



Innovative Energy Solutions

Moderator: Dr. Aaron Katzenstein
Deputy Executive Officer
Technology Advancement Office

Governing Board Retreat
September 10, 2026

Bala Ramamurthy

Chief Executive Officer

Critical Loop

As CEO and Co-Founder of Critical Loop, Bala brings over a decade of leadership in aerospace innovation. Previously, Bala served as a key leader at SpaceX, where he led the development of the human-rated Falcon 9 rocket, playing a pivotal role in the United States' return to human spaceflight. With extensive experience in engineering, operations, and safety, Bala led critical tests and the development of new hardware and software, ensuring the highest standards for crewed space missions. Bala's deep expertise in engineering technology, governing relationships, and commitment to advancing the future of energy are central to the vision and growth of Critical Loop.



Tim Fogarty

Chief Executive Officer

PCC Hydrogen

Tim Fogarty is co-founder and CEO of PCC Hydrogen and founder and CEO of Pyrochem Catalyst Company, which develops and manufactures advanced catalyst materials for emissions mitigation and fuel reforming. Over more than two decades, he has built, financed, and commercialized energy technologies. His earlier operating roles include serving as CFO of fuel-cell developer INI Power Systems and founding and co-leading Phoenix Coal Corporation, which commercialized university-licensed technology and completed an IPO. Tim earned an A.B. from Harvard University and subsequently served four years as an infantry officer in the United States Marine Corps.



JT Steenkamp
Vice President
Technology, Front-End Engineering & Development
Prologis Mobility

JT Steenkamp is the Vice President of Front-End Engineering & Development, for Mobility at Prologis; the world's largest industrial real estate company focused on distribution centers and data centers. He is accountable for EV charging and hydrogen infrastructure technology as well as project development and delivery.

JT recently led a team to deliver the largest EV truck charging project in the US at 9 MW including 18 MWh of energy storage and 3 MW of linear generation capacity.

Before Prologis JT spent 10 years at Shell developing projects in hydro pumped storage, renewable natural gas production, distributed energy storage, and EV charging programs, while also playing leading roles in country-level hydrogen, carbon capture and sequestration, and fuel cell strategies.

JT holds Bachelor's and Master's degrees in Engineering Physics from the University of Saskatchewan.



Critical Loop

Delivering Megawatts in Weeks, Not Years

Bala Ramamurthy, CEO

bala@criticalloop.com



CRITICAL LOOP

The utility says “Wait 5 years”.

But manufacturers, data centers,
EV charging hubs, and logistics
facilities need power now.

- There is an estimated 5–7 year grid upgrade timeline
- There are millions of dollars of GPUs sitting idle
- Leased facilities are generating zero return
- Utilities are facing 200+ customer backlogs

**Power scarcity is becoming
America's industrial bottleneck.**



We bridge the gap between what the grid delivers today and what facilities need tomorrow.

Critical Loop deploys modular battery storage and UL-certified controls behind the meter to:

- Pull maximum grid power when available
- Switch to batteries during constrained hours
- Integrate diesel, natural gas, solar, wind, or future SMRs
- Scale down once utility upgrades catch up



How it Works

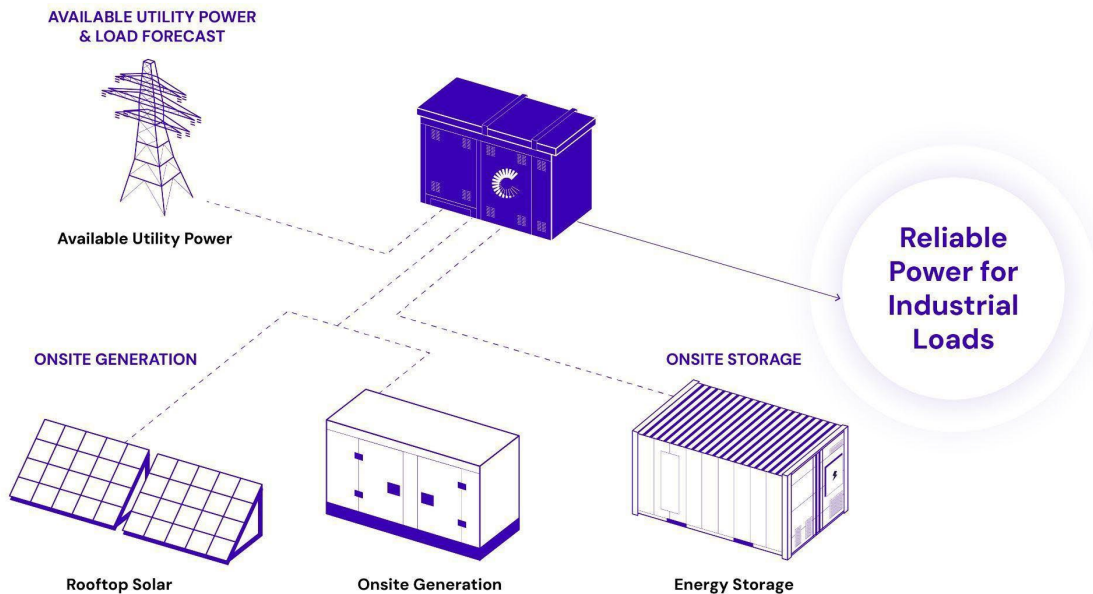
Behind your meter:

1. Available Utility Power
2. Battery Storage
3. Backup Generation

Our Cygnus controller:

- Enforces hourly utility power limits
- Pulls maximum available grid power
- Switches seamlessly to storage
- Provides real-time dashboards

When the utility catches up, our system scales down.
You are buying time-to-power, not a power plant.



What makes us different



Supplement the Grid, Don't Replace It

Unlike companies building full off-grid systems, we use 90–98% grid energy and supplement only peak constraints.



Temporary Systems That Disappear

3–5 year service agreements. No stranded 10-year power plants.



Multi-Standard Grid Platform

Certified across major interconnection standards, including UL-3141 and IEEE 2030.5.



Aerospace-Grade Execution

Engineers from SpaceX, Tesla, Rivian. Applied to the least glamorous, but most critical, infrastructure problem.

Proof at Scale

We're not a prototype company.
We are operating infrastructure today.

67+
Control nodes

distributed across
Southern California

50
MWh

Deployed,
scaling to 100+MWh

8+ industries
served

Our configurable platform
allows versatile applications

5-year
contract

With San Diego International
Airport

San Diego Airport

Revolutionizing demand power management at the busiest single-runway commercial airport in the US

- Critical Loop is optimizing across site batteries and on-site solar for San Diego International Airport
- Millions in projected savings over 5 years for the busiest single-runway airport
- Took over 17 BESS totaling 2MW/4 MWh, with more than 4 MW of Solar
- \$326,000 in savings since October 2025

Deployment window: October 2025, 5 year contract.
Setup time: <3 months to re-commission existing facility.
Power: 4 MWh x 2 MW



Terawatt: Transportation & Logistics Hub

Unlocked fast, cost-effective grid access for EV fleets at constrained sites, accelerating operations and reducing costs

- Critical Loop delivered 10 MW of flexible power across two sites through first UL-3141 certified flexible interconnection in Southern California Edison (SCE) territory.
- Energized sites to full revenue generating capacity in 6 months vs. 5 years expected utility upgrade.



Deployment window: Q3 2025, ongoing

Setup time: <1week

Power: 10 MW

Coming Soon

Two Commercial Real Estate Deployments



**Our power solution for grid-constrained developments
that keeps industry and jobs in California**

THE PROBLEM

- Hard deadlines to firm power in order to retain high power businesses
- Grid-constrained sites, utility delivery delayed 36 months
- Generators a non-viable option given air quality requirements

OUR SOLUTION

- Grid: ~9 MW (firm + flexible)
- Battery: 12MW / 60 MWh via CLB 5100s
- Backup: 3.5 MW diesel, emergency only

WHY CRITICALLOOP

- Only certified stack: UL 3141+ IEEE 2030.5
- Only provider at this scale
- US-made hardware
- 95% lower cost: \$9M for 18mos / 6 buildings vs. \$9M for 6 mos / 1 building with generators + fuel

Thank you

Bala Ramamurthy, CEO
bala@criticalloop.com





Tim Fogarty
CEO
tfogarty@pcchydrogen.com

The Market is Desperate for a Solution Today



POWER GENERATION



HYDROGEN MOBILITY



ARTIFICIAL INTELLIGENCE
US Data Center Power Demand Projected to Double by 2027
May 20, 2026, SH

THE WALL STREET JOURNAL

THE HILL

MarketWise

Elon Musk Is Buying Up America's 'Dark' Data Centers

Texas slams on the brakes for 1,800 data centers, power grid requirements are five times higher than peak r...

The New York Times

New York Enacts Nation's First Statewide Moratorium on Data Centers

Gov. Kathy Hochul signed an executive order pausing the construction of the largest data centers for one year while the state assesses their effects on the environment and energy use.



Gov. Kathy Hochul of New York has backed artificial intelligence as a tool for research and good governance, but said innovation must be balanced with public benefit. Cindy Schultz for The New York Times

CAL MATTERS
Race to Zero: California's bumpy road to electric cars and trucks

ENVIRONMENT
Hardly anyone over \$300 million

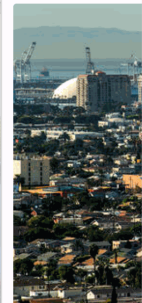


CLIMATE CHANGE
California new that's 'unlike

Los Angeles Times

Cleaning up smog is suddenly much harder. Reined in by Trump, what will California do next?

By Alejandra Reyes-Velarde, CalMatters, 2025-07-07



This story was origi

At an electric vehicle ecutives in California agency has faced th

"This president, this utive officer of the s they certainly won't

CleanTechnica
YouTube TV WE MADE FINDING Y EASIER THAN FINDING Get YouTube TV, with 500+ channels of vari

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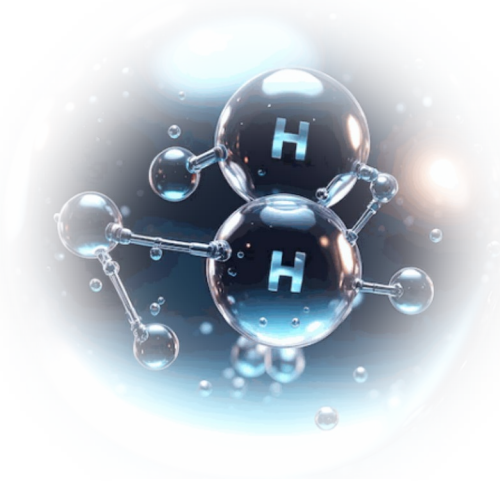


Caption: Chatgpt generated illustration of hydrogen station maintenance and complexity.

When 70% Of Stations Go Dark: The Fragility Of California's Hydrogen System

3 months Michael Barnard 16 Comments

Clean H₂ can be the immediate solution to these problems



ENTRY BARRIER

01
Price

\$\$\$

02
AVAILABILITY & STORAGE



03
CARBON INDEX



Clean energy, produced where it's needed.

We make low-cost hydrogen on site from ethanol, one source for clean power generation and zero-emission fleet fueling. Low-cost because we skip hydrogen's biggest expense: moving it.



WHY IT WINS - AT A GLANCE

Lower cost

than delivered H₂ or diesel power

Hydrogen made at the point of need, without the cost of moving it

Months

not years

To deploy on site, with no wait in a grid interconnection queue

Up to 20 MW

building blocks

Power generation capacity, scaled site by site

Weeks

of feedstock on site

Ethanol stored on site, delivered by existing rail and truck

Zero

NOx and PM

Combustion-free, unlike diesel generation

Local – Resilient – Scalable – Available – Secure

PROBLEM
WHAT WE DO
COST
PROJECTS

WHAT WE DO

One Distributed Process. Multiple Products and Applications.

Ethanol in. Clean hydrogen out. No flame. A liquid already moved at scale becomes clean hydrogen, clean power, and valuable co-products at the point of use.

STEP 1

Deliver
Ethanol by
existing truck &
rail

Ethanol delivered by existing infrastructure, carrying 2.5× more hydrogen by volume than liquid H₂

STEP 2

Reform
No flame

PyroCat™ catalyst converts ethanol on site, without combustion

STEP 3

Purify
To spec

A clean hydrogen stream, conditioned and ready for power or fueling

STEP 4

Deploy
Multiple
products

Clean hydrogen, clean power and co-products from one process

BEYOND POWER AND FUELING

Multiple Applications for Our Hydrogen and Coproducts

The same process also serves complementary uses of hydrogen (refining, e-fuels, and distributed green ammonia) and yields coproducts with real market value: biogenic CO₂ for food & beverage, SAF, and eMethanol production; nitrogen for cooling; and clean water.

FOUR OUTPUT STREAMS FROM ONE FEEDSTOCK



Hydrogen

Feedstock for refining, e-fuels, e-ammonia and fertilizer, and on-site fleet operations.



Biogenic CO₂

Food & beverage, greenhouse cultivation, cold chain, sequestration, and e-fuels.



Liquid nitrogen

Cold chain, food processing, and industrial applications.



Water

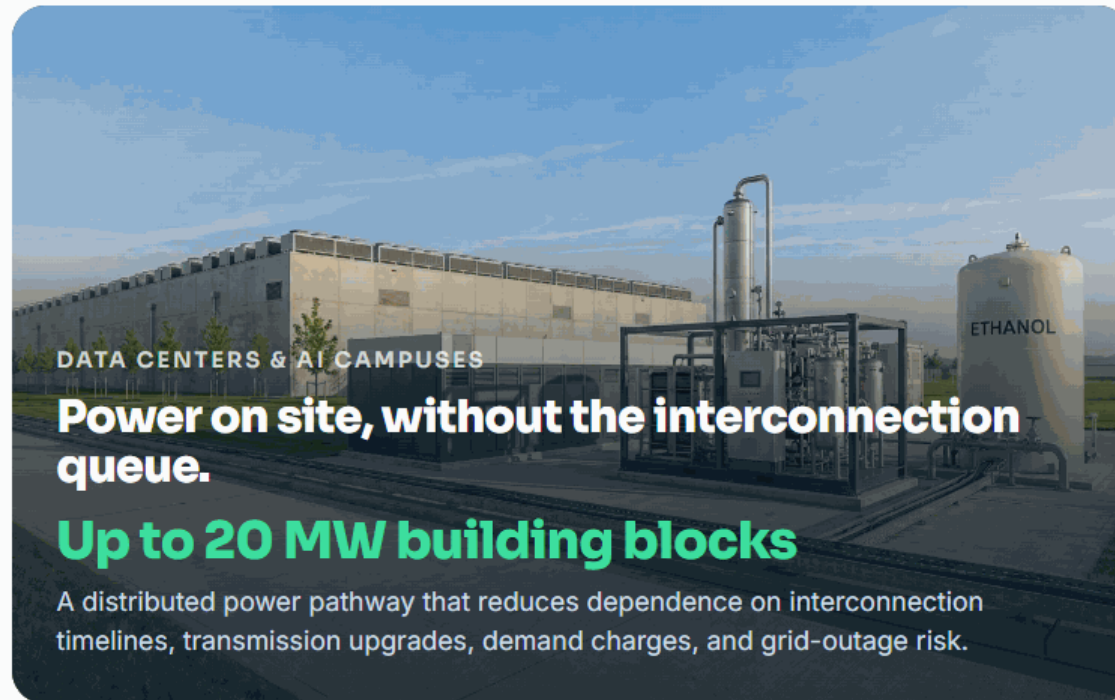
A usable output stream from the hydrogen-to-power conversion process.

THE CORE IDEA

Pioneering a New Hydrogen Production Process to Enable Power Generation and ZEV Mobility

One low-cost hydrogen source, produced on site, deployed two ways and generating valuable coproducts.





WHY IT WORKS

Weeks

of feedstock, stored on site

No NOx or PM

an easy path to permitting

Diesel parity

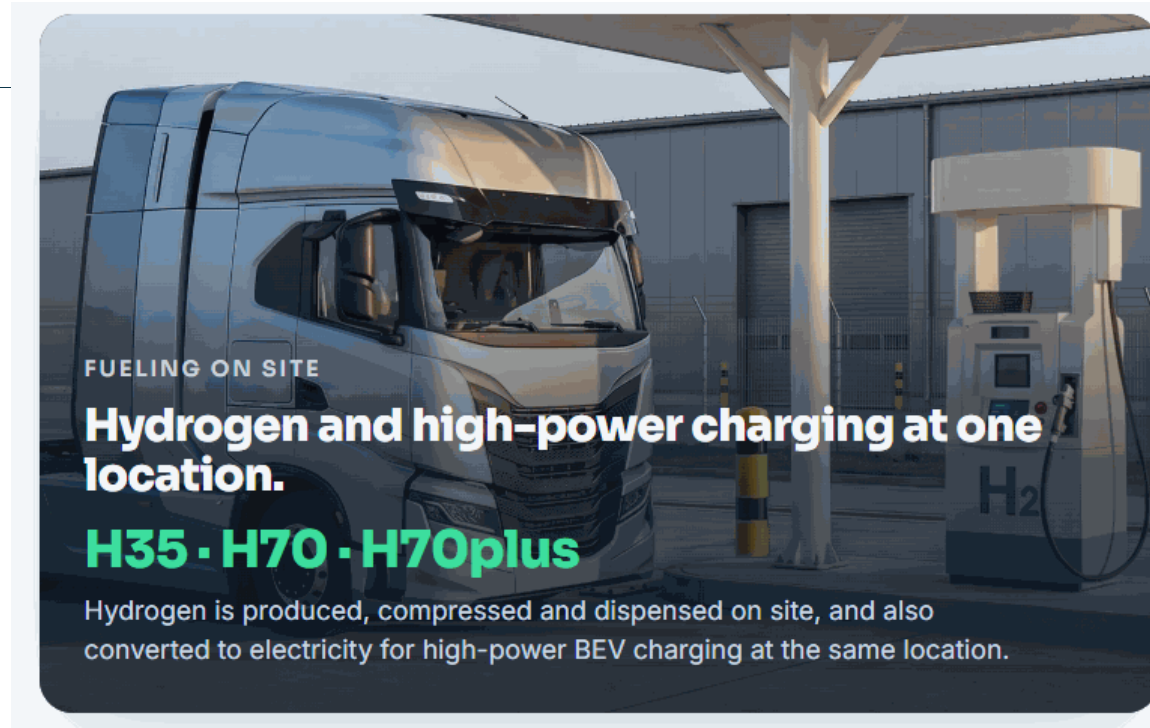
or better

Net water

generated, not consumed

Liquid N₂

on site for cooling loads



WHY IT WORKS

Lower cost

than delivered hydrogen

No H₂ transportation

no liquid H₂ to truck in

Tax credits

approval in process with the EPA

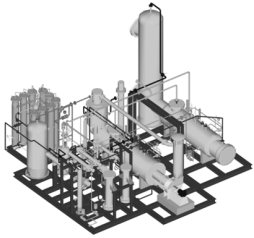
Weeks

of stored feedstock

H₂ + BEV

one site, mixed fleets

>90% avoided grid electricity

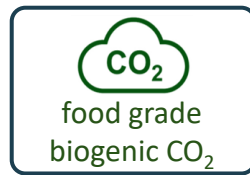


CORE PRODUCT



\$6-8

BYPRODUCT SALES



-\$2

-\$1

TAX INCENTIVES



-\$2

\$1-3*

<\$ 0.20*
/kWh



* All values on this slide are indicative and depend on ecosystem

Objectives

- Plant operating by end of 3Q 2026
- Demonstrate 40x scale-up of technology
- Enable local H₂ ecosystem

H₂ Offtake

- Industrial use - resulting in >50% decrease in customer's H₂ cost
- Power generation – deployment of MPU's in Stage 0, and >500kW in Stage 1
- Mobility – LD and HD dispensing

Biogenic CO₂ Offtake

- Direct sale
- Concrete plant wastewater acidification



Cloverdale Site Map — PCC Hydrogen · aerial imagery: USDA NAIP 2023 via USGS, public domain

Objectives

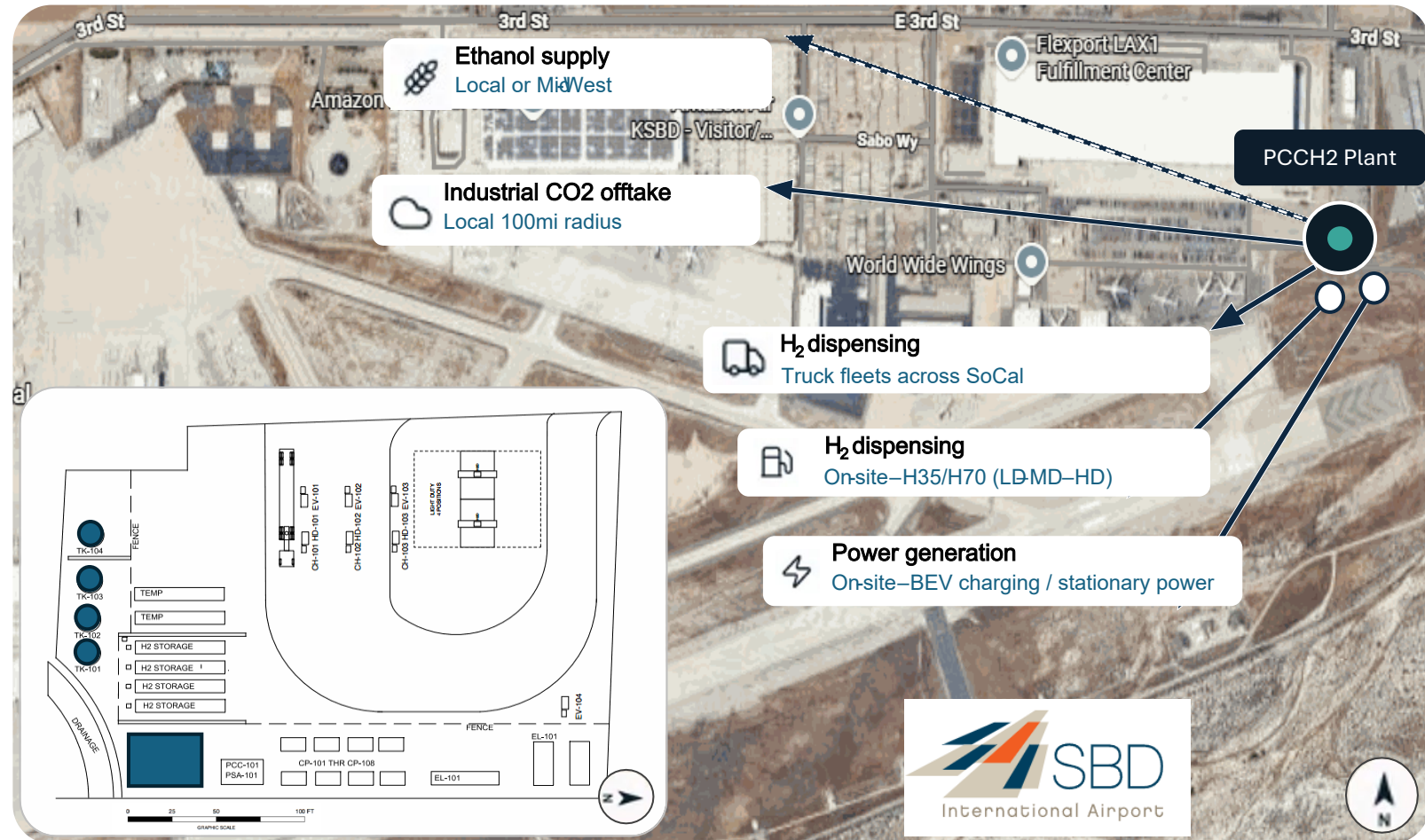
- 1ton H₂/ day commercial plant at San Bernardino Airport operational by Q3/2027
- Fast following scale up to 3ton H₂/ day
- Enable local H₂ ecosystem
- Resilient plant operation to secure BEV charging and H₂ fueling during grid blackout

H₂ Offtake

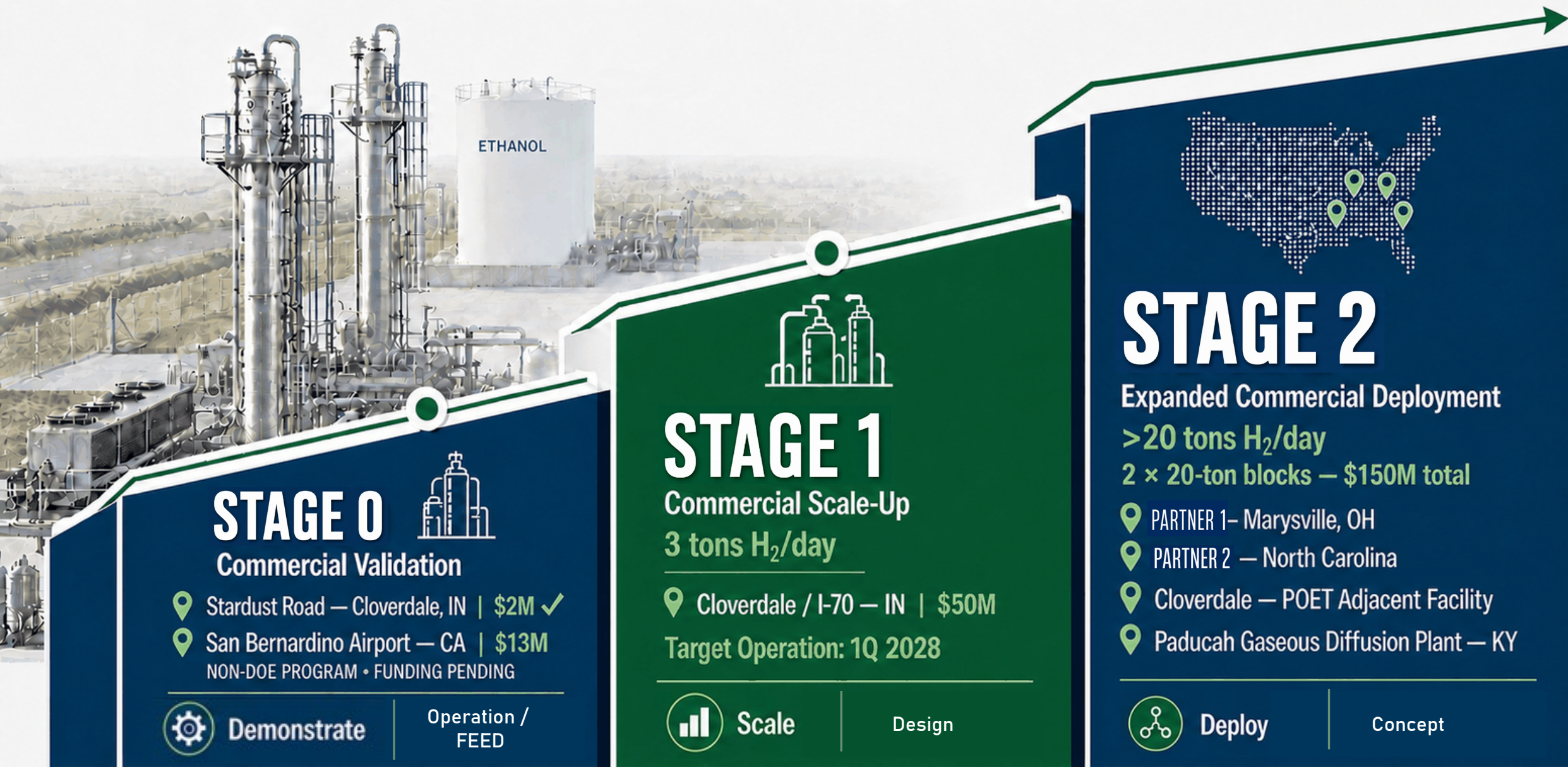
- On-site dispensing H35/H70 (LD -MD-HD)
- On-site BEV fast-charging
- H₂ distribution to the local offtake – support of the East-West drayage truck corridor

Biogenic CO₂ Offtake

- Direct sale via local partnerships



PATHWAY TO COMMERCIAL DEPLOYMENT





Thank you

Tim Fogarty

CEO

tfogarty@pcchydrogen.com

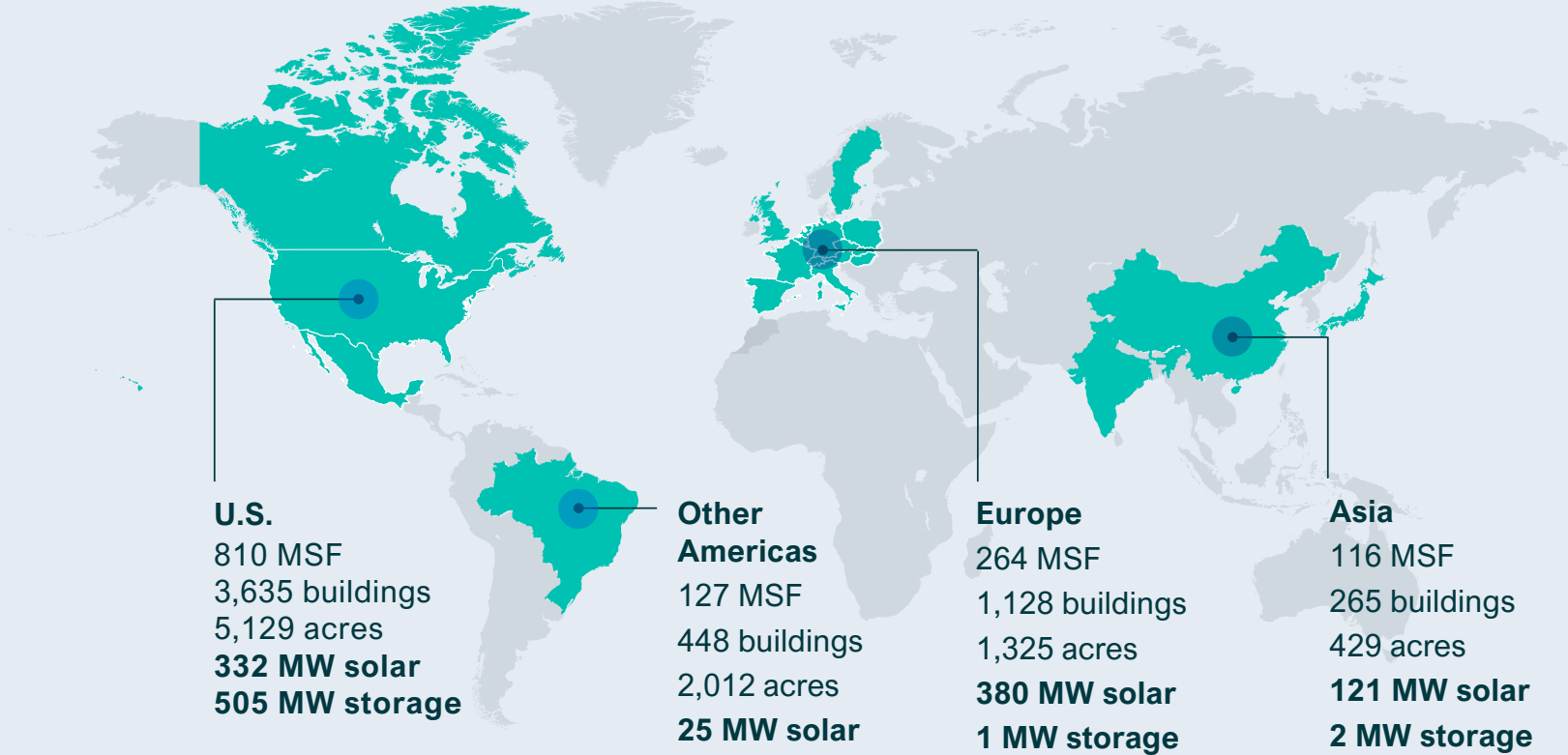


Innovative Energy Solutions

SCAQMD Governing Board Retreat

The world's most valuable logistics platform

Built on unmatched scale in logistics real estate. Digital infrastructure and distributed energy expand the moat — reinforcing our position within essential infrastructure.



\$3.2T

of goods—the equivalent of 2.9% global GDP—flowed through Prologis warehouses in 2024¹

\$240B

assets under management

1.3B

square feet, 20 countries

6,500

customers

5.8 GW

Power pipeline for data centers

\$68B

third-party AUM

\$41B

build out of land bank (TEI)²

A2/A

rated by Moody's/S&P

1.4 GW

Solar and battery storage installed

Note: Prologis data as of June 30, 2026.

1. Source: Oxford Economics as of December 31, 2024.

2. Total Expected Investment (TEI) represents total estimated cost of development or expansion, including land, development and leasing costs. TEI is based on current projections and is subject to change.

Prologis OnPrem Power: Energy, Delivered Faster

What is OnPrem Power?

- It can include:
- Natural gas generation (recip, fuel cell, lgen)
 - Energy storage systems (batteries, hydrogen)
 - Combined heat & power systems (absorption chiller, ORC, steam)

Metric	Only Grid Interconnection	OnPrem Power + Grid Connection
Time to Power	5–10 years	6–18 months
Scalability	System dependent	Flexible
Resilience	Single system	Multiple energy pathways

Proven at Scale

Site Fully Energized in Just 12 Months

10MW

prime power microgrid

5.2M

Square feet warehouse
power equivalent

Fuel-flexible

for energy security with
NG, propane,
hydrogen, etc.



Case Study

Customer: Performance Team

Location: Torrance, California

Key features:

- Linear generators, BESS, DCFCs
- Working with grid upgrade timelines
- Additional reliability when grid joins
- Renewable natural gas & H2 flexible
- Developed in LA, a highly regulated district

Ontario Green Hydrogen Pilot

Key Features

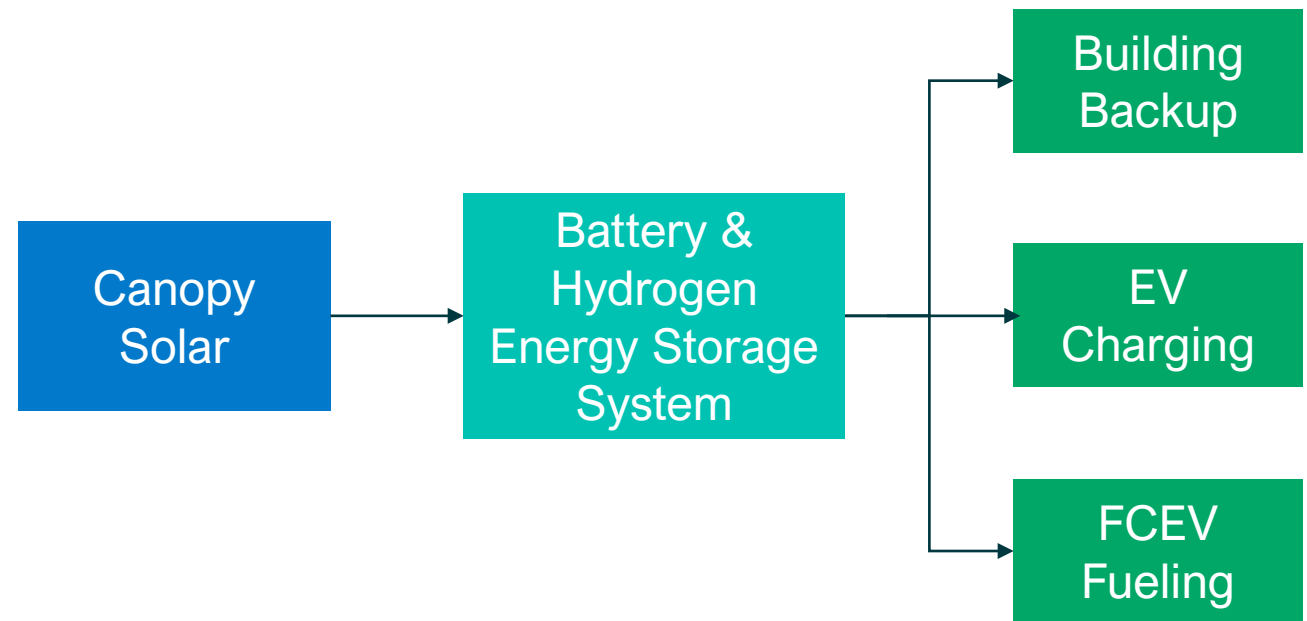
1. Off-grid 2MW canopy solar producing green hydrogen, stored for EV fast charging, hydrogen dispensing, and building backup power.
2. Demo vehicles in scope: Two Honda H2 CRV, Honda Fastport, & H2 forklift.

Top Development Highlights

1. Innovative low-cost solar canopy
2. Bonus: Hydrogen eVTOL compatibility

Status

1. Technology selection complete
2. Preliminary engineering being finalized
3. Funding options being assessed



Fontana HATCH Project

Key Features

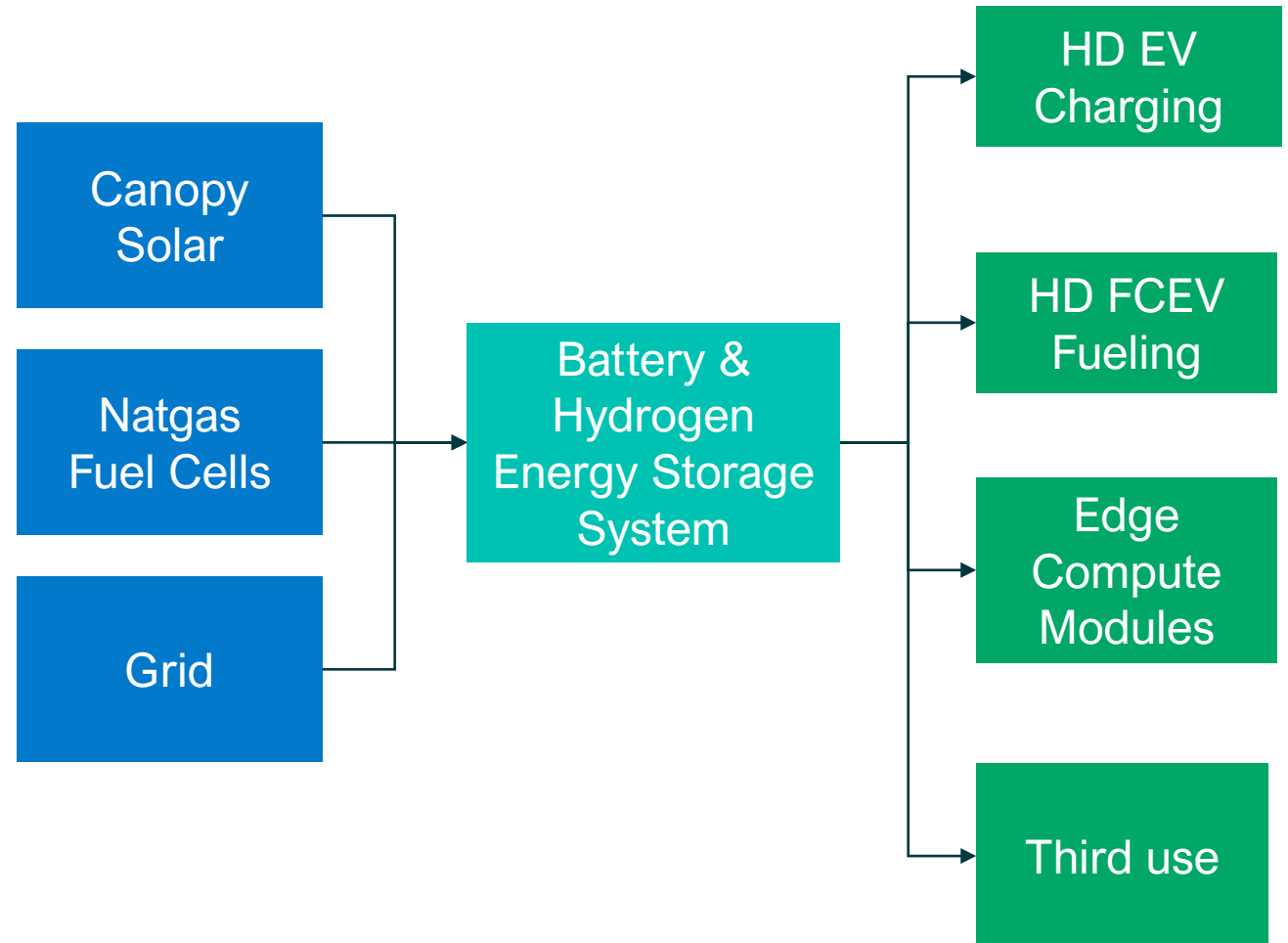
1. MW-scale Heavy Duty focused hub site with infrastructure cost share support from edge compute
2. Waste heat recapture from fuel cells
3. Produces surplus water (potable)

Top Development Highlights

1. Bonus: Space for tertiary use looks feasible including surplus water & compute waste heat utilization benefits. E.g. Urban farm?

Status

1. Technology selection and site layout complete
2. Preliminary engineering being finalized
3. Funding options being assessed incl. tertiary use exploration





JT Steenkamp

VP - Technology, Front-End
Engineering & Development

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 **PROLOGIS**[®]
ENERGY SOLUTIONS