

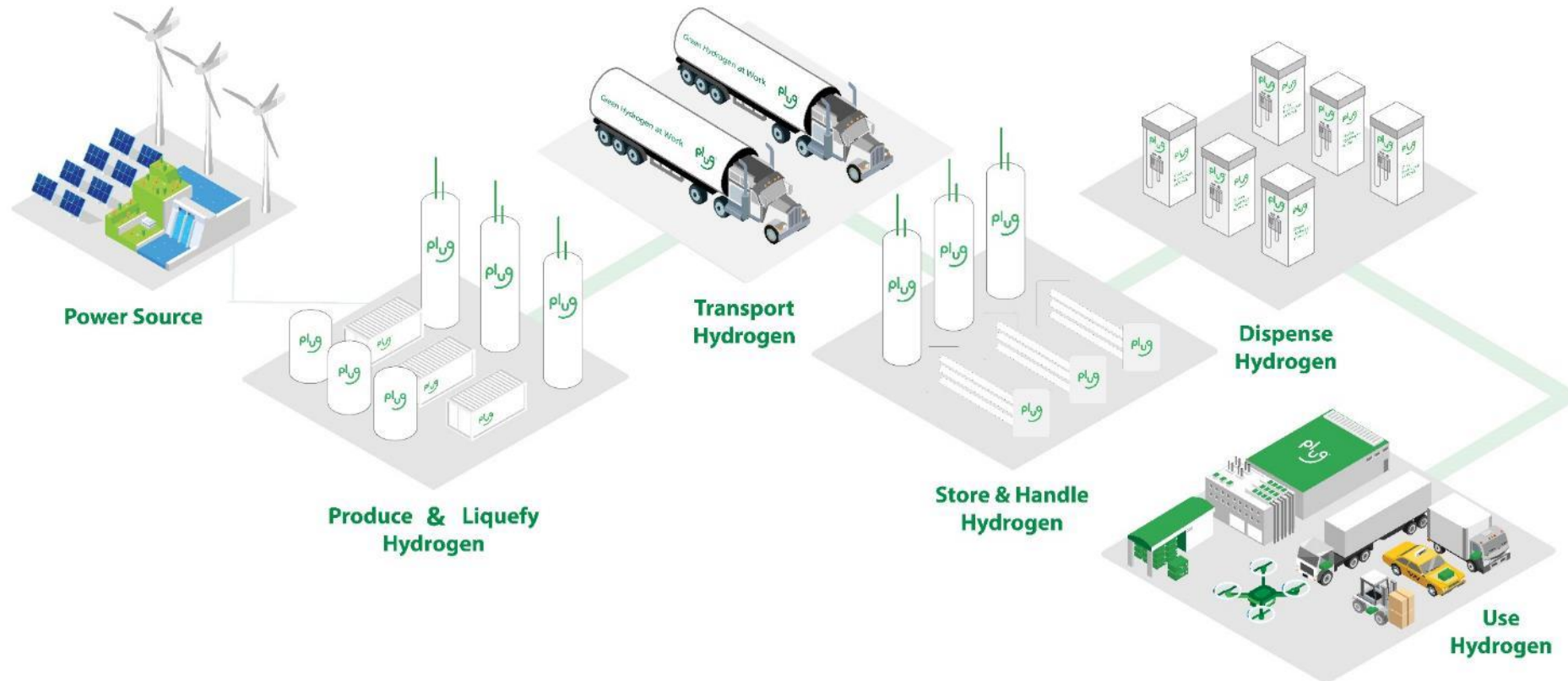


Deploying the Clean Hydrogen Economy at Scale

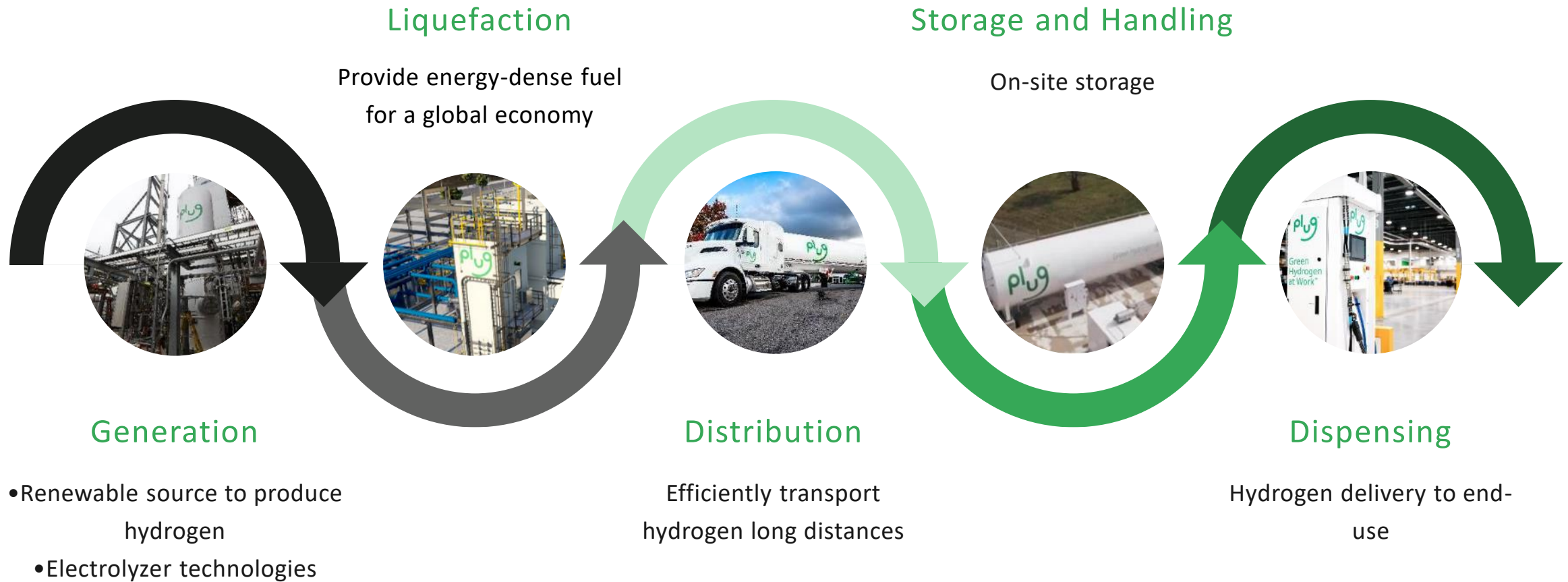
11.18.2024

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Plug's Green Hydrogen Ecosystem

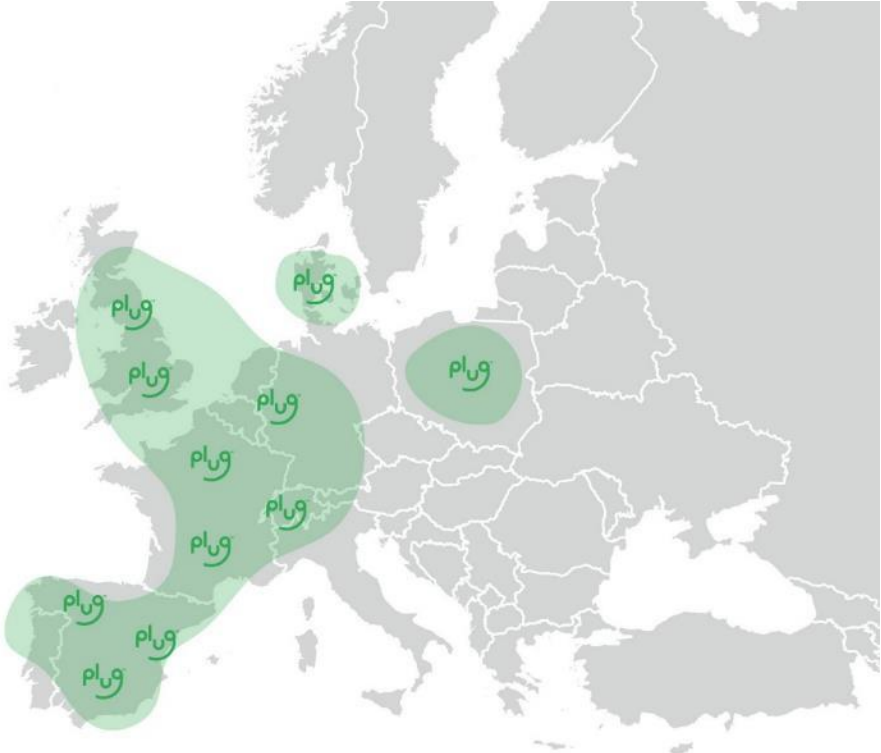
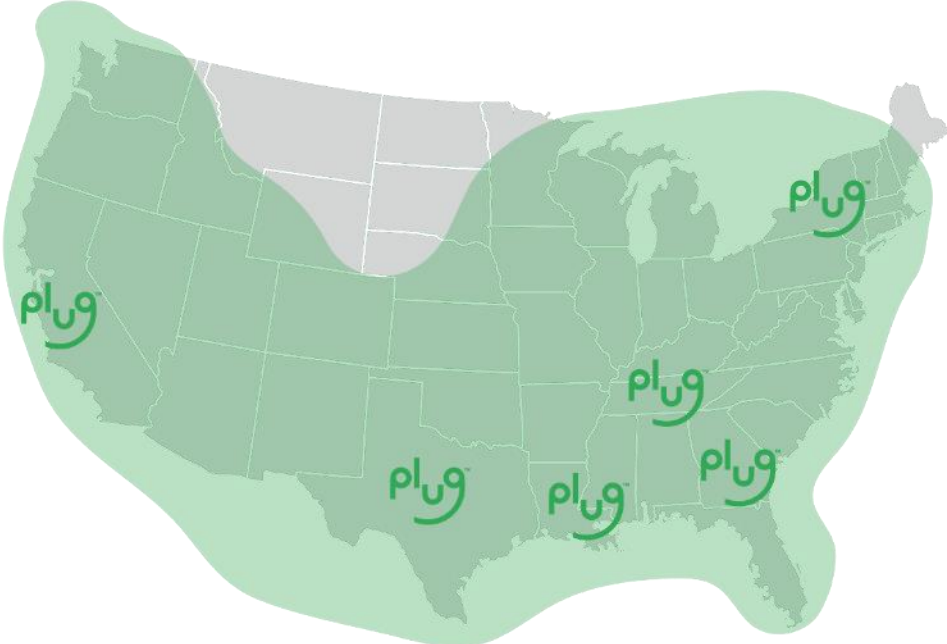


From generation to distribution: how do we do this?



Generation, Liquefaction and Distribution

Global Green Hydrogen Network



Today

Operational



- Georgia - 15TPD
- Tennessee - 10TPD

Under Construction



- Louisiana – 15TPD
- Texas – 45TPD
- New York – 74TPD

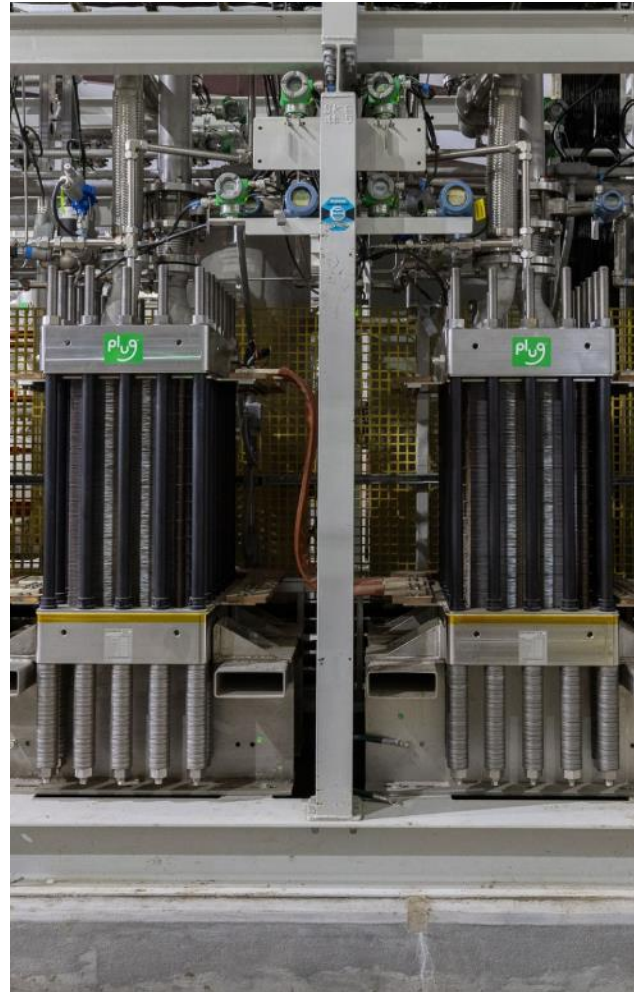
Under Development



- Antwerp – 35TPD
- Finland – 3 sites
 - 85TPD H2 + 70 kt ammonia
 - 2 mt DRI/HBI/100TPD H2
- Denmark – 1 site
- France – 40TPD

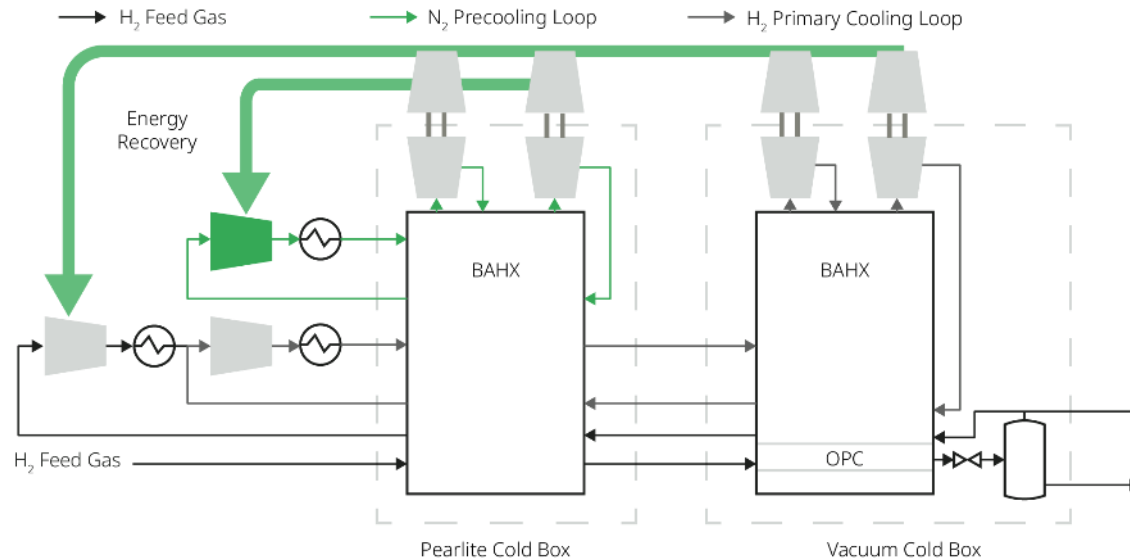


GA Green Hydrogen Plant



Two cold boxes, Three turbo expanders, 15 TPD

Plug liquefaction and distribution network



- Plug has brought a new liquefaction technology to the market with improvements in efficiency, reliability, and performance
- Less turbo expanders (2) to achieve 95% Para-hydrogen
- Gaseous nitrogen & hydrogen refrigerant
 - Improved reaction time to desired temperature
 - Less risk to heat exchanges (ΔT)
 - Closed loop system (minimal losses)
- Highly efficient liquefier with a specific energy consumption below 11 kWh/kg

This technology reduces:

- # of turbo expanders, required number of heat exchanger cores, and more

Options for Hydrogen Transportation



Gas truck



Liquid truck



Gas pipeline

Total Capital Costs	Low	Medium	High
Operating Costs	High	Medium	Low
Transport Cost per kg	High	Low	Low
Representative Transport Distance	Local ~100 miles	Regional ~500 miles	Continental ~1,000 miles
Applicable Scale	1 to 10 TPD	10 to 500 TPD	100+ TPD

8 GH2 tube trailer deliveries required for every 1 LH2 trailer



GH2 Tube Trailer Capacity = 520 kg

Fewer deliveries

Smaller footprint

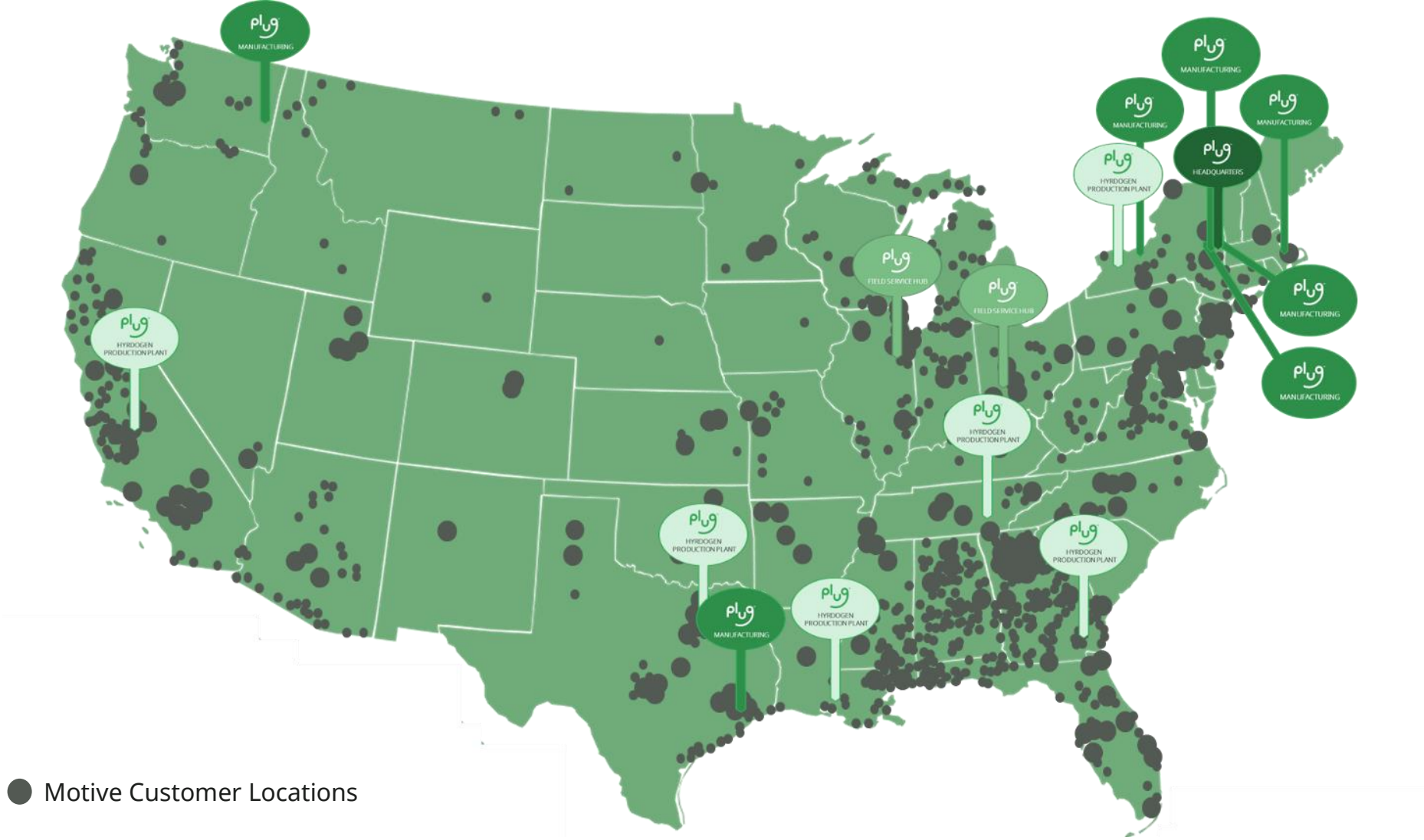
Lower CAPEX and OPEX



LH2 Tanker Capacity = 4,500 kg



North America: Plug's Ecosystem Buildout



- Motive Customer Locations
- Stationary Power Customer Locations

Storage, Handling, and Dispensing

Storage, handle and dispensing

Plug's goal: make green hydrogen a ubiquitous fuel

Scalable hydrogen solutions; making it easy for e-mobility, material handling and stationary to adopt fuel cell power

Plug has:

- Deployed more than **69,000** fuel cell systems for e-mobility
- Deployed over **250** GenFuel sites
- Exceeded **75 million** hydrogen fills

Every 6 seconds, a Plug e-mobility fuel cell is refilled using Plug hydrogen



New Product Deployment



Mobile Refueling



SEPTA (Philadelphia, PA)
SAMTrans (San Mateo, CA)

- Quick Deployment of refueling infrastructure
- Onboard LH2
- Cryo Pump
- Heat exchanger
- Dispenser

Stationary Power

- 1MW per container
- Array of ProGen Fuel Cells in each container





America

runs on Plug Power

Plug Power fuel cells power material handling applications from warehousing to distribution to manufacturing

They provide reliable, 24/7 operation and act as a critical element of the national food and grocery supply chain

30%

Of all groceries shipped in the US in the first half of 2020 were moved by Plug Power fuel cells

RETAIL DISTRIBUTION



FOOD DISTRIBUTION



LOGISTICS



AUTOMOTIVE



Mercedes-Benz



HONDA 16

amazon

>15,000

Fuel cell Forklifts operational

Walmart

>10,000

Fuel cell forklifts operational

THE HOME DEPOT

>3200

Fuel cell forklifts units operational

Total H2 Dispensed:

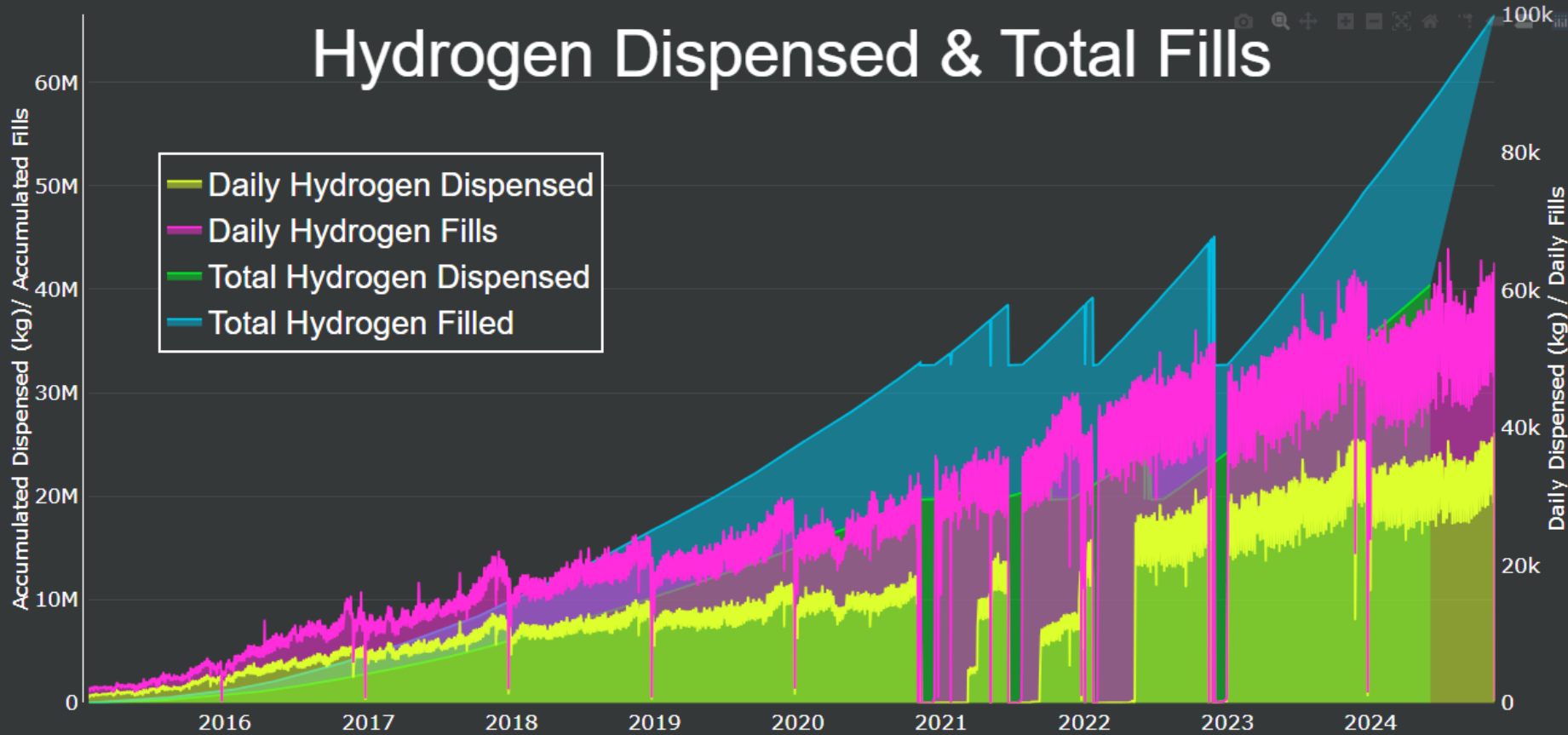
48,650,043
kg



Total H2 Fills:

91,431,073
of fills

Hydrogen Dispensed & Total Fills





Green Hydrogen at Work™