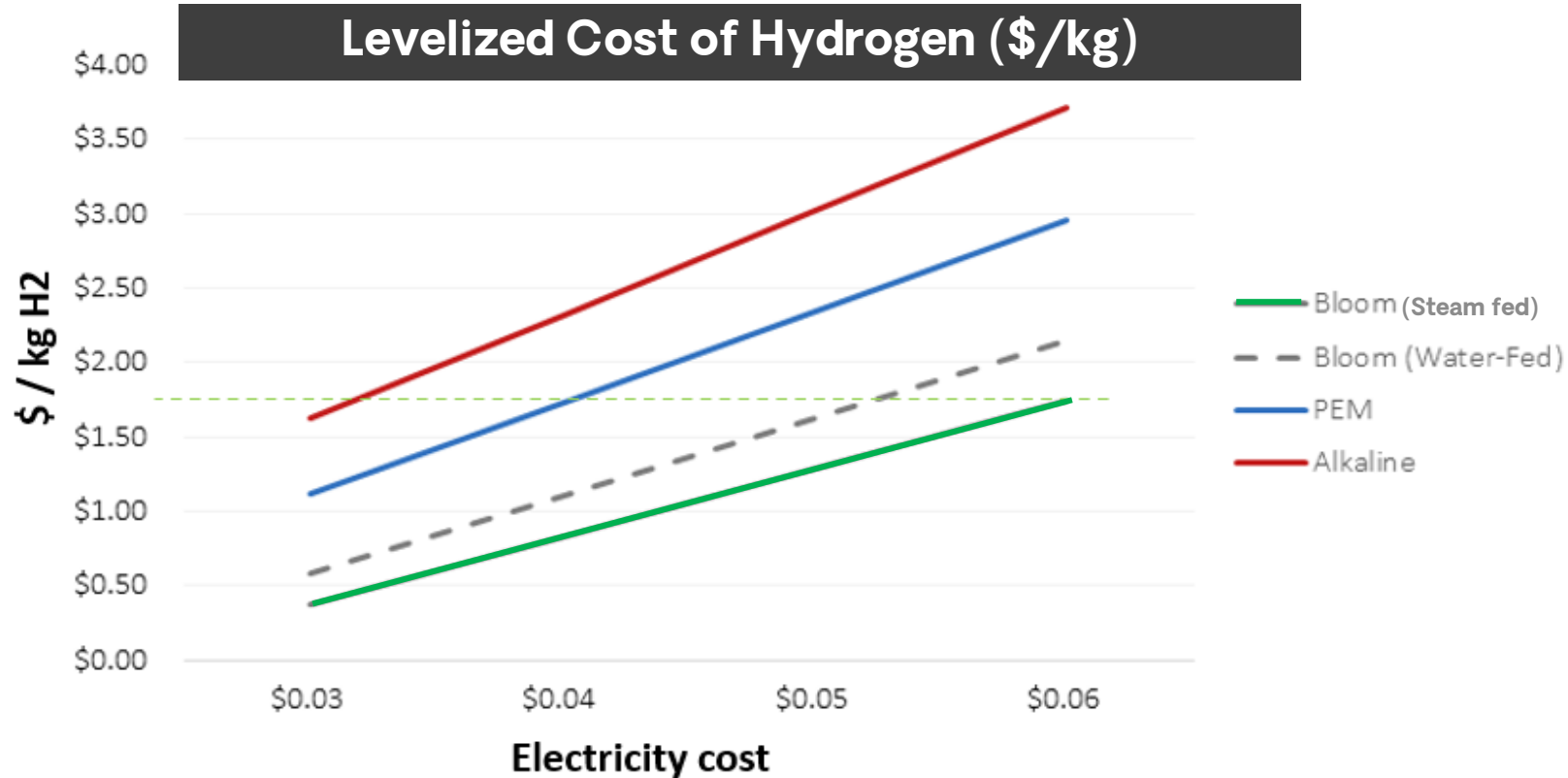
SNAPSHOT OF ELECTROLYZER TECHNOLOGIES

		PEM Electrolysis	Alkaline Electrolysis	Solid Oxide Electrolysis
Description		Polymer membrane under high voltage and high current	Production reaction occurring in liquid alkaline solution	Solid ceramic electrolyte runs at high heat to reduce electrical needs
Current product cost	 (\$/kW)	\$700 - \$1400	\$500 - 1000	\$1300 - 1400
Efficiency	 (kWh/kg)	52	54	37.5
LCOH	 (\$/kg)	\$3/kg of H ₂	\$3.75/kg of H ₂	< \$2/kg of H ₂
Estimated learning rate		13%	9%	28%
Material availability		Limited	High	Robust
Supply chain readiness		Developing	Mature	Mature

SOEC's superior efficiency drives lowest Levelized Cost of H₂

1. Adapted from text of Hydrogen Council, "A Path to Cost Competitiveness." | 2. IRENA. Green hydrogen cost reduction, 2020 | 3. Yates, et. al. "Techno-economic Analysis of Hydrogen Electrolysis from Off-Grid Stand-Alone Photovoltaics Incorporating Uncertainty Analysis" | 4. Hydrogen council, "A path to hydrogen competitiveness" | 5. Historical learning rate for Bloom SOFC is 28%

SOEC OFFERS LOWEST-COST HYDROGEN



Assumptions: LCOH based on Bloom technical specifications for the Bloom Electrolyzer and publicly available cost and technical values for competitors, including electricity costs, O&M, replacement capex, degradation, installation costs, and balance of plant to an exit pressure of 30 psi. Price is net of \$3/kg U.S. green hydrogen PTC. Project is assumed to be financed at 8% WACC and 95% capacity factor over the project's first 10 years (matching PTC). This analysis is illustrative in nature and should not be considered as guidance or a quote for any given project.

Bloom has best efficiency and is already below the \$2/kg mark even in places with higher cost of electricity

Highest efficiency

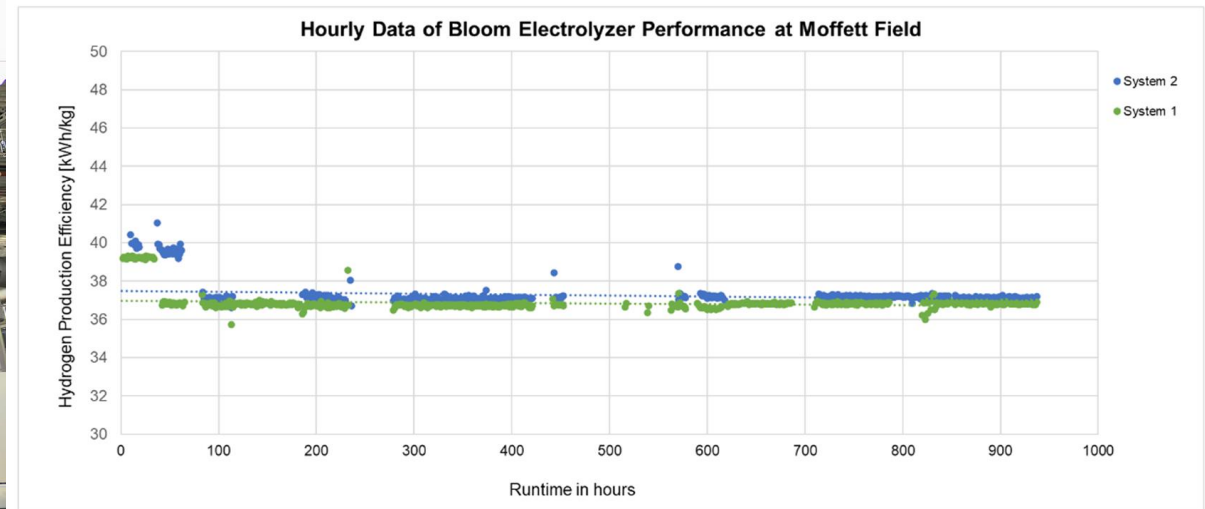
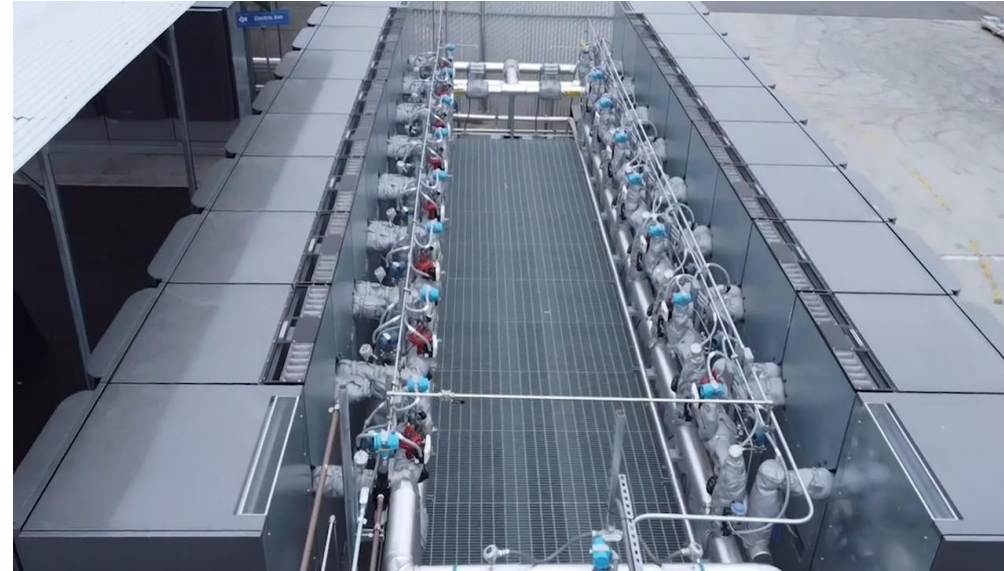
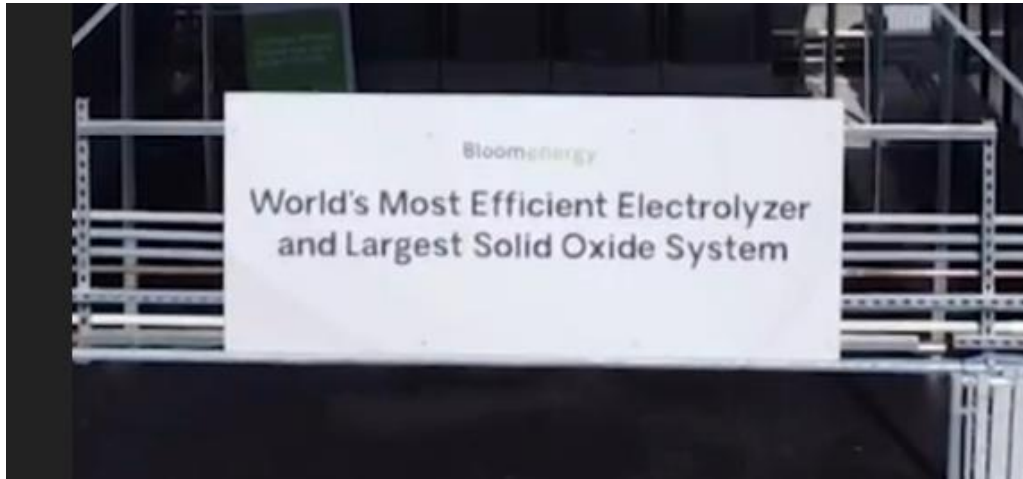
Proven performance

Established
Manufacturing
platform

Modular design

LARGE SCALE DEMONSTRATION PROJECT

AMES RESEARCH CENTER, CALIFORNIA, 4MW SOEC





Bloomenergy[®]

Green Ammonia Synthesis – Simplified

