



MANAGING CARBON, GROWING ECONOMIES

TRANSITIONS TO LOW-COST, LOW-CARBON ENERGY SYSTEMS

Leveraging Gases, Fuels, Infrastructure

February 24th, 2021 | Columbia University Center on Global Energy Policy

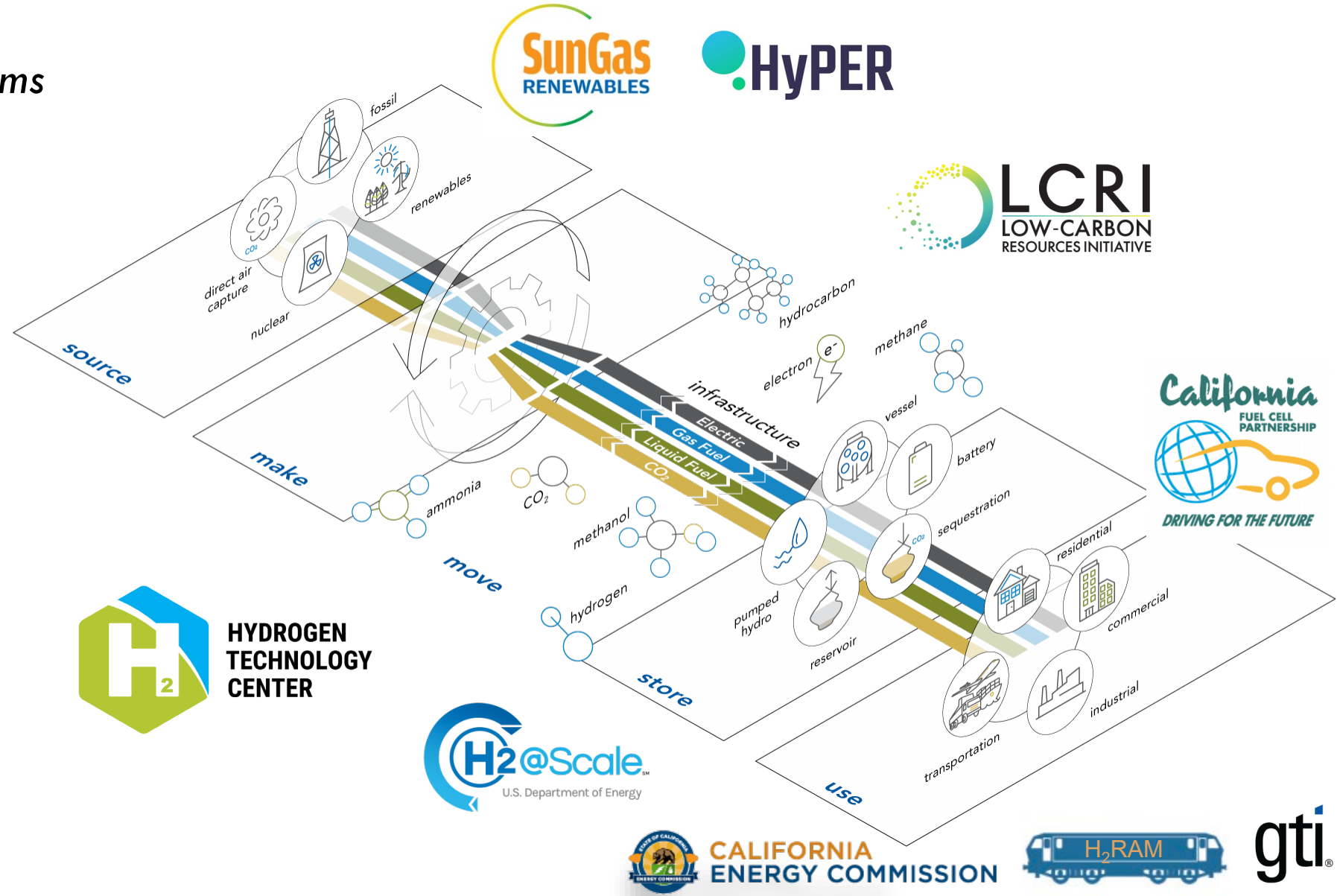
Kristine Wiley, Executive Director, Hydrogen Technology Center, GTI

HYDROGEN TECHNOLOGY CENTER

Low-Carbon, Low-Cost

Hydrogen Energy Systems

GTI's Hydrogen Technology Center offers integrated hydrogen testing and demonstration facilities across the entire value chain—leveraging deep expertise to bring real solutions to the market.



LOW-CARBON RESOURCES INITIATIVE

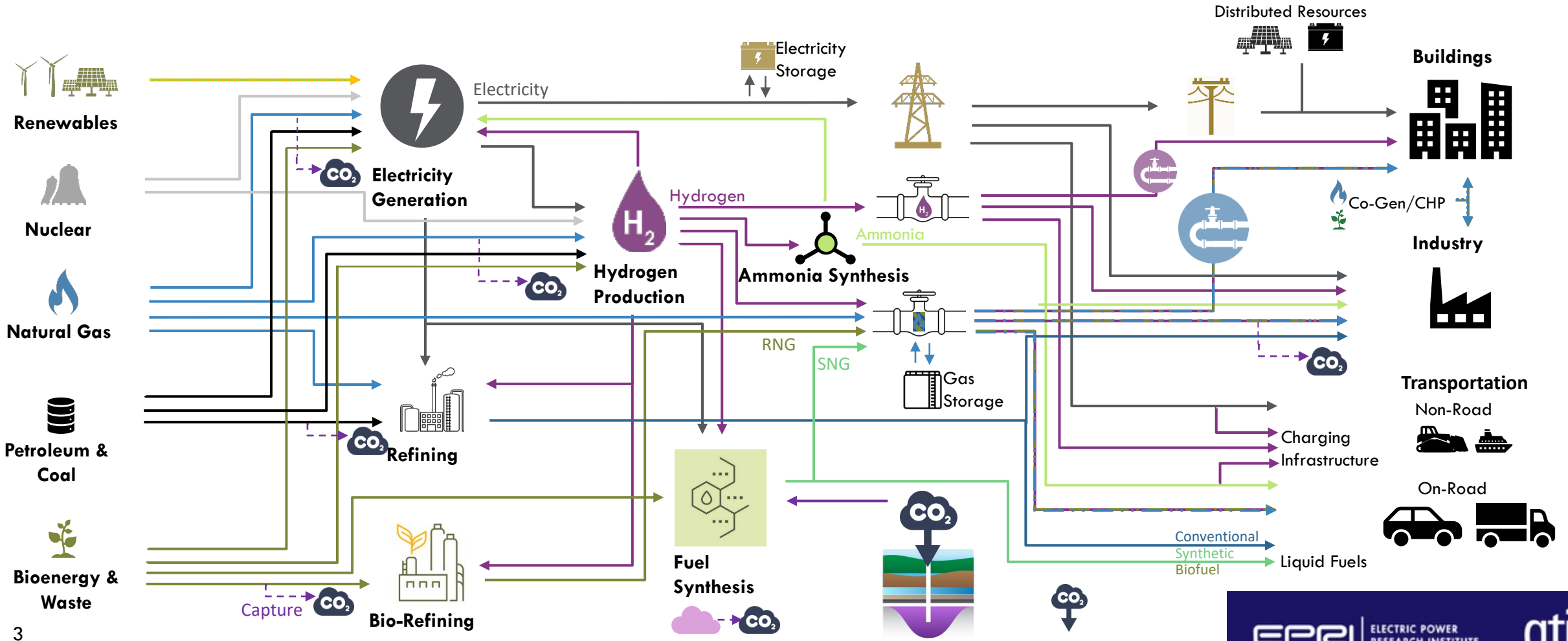
Global R&D Collaborative

Primary Energy

Conversion

Storage and Delivery

Energy End-Use



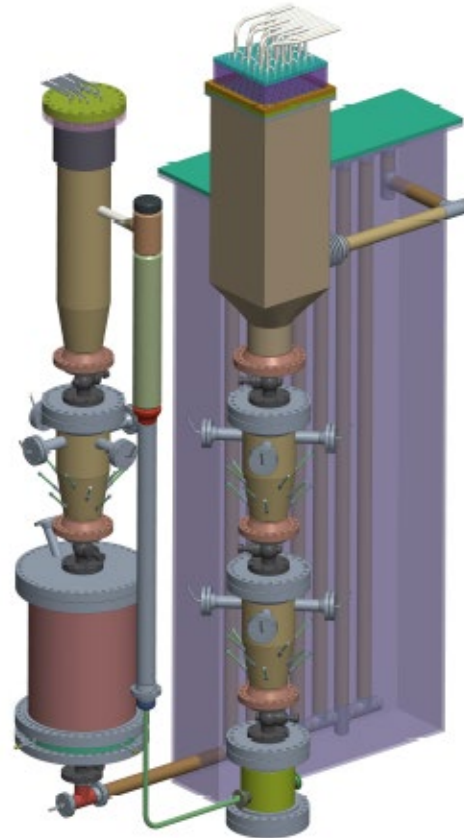
HYDROGEN GENERATOR

Clean Hydrogen Production

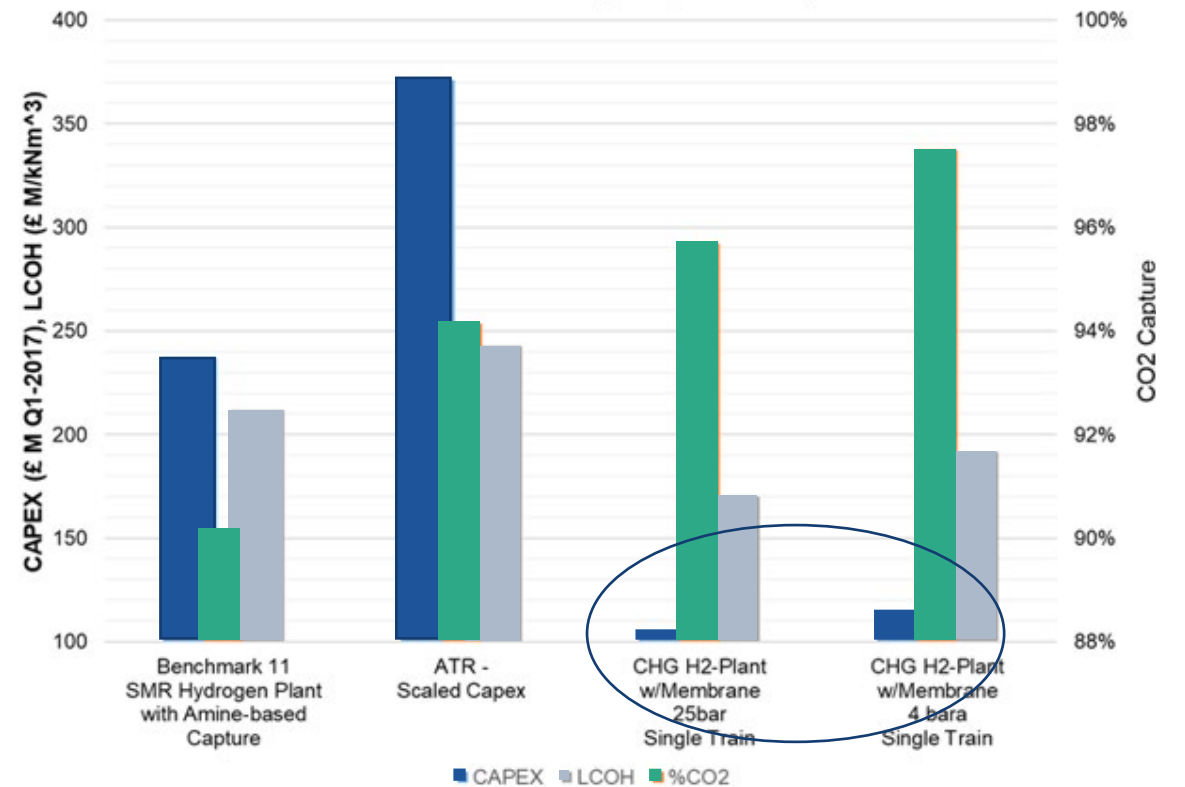


Lowest cost path for blue H₂ production and low carbon H₂-to-Power

- ~50% CAPEX reduction vs. conventional steam methane reforming with 90% carbon capture
- 20-30% reduction in levelized cost of H₂



Cost of Low-Carbon Hydrogen Comparison



INFRASTRUCTURE PROVIDES UNPARALLELED DELIVERABILITY

Enabling Energy Transitions

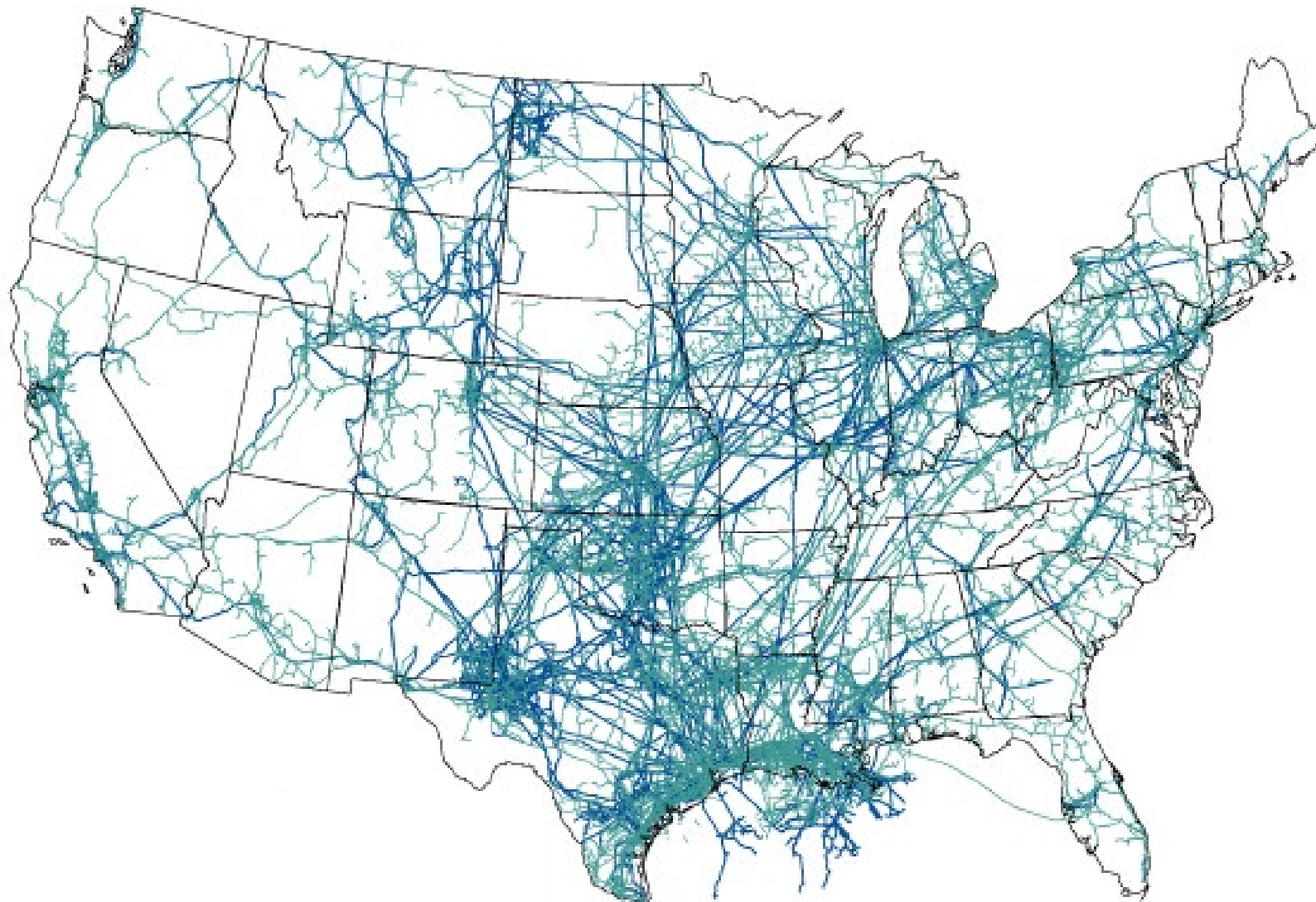
Production

Transmission

Storage

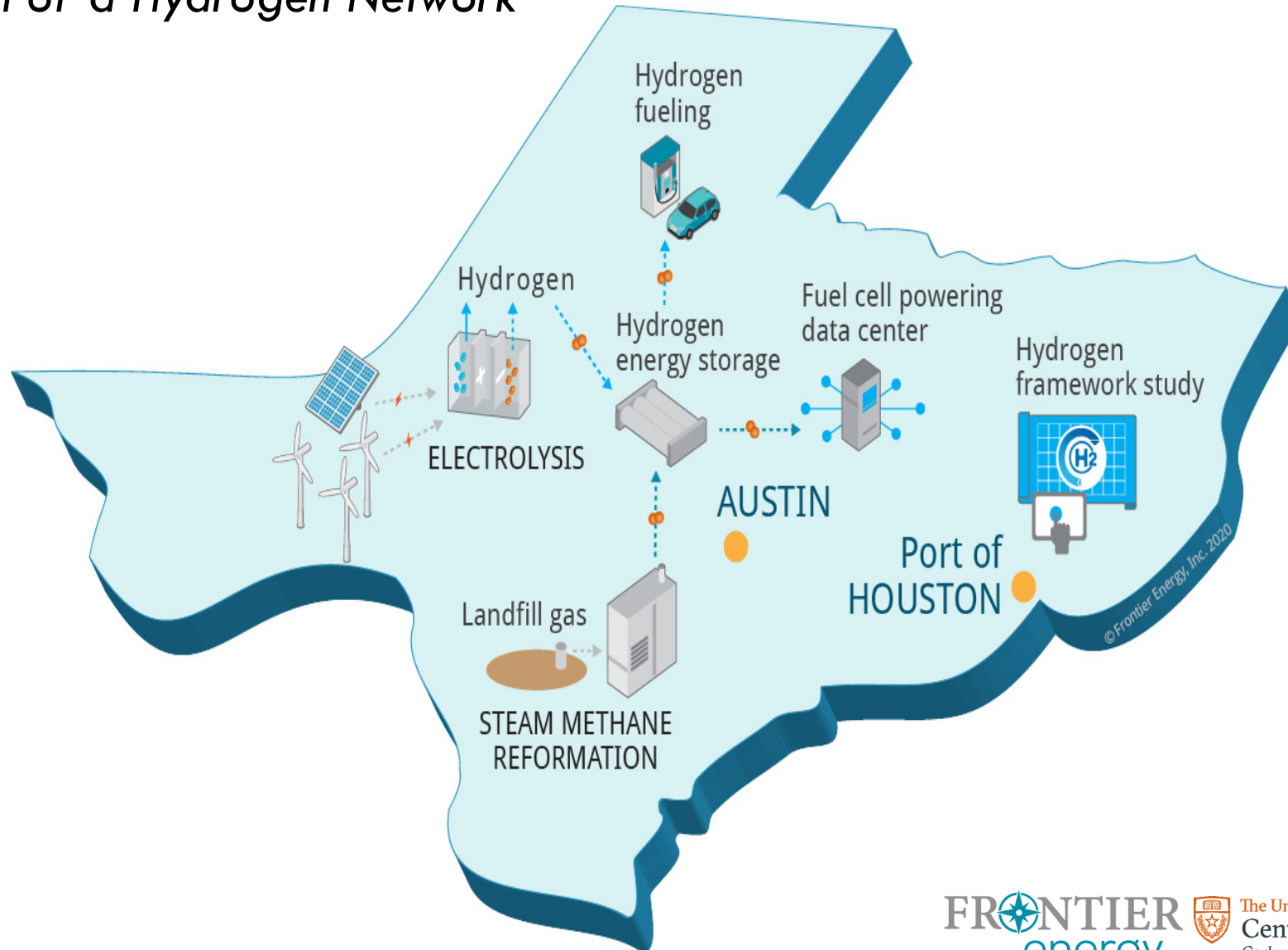
Conversion

End Use



H2@SCALE

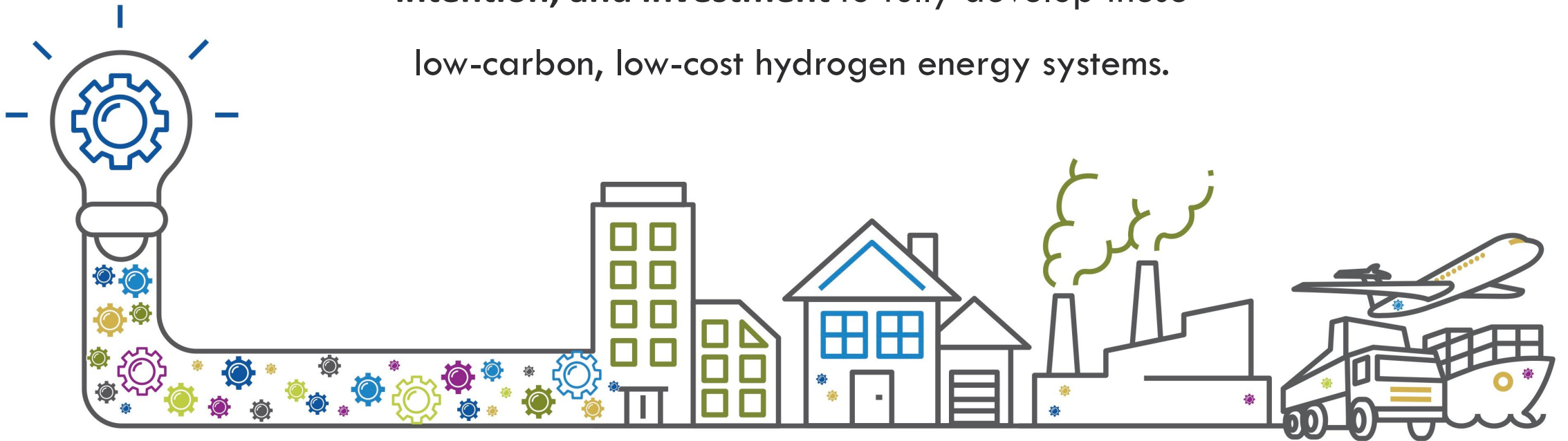
Demonstration of a Hydrogen Network




WHAT'S NEEDED?

The Path To A Low-Carbon Future

We need **collaboration, disruptive innovation at scale, intention, and investment** to fully develop these low-carbon, low-cost hydrogen energy systems.





**GTI envisions a carbon-managed future
in which integrated energy systems leverage
low-carbon fuels, gases, and infrastructure
to achieve economy wide decarbonization.**