

Bloomenergy®

Singapore Energy Week

Decarbonization Roadmap: Greening the world with solid oxide fuel cell /
electrolizer technology



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OUR MISSION

MAKE CLEAN, RELIABLE ENERGY AFFORDABLE FOR EVERYONE IN THE WORLD

Bloomenergy®

World Leader in Solid Oxide Technology

\$794m

2020 Revenue

30% CAGR

Over last decade

~\$4bn

Product
+ Service Backlog

>\$650mm

Cumulative R&D

400

Issued Patents

~600MW

Installed Base

99.999%

Energy Server
Uptime

>50%

Reduction in CO₂
vs. US Grid

>99%

Reduction in
Air Pollutants

Near Zero

Water Usage

TECHNOLOGY PLATFORM OVERVIEW

SOFC ENERGY SERVERS PROVIDE A CLEAR PATH TO HYDROGEN POWER

Be



**100% Natural Gas or
Biogas**

Today's solution enables
tomorrow's transition



**Natural Gas +
Hydrogen Blend**

Hydrogen can be utilized in
part to meet clean energy goals



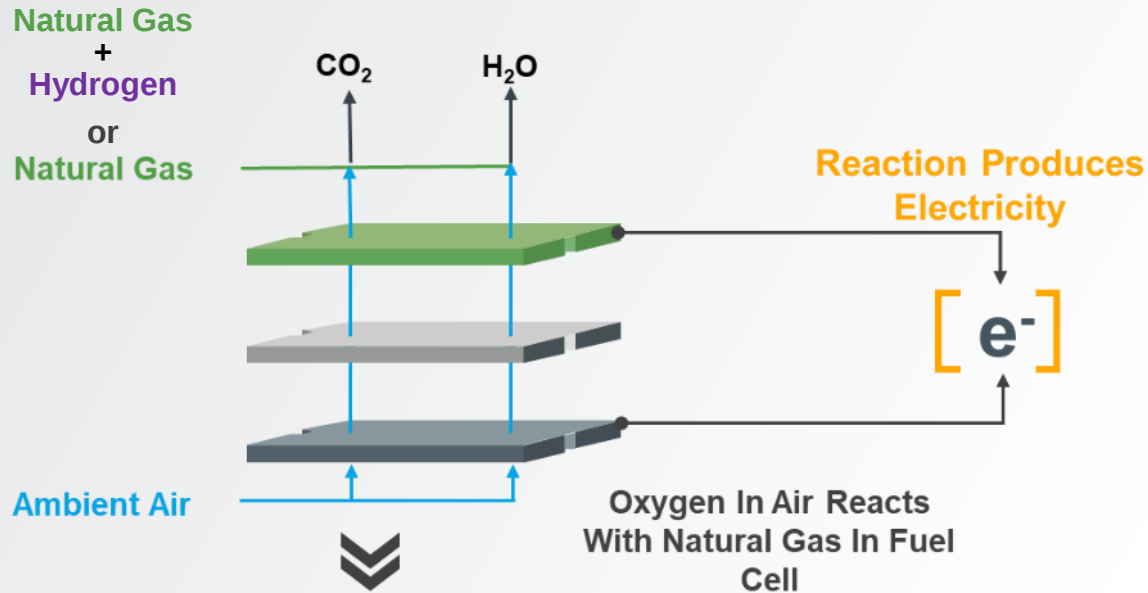
100% Hydrogen

Bloom's technology provides for a
risk-free transition when needed

TECHNOLOGY PLATFORM OVERVIEW

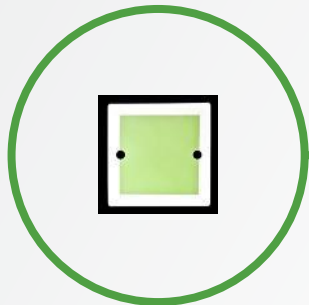
MODULAR, SCALABLE, EFFICIENT

Be



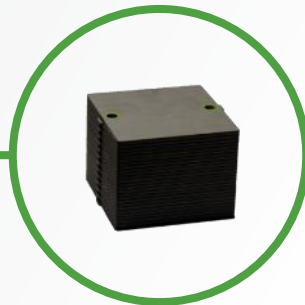
Technology Highlights

- >99% Availability
- 65-53% Electrical Efficiency (LHV net AC)
- 800 lbs/MWh CO₂ Emissions (~50% of CC)
- Negligible Non-CO₂ Emissions
- Noise Equivalency of Normal Conversation
- No water requirement (steady state)



Fuel Cell

100µm thick / 25W



Stack

12.5kW



Server Module

50kW



System

250 KW

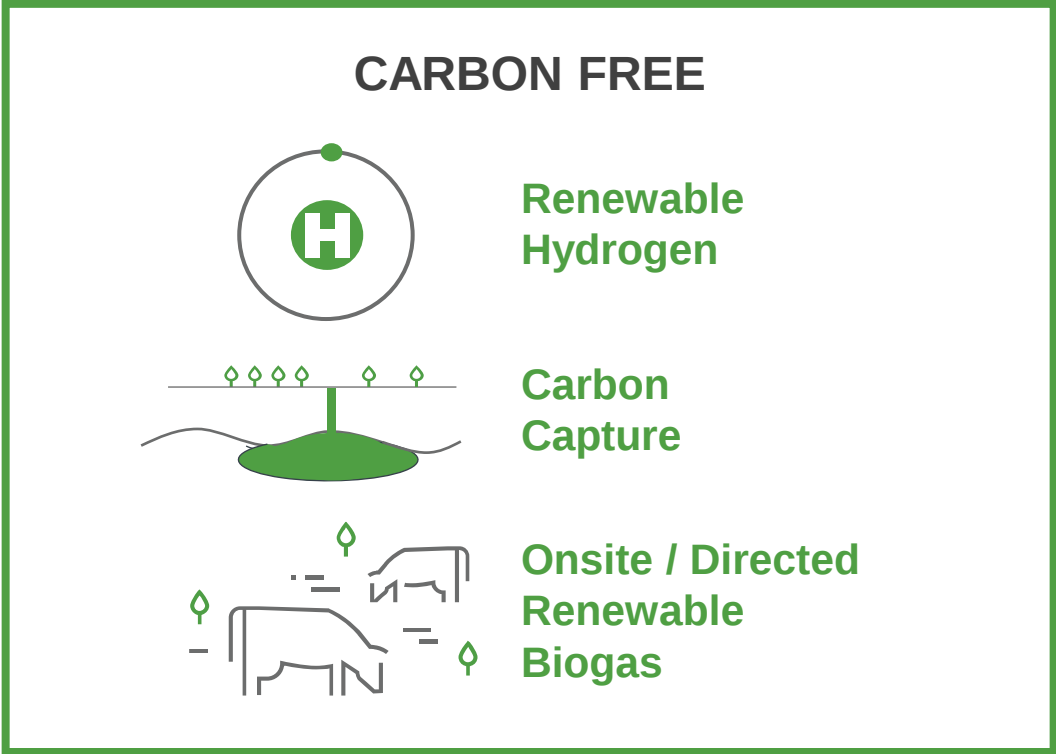
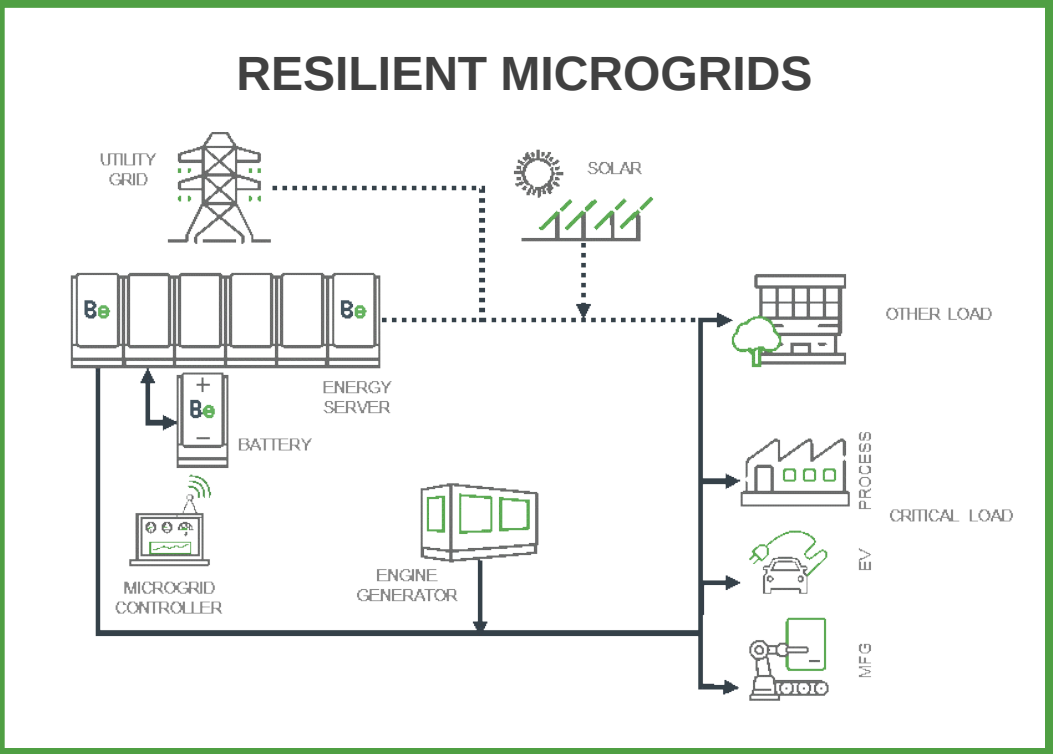


Power Center

MWs – GWs

TECHNOLOGY PLATFORM OVERVIEW

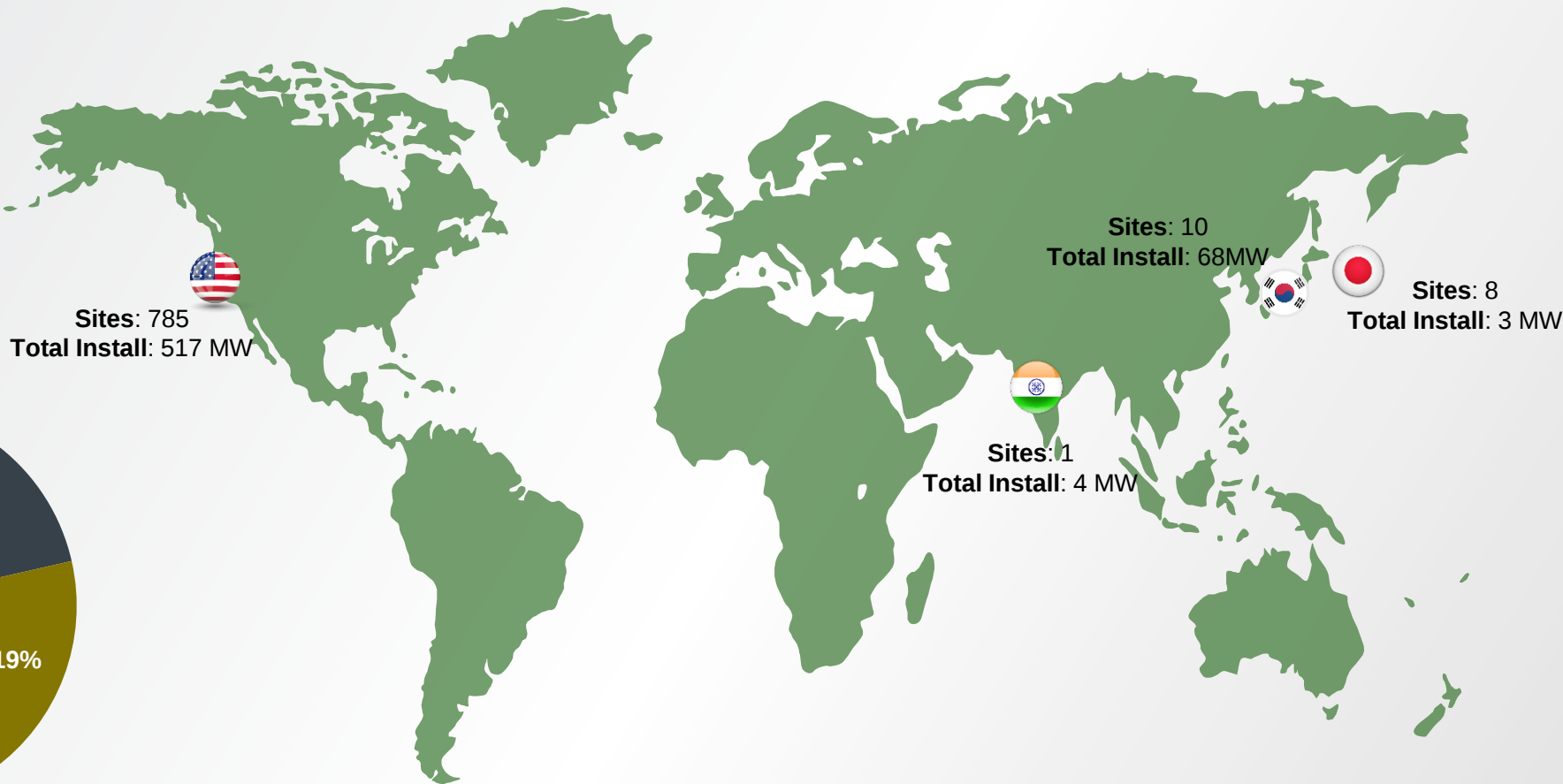
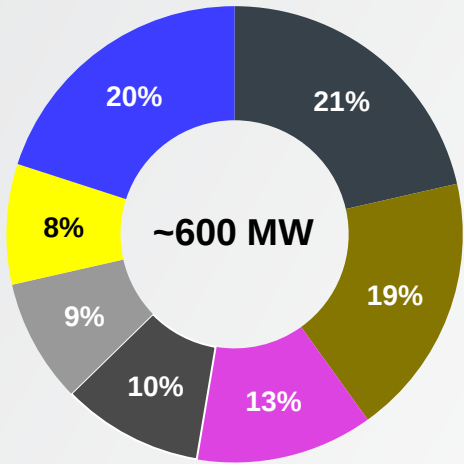
BLOOM'S CARBON FREE TOTAL SOLUTION



BLOOM AT A GLANCE

PROVEN AT SCALE, ACROSS THE GLOBE

- Utilities
- Retail
- Media & Telco
- Datacenters
- Healthcare
- Technology
- Others



TECHNOLOGY PLATFORM OVERVIEW

UNPARALLELED POWER DENSITY

Be



1 MW Solar PV Facility

1 MW Bloom Energy



Solar requires
**~12,500% more
space** than Bloom



When stacked in a
“Power Tower”
configuration, Bloom
achieves unparalleled
power density

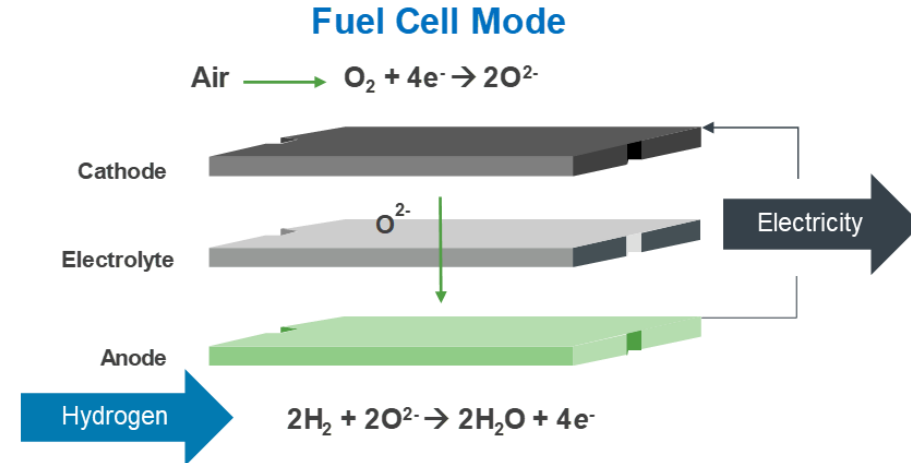


TECHNOLOGY PLATFORM OVERVIEW

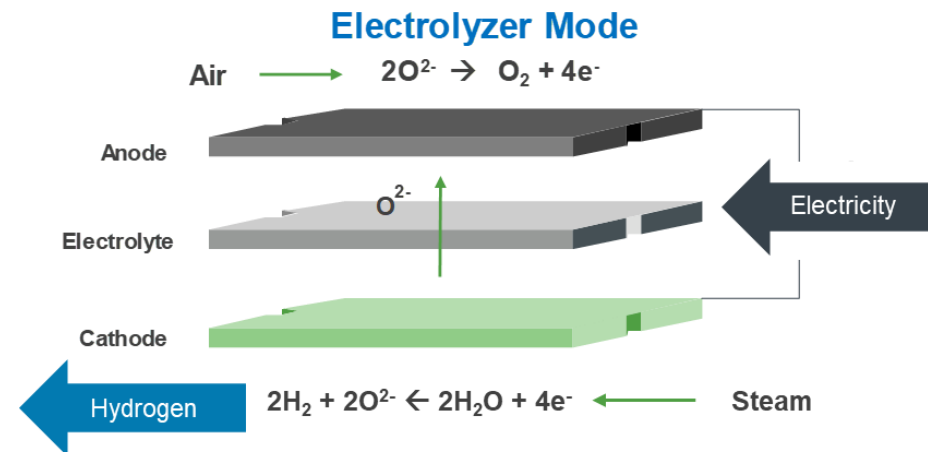
REVERSIBLE FUEL CELL

Be

Fuel Cell Mode

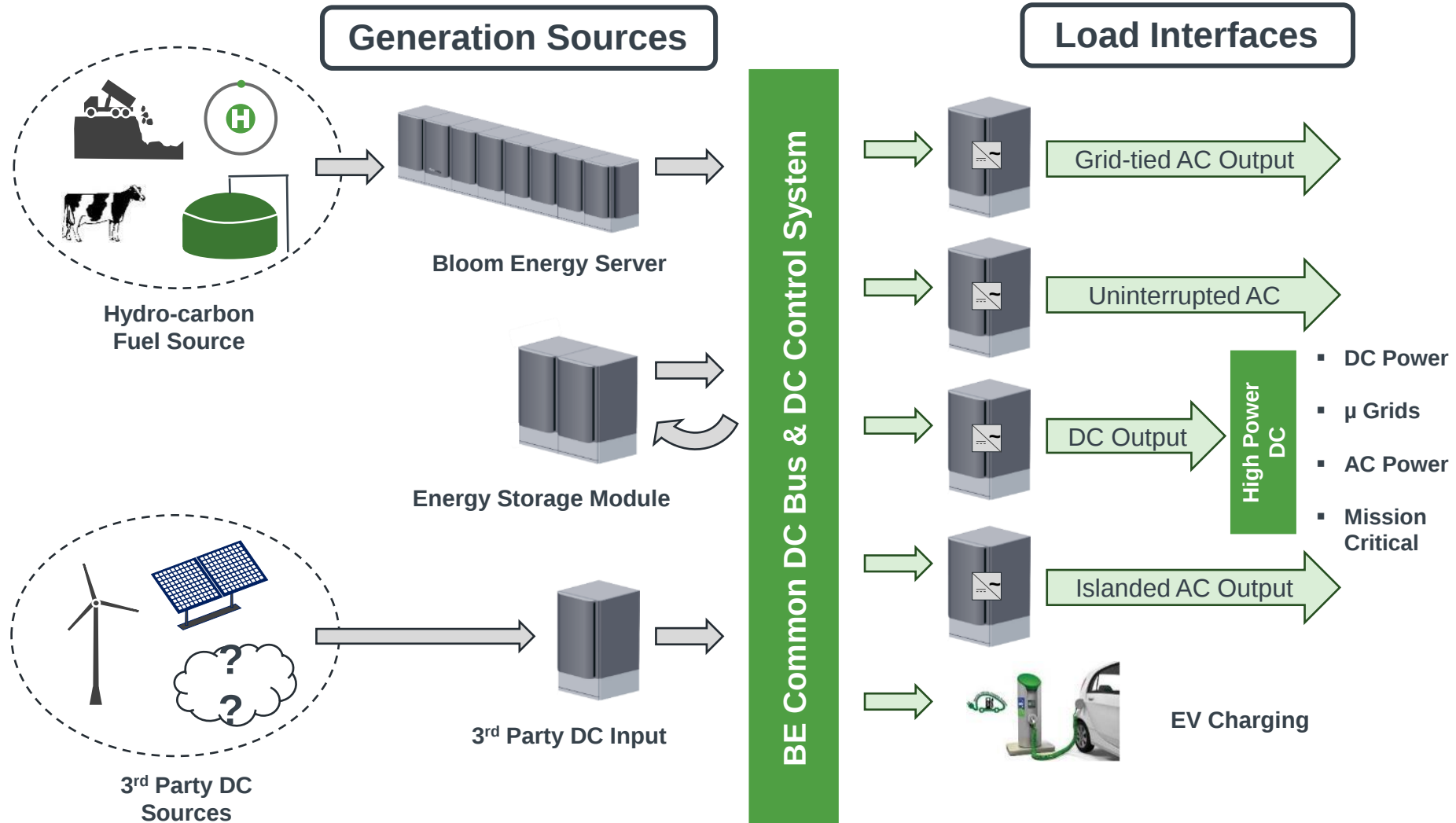


Electrolyzer Mode



DECARBONIZING THE FUTURE

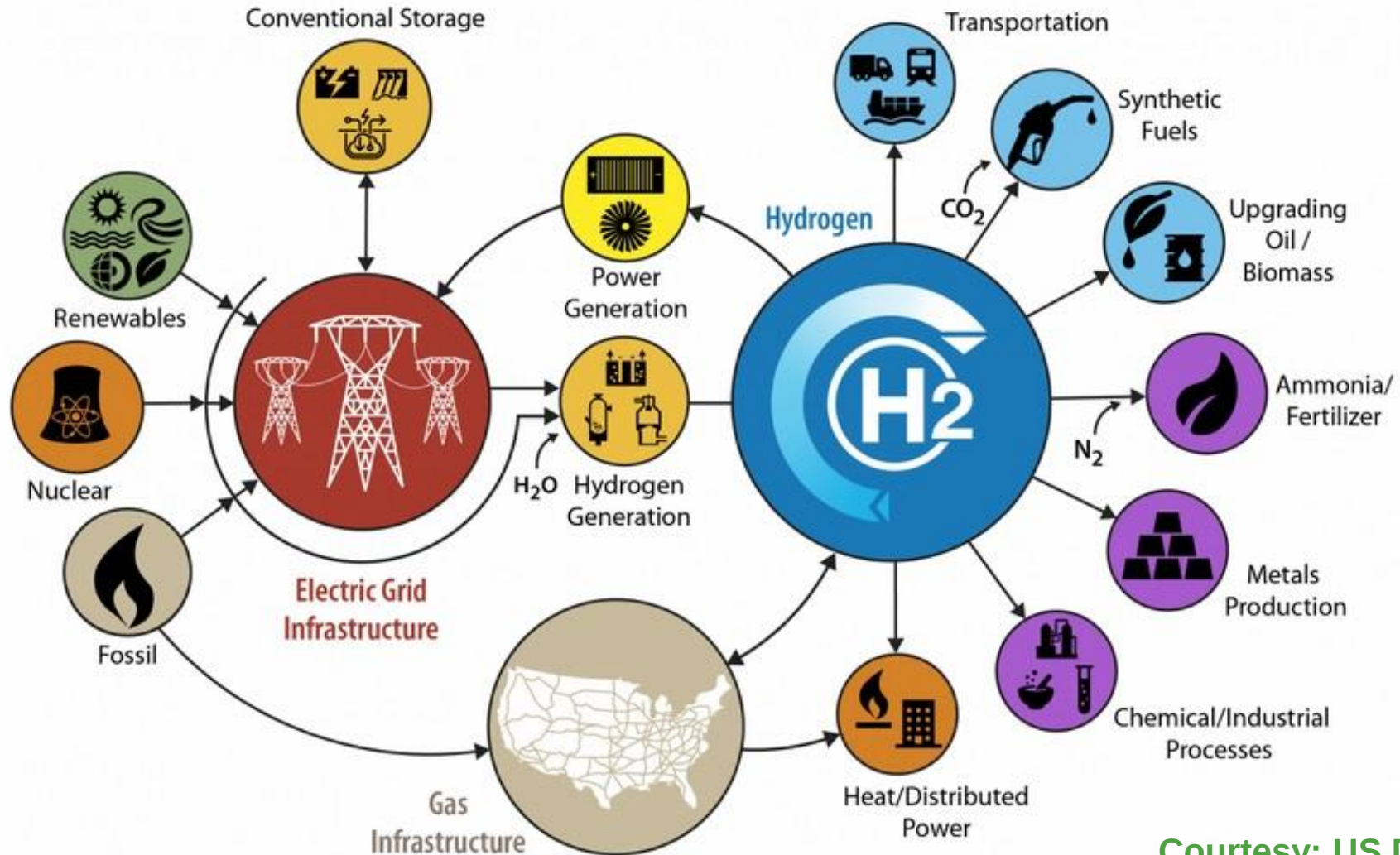
ENERGY INTEGRATION



DECARBONIZING THE FUTURE

H2 INTEGRATION

Be

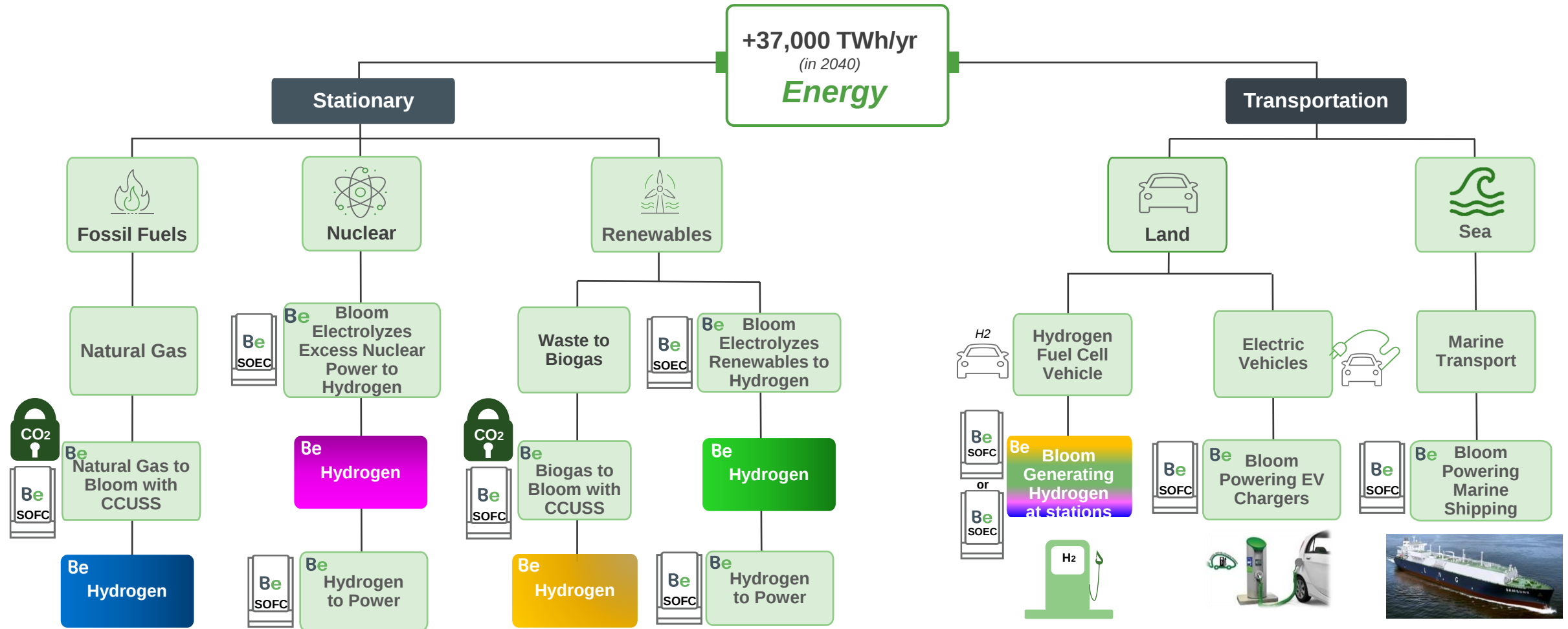


Courtesy: US DoE

DECARBONIZING THE FUTURE

H2 & THE ENERGY TRANSFORMATION

Be

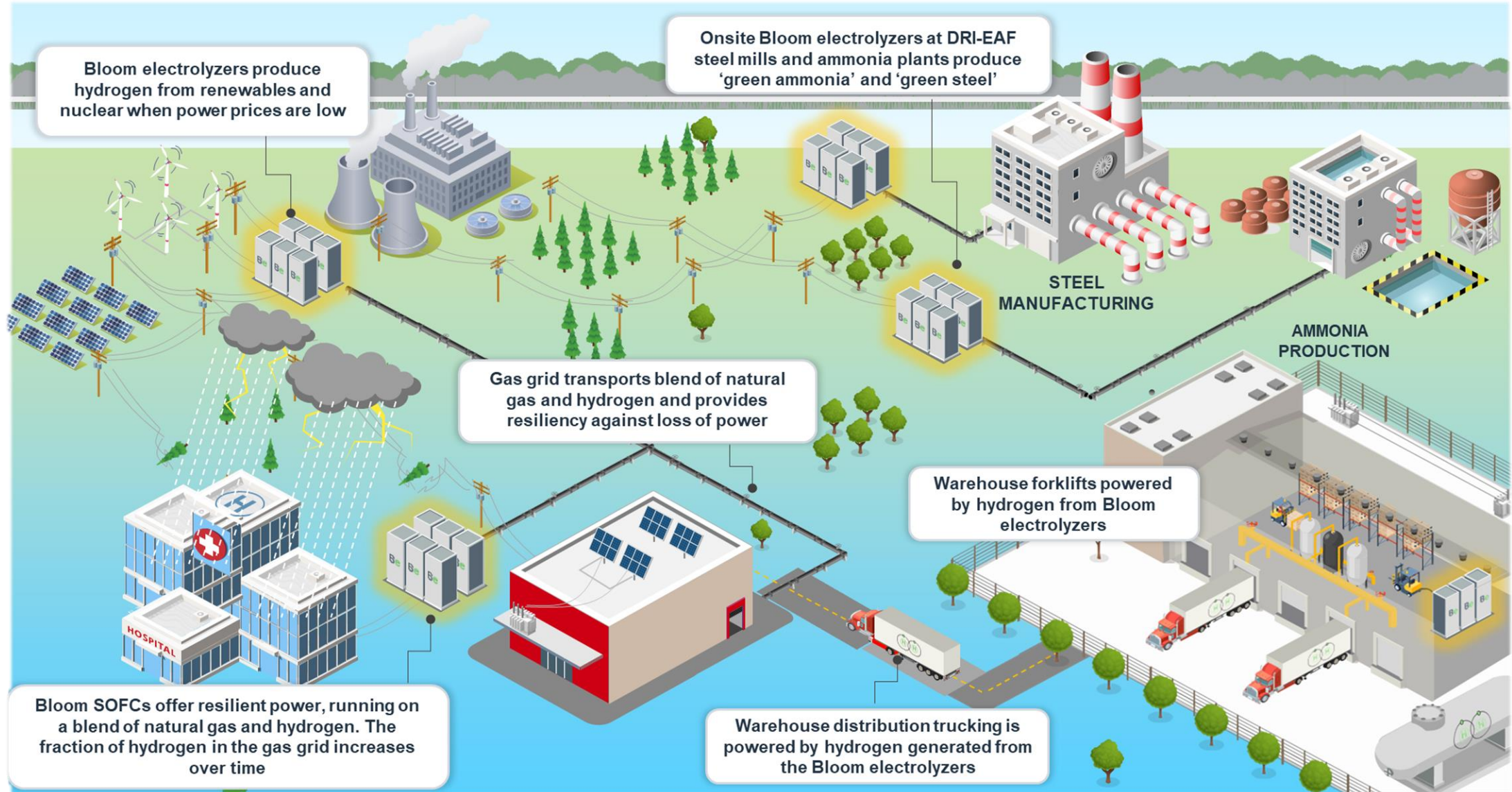


- H2** “Blue Hydrogen”, Hydrogen generated during carbon capture of Natural Gas
- H2** “Pink Hydrogen”, Hydrogen generated by electrolyzing excess Nuclear Power
- H2** “Gold Hydrogen”, Hydrogen generated during carbon capture of Biogas Gas

- H2** “Green Hydrogen”, Hydrogen generated by electrolyzing excess renewables
- H2** Hydrogen generated by BE SOFC or SOEC from any of the above means

ELECTROLYZER & FUEL CELL APPLICATIONS

ZERO CARBON ECONOMY USING BLOOM





Bloomenergy®