



TRIG Infrastructure Meeting #8:

“If I Buy a Zero-Emission Truck, Where Can I Fill It Up?”

August 11, 2025

2025 TRIG Infrastructure Panel

Co-Chairs:

Lisa McGhee, Tom's Truck Center
Leslie Goodbody, CARB
Kate Reid, CEC

Panelists:

Angela Clapp, Port of Oakland
Aravind Kailas, Volvo Group NA
Arturo Hernandez, A&C Transportation
Blaine Wagner, Clark Pacific
Carlos Cardenas, CVM Fleet Services
Chris Shimoda, Consultant
Chuck Loy, Sysco Corporation
Clair Keleher, Bay Area AQMD
Collin MacGregor, Range Energy
Cristina Marquez, IBEW Local 596

Panelists:

Damon Wyckoff, Calaveras County Water District
Dirk Piersma, Gemperle Farms
Emmanuel Carrillo, Talon Logistics, Inc.
Erick Karlen, Pacific Gas & Electric
Eugene Litvinov, Hyundai Motor NA
Glen Kedzie, Truck Renting & Leasing Association
Glenn Choe, Toyota Motor NA
Isaac Ritter, J.B. Hunt Transport Services
Jamie Hall, EV Realty
Jessie Denver, GoBiz
Jimmy Andreoli II, Baker Commodities
Jose Rodriguez, Chevron Hydrogen Business Development

Panelists:

Lindsay Shigetomi, Environmental Defense Fund
Mark Koppang, Raley's
Matt Miyasato, First Element Fuel
Patricia Quiroz, CA Municipal Utilities Assoc.
Ralph Adams, BorgWarner
Richard Battersby, City of Oakland
Richard Parenteau, No Carbon Fuel,
Ruth Alfson, Matrix Consulting Group
Michele Canales, Union of Concerned Scientists
Sam Vercellotti, Terawatt Infrastructure
Scott Moon, Los Angeles Department of Water and Power
Steven Fenaroli, California Farm Bureau

Agenda

- Zero-Emission Infrastructure website:
 - <https://ww2.arb.ca.gov/zero-emission-infrastructure>
- Presentations- "If I Buy a Zero-Emission Truck, Where Can I Fill It Up?":
- Shell, First Element Fuels, Pilot, WattEV, Forum Mobility, and Prologis Mobility each covering:
 - Public and semi-public charging and hydrogen stations for medium- and heavy-duty trucks
 - Stations open today and planned
 - Hours of operation
 - Number of ports/dispensers and charge/fill rates
- Q&A and Focused Discussion
- Recap and Next Meeting

Hydrogen Infrastructure Status

Matt Miyasato, Ph.D.
Chief Public Policy & Programs Officer



August 11, 2025

Who is FirstElement Fuel?

We are Driven...

To foster the widespread adoption of hydrogen across all energy sectors.

To improve the economics of fuel and energy consumption and reduce its footprint on our planet.

To change the energy industry.

And with it, the world.

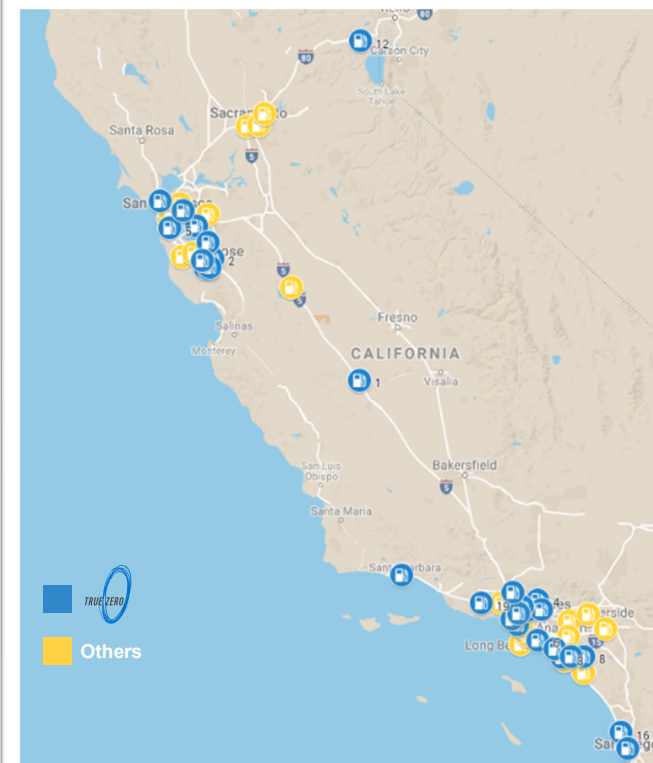


- Founded in California in 2013 to build & operate a hydrogen station network with a focus on the customer.
- Largest hydrogen network in the world, representing about 90% market share in California.
- Launched our True Zero brand, recognized as superior uptime and customer experience
- \$125M in CA Grants (largest awarded to any private company) + \$240M in Private Funding
- Developed and currently owns assets of more than \$20 Million in upstream supply
- Operates the True Zero Hydrogen Innovation Center to conduct R&D and in-house fabrication

Geographic Presence and Market Landscape

- Strategically located network of stations spanning the State of California so that customers can drive freely as if they were using a gasoline car
- ~15,000 fuel cell electric vehicles on California's Roads today
- 39 retail stations in operation, 1 HD station in operation, many in development

Network Spans Key Markets in CA



Status	Count	Station Type	Capacity
Open	19	Retail (Gaseous)	250 kg/day
Open	20	Retail (Liquid)	>1500 kg/day
Open	1	HD	>10,000 kg/day

SALES RECORDS

	Month of Mar 2023	Single-Day Record
Number of Fills	60,430	2,544
Kilograms Sold	161,548	6,112

RECORD DAY - SINGLE STATION *Baldwin Park, CA April 15, 2022*

Number of Fills	257
Kilograms Sold	752

**Millions of
successful fills
Zero safety
incidents**





San Diego



Fountain Valley

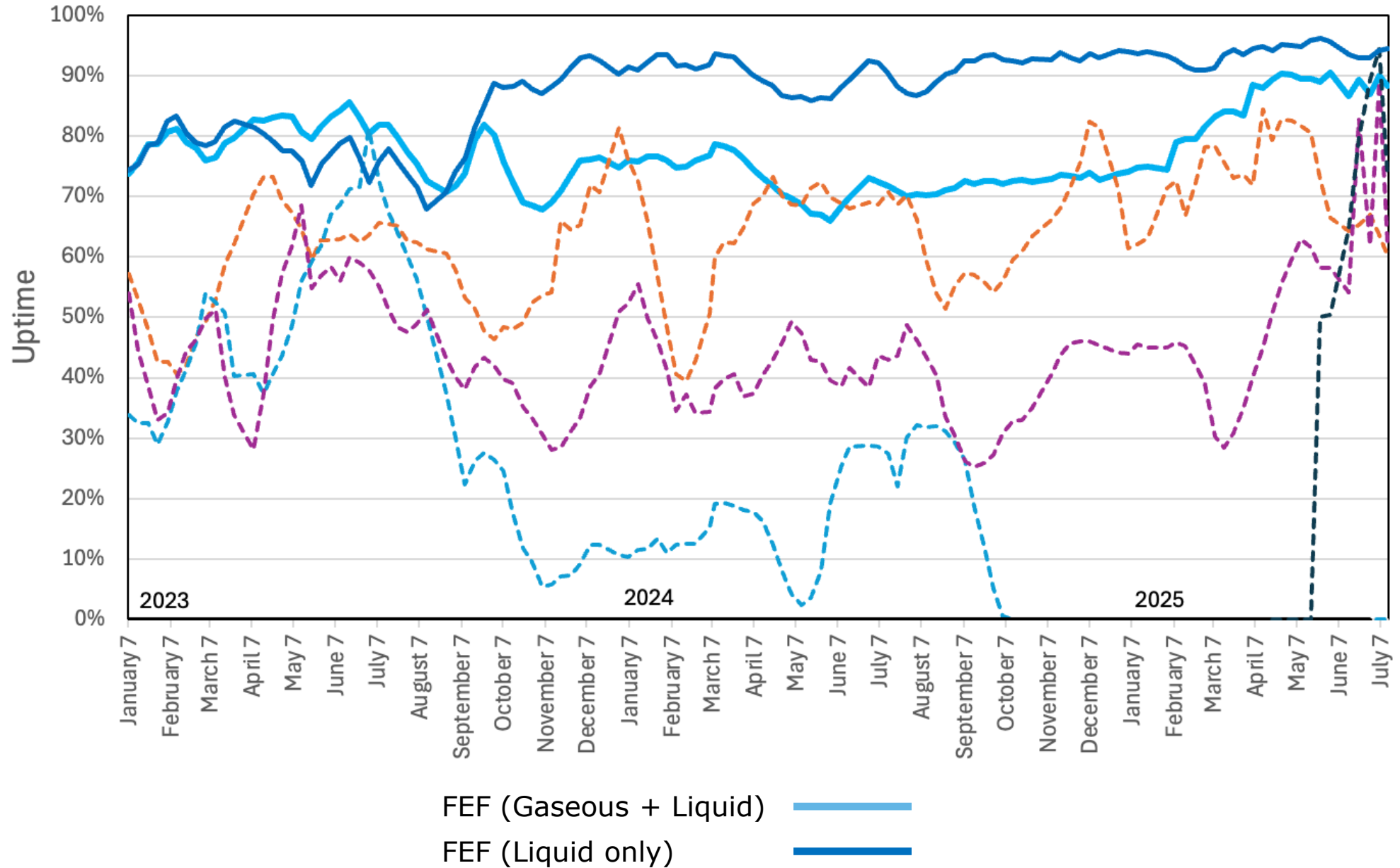


Cupertino



Costa Mesa

Uptime Comparison



Leveraging Light-Duty Experience for Heavy-Duty



- First-ever real-world HD station with fast-fill capability
- Part of the CTE NorCal Zero jointly funded project by CARB and CEC
- Two simultaneous truck fueling and back-to-back fills
- Under 10 minutes (70 kgs)
- 30-100 trucks per day
- Includes 4 passenger car fueling positions

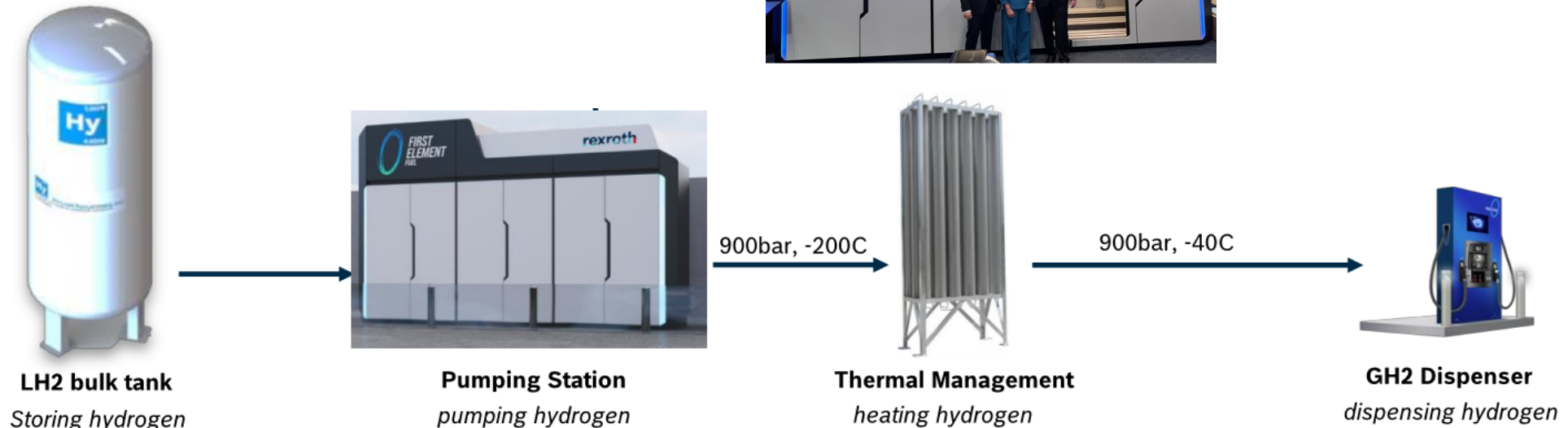


Bosch Rexroth Partnership

Bosch Rexroth – Hydrogen CryoPump Future Station Architecture



Prototype Unit
Displayed at Hannover
Fair with Rexroth CEO,
Board Member and
Bosch CEO



Testing and Validation
Ongoing at FEF facility
in Livermore. First
commercial unit will
be installed in Port of
Oakland HD station

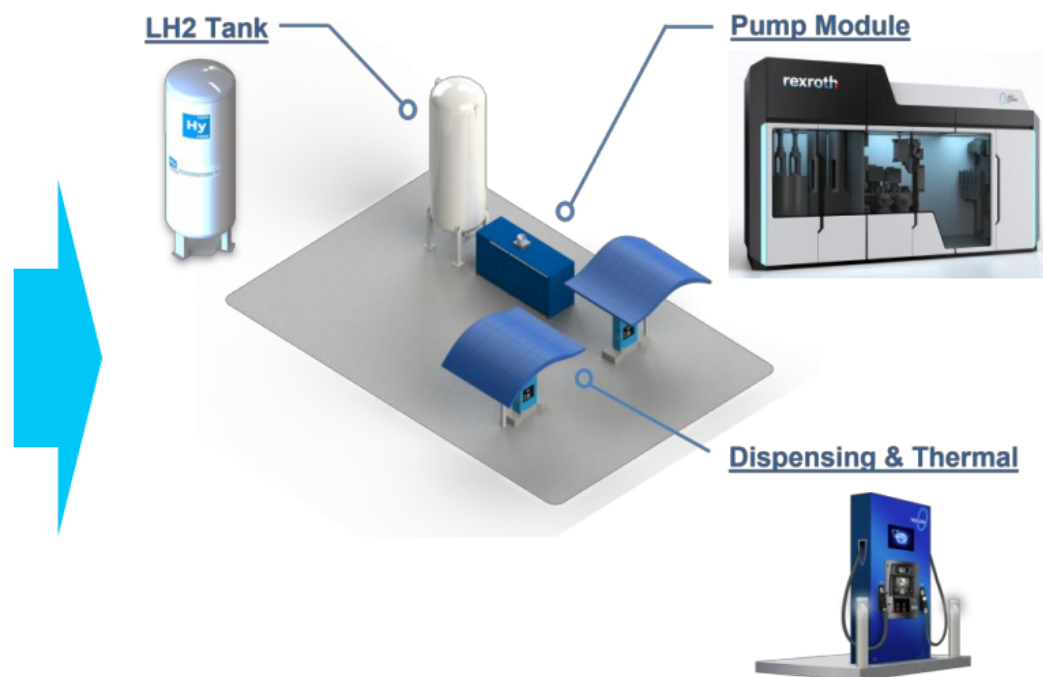


Port of Oakland Installation

Hydrogen Refueling Station - Port of Oakland



Installation in Oakland
in late 2025



Greater efficiency of design – lower capital
And significantly greater pumping capacity
with lower losses.

CARB Questions

- Stations that are open today and within the next year
 - Port of Oakland open
 - Secured sites – McClellan Park (Sacramento), Kettleman City, Fresno, Livermore
- Hours of operation
 - 24/7
- Station access
 - Current plan is for public access
- Fuel price
 - Currently too high
 - Depending on commitment, can be negotiated
- Payment mechanisms
 - Credit card or fuel card
- Future stations
 - 3 MD capable sites next year (Buena Park, Riverside, San Bernardino)
 - Additional HD sites depending on funding, LCFS, and ARCHES, etc.





A white Pilot truck is driving on a multi-lane highway towards the viewer. The sky is filled with dramatic, dark clouds with a bright light source, likely the sun, breaking through on the left side. In the background, another truck and a car are visible on the road. The landscape on the left is green and hilly, while the right side has a concrete barrier.

PILOT

COMPANY

FUELING LIFE'S JOURNEYS

**Pilot Heavy-Duty Hydrogen
Refueling**

CARB TRIG Meeting

August 11, 2025

Pilot California HRS Opportunity

Objective: Deploy a heavy-duty hydrogen refueling station (HRS) network that supports customer demand with zero carbon hydrogen supply



Pilot Phase 1 HRS:

- CEC and SCAQMD funded locations Rialto, Lebec
- Planned commercial operations Q4 2026

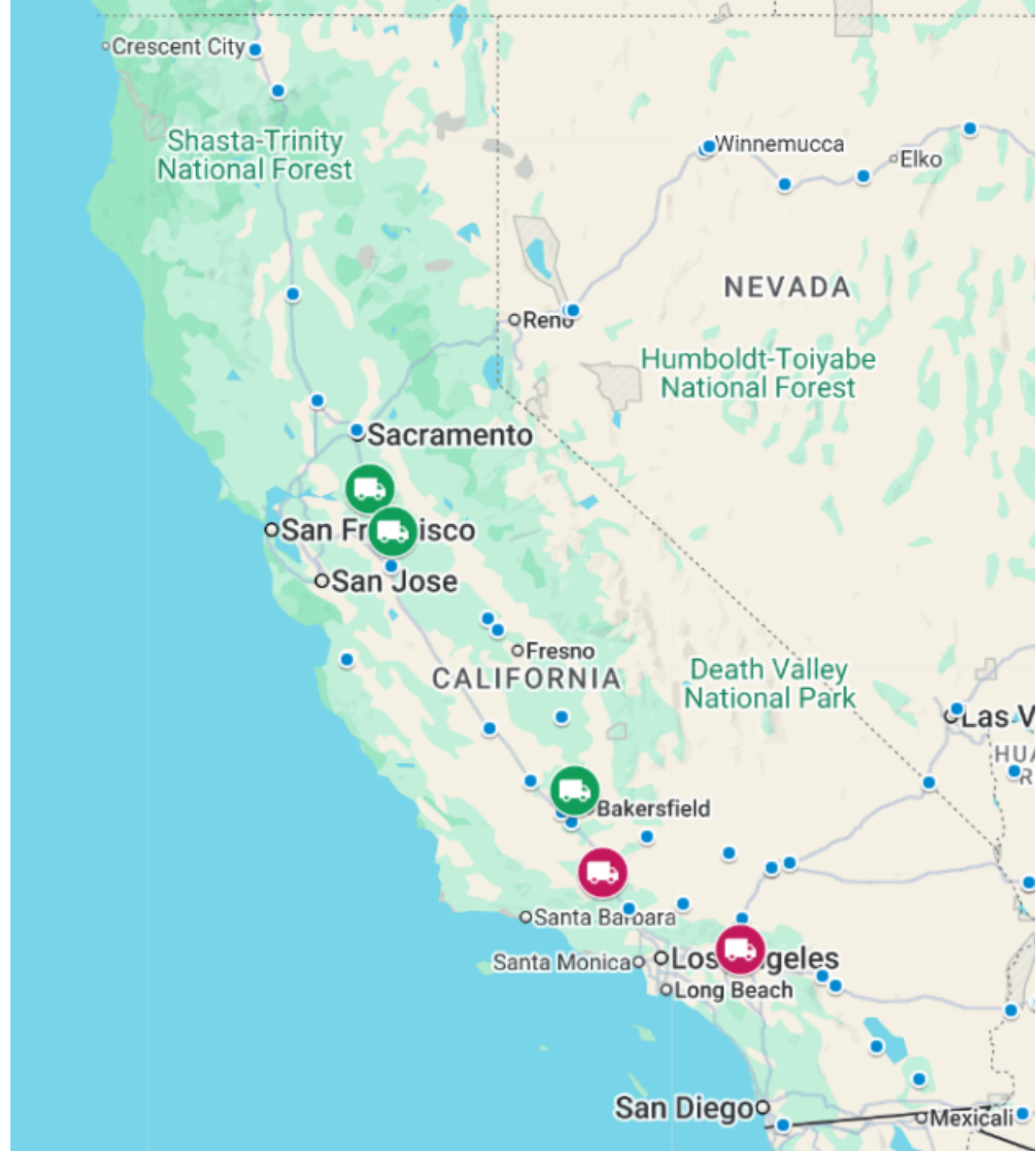


Pilot Phase 2 HRS:

- CEC Funded locations: Lodi, Ripon, Bakersfield
- Planned commercial operations TBD

Pilot Seeking Customer Engagement:

- Seeking input from fleets on where are the best locations to deploy HRS with awarded state and federal funds.
- ARCHES has allocated Pilot \$50m for up to 10 HRS





Pilot Heavy-Duty H2 Fueling

- **Pilot HRS design:**
 - Designed for Medium Heavy Duty H2 refueling
 - 7,000 kg/day (effective) capacity per location
 - 2 refueling lanes, ~200 trucks per day/lane
 - 4 tonnes on-site liquid H2 (LH2) storage
 - 2 product trains for added HRS reliability
 - Delivery rate 4+ kg/min per lane, est. 10-15 min fills
 - Expandable design (modular)
 - Fast, familiar and seamless customer experience



**Accelerating Zero-Emission
Transportation & Supply Chain**



at a Glance

Leading the market for electrification of heavy-duty freight

OUR MISSION & VISION

We accelerate the transition to all-electric transportation in the heavy-duty trucking industry by harnessing technology and data to improve the health of our air, planet, and people.

NATION'S LEADING CHARGING NETWORK

Founded in 2020, we've rapidly become the leader in zero-emission electric charging depots across the United States.

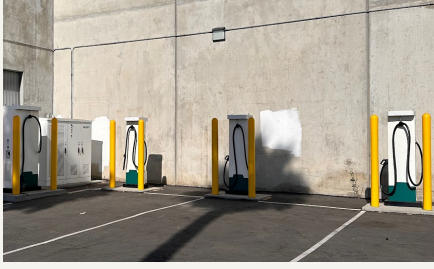
END-TO-END LOGISTICS ECOSYSTEM

State-of-the-art infrastructure including megawatt-capable charging, in-house engineering, AI-driven transport optimization, a robust data warehouse and rapidly grow EV fleet.

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Depot Locations

PORT OF LONG BEACH	SAN BERNARDINO	GARDENA	BAKERSFIELD	VERNON
				
 Pier A Way, Long Beach, CA	 S E St. & Century, San Bernardino	 S. Broadway St, Gardena	 CA Highway 65, Bakersfield	 4199 Bandi Blvd, Vernon, CA
 40+ Trucks per Day	 90+ Trucks per Day	 40+ Trucks per Day	 200+ Trucks per Day	 20+ Trucks per Day
 4 MW of Grid Connection	 8 MW of Grid Connection	 4 MW of Grid Connection	 Up to 25 MW of Solar / 20 MW of Grid Connection	 1.5 MW of Grid Connection
 26 360KW CCS 8 MCS - 2026	 24 360KW CCS 30 240KW + 6 MCS - 2025	 12 360KW CCS	 32 CCS 360KW 15 240KW + 3 MCS	 4 240KW CCS, 1 MCS
 Ports of LA and Long Beach	 Inland Empire Warehouses	 Ports of LA and Long Beach	 Close to big shipper distribution centers	 Vernon/Commerce/ Santa Fe Springs



ELECTRIC SEMI TRUCK

Access to Nikola, Volvo, Tesla, and other OEM's

CHARGING FACILITIES

Fast charging included and 24/7 access to all WattEV locations

SUPPORT

Warranty, maintenance, and 24/7 customer service support included

DRIVER TRAINING

Complete certification program

Truck-as-a-Service

Fleet electrification has never been easier. TaaS is an all-inclusive electrification package.

**Expand your reach to
sustainability-focused
shipper customers**

1

Fixed Monthly Rate*



Thank you.



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(949) 916 - 2751

www.wattev.com



Zero Emissions Fleet Solutions

Driving a Sustainable Future of Freight



Forum Mobility develops, owns, and operates multi-fleet charging depots for MHD electric trucks and offers vehicle financing to help fleets electrify



Founded by Forum Energy Partners in 2021. Vast infrastructure experience with **\$6B+** capital projects globally.



Formed \$400M joint-venture in 2023 with CBRE Investment Management and Homecoming Capital targeting equitable electrification of port drayage.



Real World Fleet Charging Experience with fleets of all sizes. Supported 3+ years of electrified drayage at the Ports of Los Angeles and Long Beach.



Forum's EV Charging Solutions: Offsite & Behind-the-Fence

- 1 Forum owned & operated EV charging hubs**
 - + Pull-through & Bobtail charging
 - + 24/7 Access
 - + Gated with full time staff and security
 - + Driver parking and amenities
- 2 Behind the fence charging infrastructure at customer site or warehouse**
 - + Requires long-term site control, power availability, and onsite space



FM Harbor – Port of Long Beach

Largest port-based EV Charging Depot in the world

Key Specs:

- + **Opened** Dec 2024
- + **360-kW** Chargers
- + **44** Charging Spaces
- + **9 MW** of Grid Power

Amenities:



Fully Staffed & Nighttime Security



Secure Gated Entry/Exit



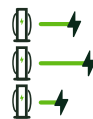
Clean Restrooms



Vending & Picnic Area



Personal Vehicle Parking



Charging Management Software



Customers Include:



Typical Forum Mobility Depot Layout

Bobtail & Box Truck Chargers

Pull-through Chargers

Lighting for 24/7 Operations

Wide Turning Radii

Secure Gated Lots

Auto Parking

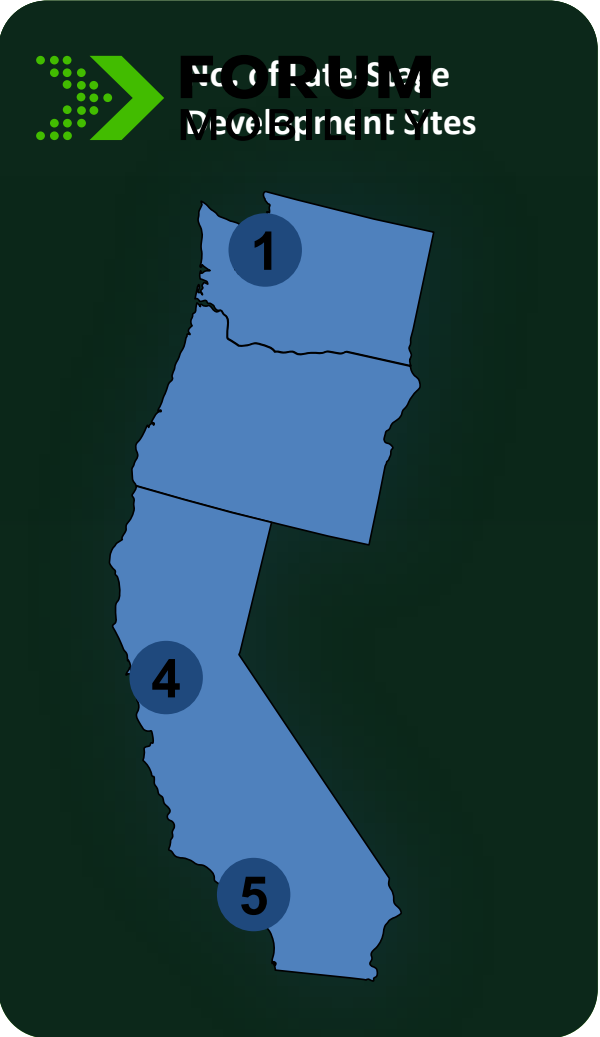
Command Center & Driver Lounge

FM Hermanas

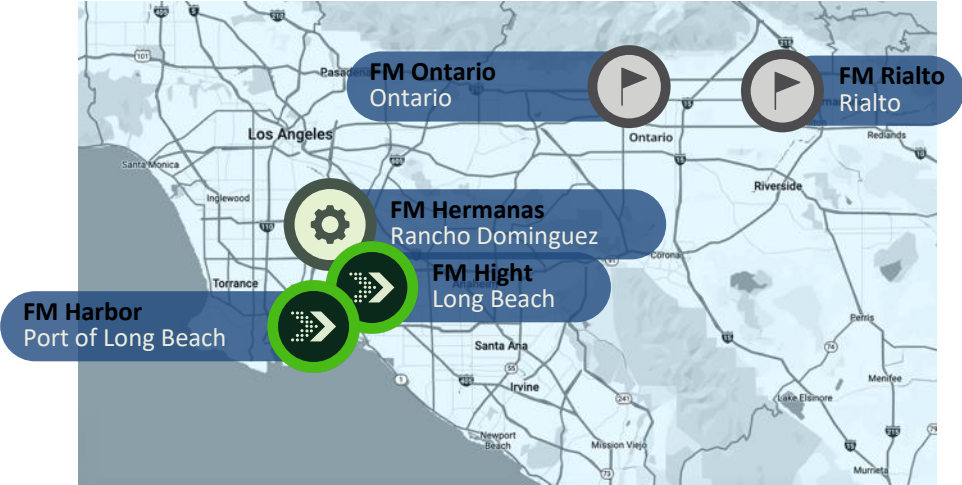
Rancho Dominguez, CA
18 MW / 22 Pull Through Stalls

*Depot design subject to customer 'Build-to-Suit' requirements.

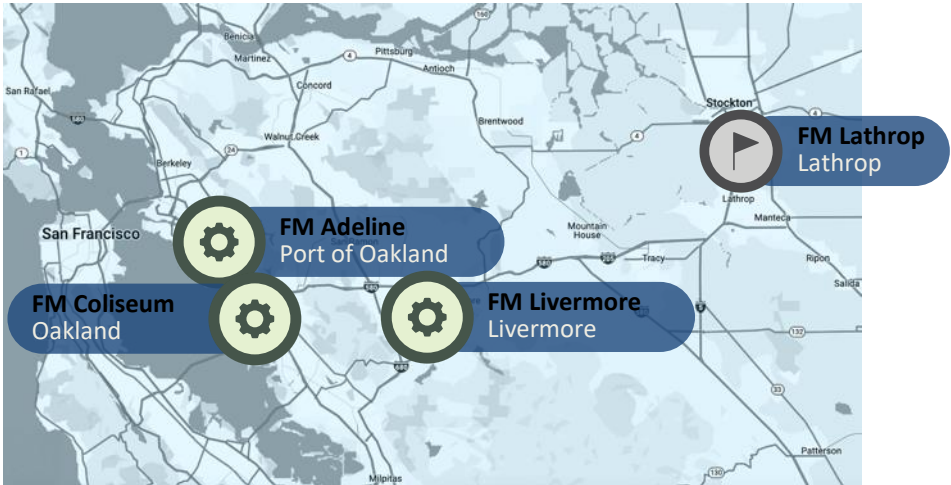
Robust Development Pipeline



Southern California



Northern California



Seattle / Tacoma Area





Ben Goossen

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forummobility.com

Northern California Sites



FM Adeline: Port of Oakland

1401 Middle Harbor Road
Oakland, CA 94607

- + 3-5 Year Charging Services Agreement
- + 24/7 Site Access
- + First-come, first served pull-thru or dedicated bobtail charging
- + Secure – Gated ingress & egress, passenger parking, clean restrooms, vending & picnic area
- + COD: Q4 2026

Primary	Charger Type	Dispensers	Spaces
Pull Thru	MCS	2	2
Pull Thru	CCS	4	2
Bobtail	CCS	4	4
Total		8	8



FM Coliseum: Oakland

5051 Coliseum Way
Oakland, CA 94621

- + 3-5 Year Charging Services Agreement
- + 24/7 Site Access
- + First-come, first served pull-thru or dedicated bobtail charging
- + Secure – Gated ingress & egress, passenger parking, clean restrooms, vending & picnic area
- + COD: Q3 2027

Primary	Charger Type	Dispensers	Spaces
Pull Thru	MCS	12	12
Pull Throughs	CCS	10	5
Total		22	17

FM Greenville: Livermore

151 Greenville Rd.
Livermore, CA 94551

- + 3-5 Year Charging Services Agreement
- + 24/7 Site Access
- + First-come, first served pull-thru or dedicated bobtail charging
- + Secure – Gated ingress & egress, passenger parking, clean restrooms, vending & picnic area
- + COD: Q4 2027

Primary	Charger Type	Dispensers	Spaces
Pull Thru	MCS	9	9
Pull Throughs	CCS	9	3
Total		18	12

Southern California Sites



FM Harbor: Port of Long Beach

260 Pico Ave
Long Beach, CA 90802

- + 1.67 Acres
- + 9 MW Capacity
- + Fully staffed & nighttime security, gate ingress & egress, command center, vending & picnic area, clean restrooms
- + Dedicated bobtail charging
- + Customers: Legacy Drayage, Green Fleet Systems, Nevoya, IMC, Talon Logistics, AI Trans, Hunter Logistics, and more

Primary	Charger Type	Chargers	Spaces
Bobtails	360kW Single Port	6	6
Bobtails	360kW Dual Port	19	36
Total		25	44



Operational: 12/2/24



FM Hermanas: Rancho Dominguez

2943 E. Las Hermanas St.
Rancho Dominguez, CA 90221

At a Glance:

- + 22 Pull-Through lanes equipped with:
 - + 1,200 kW MCS ports
 - + 560 kW CCS ports
- + 6 Bobtail Dwell Stalls with 320 kW CCS ports
- + Scheduled Online Date Q1 2027

Summary:

- + 18 MW Capacity
- + Secure gated ingress & egress, command center, vending & picnic area, clean restrooms, passenger vehicle parking
- + First-come, first served pull-thru or dedicated bobtail charging
- + Customers: Jaspem Truck Line, Green Fleet Systems, King Fio, Lincoln Transportation, Hunter Logistics, and more



FM Ontario: Gateway to the Inland Empire

*1.5 mi south of Ontario Airport near SR-60/I-15
Address announcement scheduled Q1 2026*

At a Glance:

- + 15 Pull-Through lanes equipped with:
 - + 1200 kW MCS ports
 - + 560 kW CCS ports
 - + 320 kW CCS ports
- + Scheduled Online Date Q3 2027

Amenities:

- + Staffed
- + Secure Gated Entry/Exit
- + Security
- + Restrooms + Vending
- + Office Space Available



EV Charging Hubs for MHD Fleets

Developing North America's Largest Charging Network

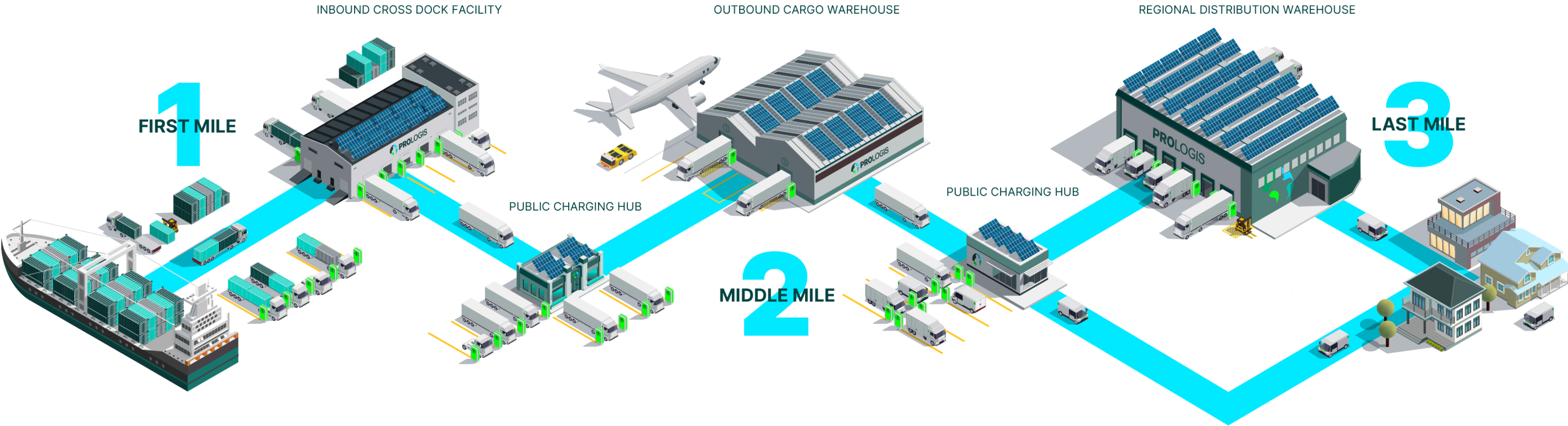


Presented by:
Jason Walter
Commercial Program Director, Hubs
jwalter@prologis.com

August 11, 2025

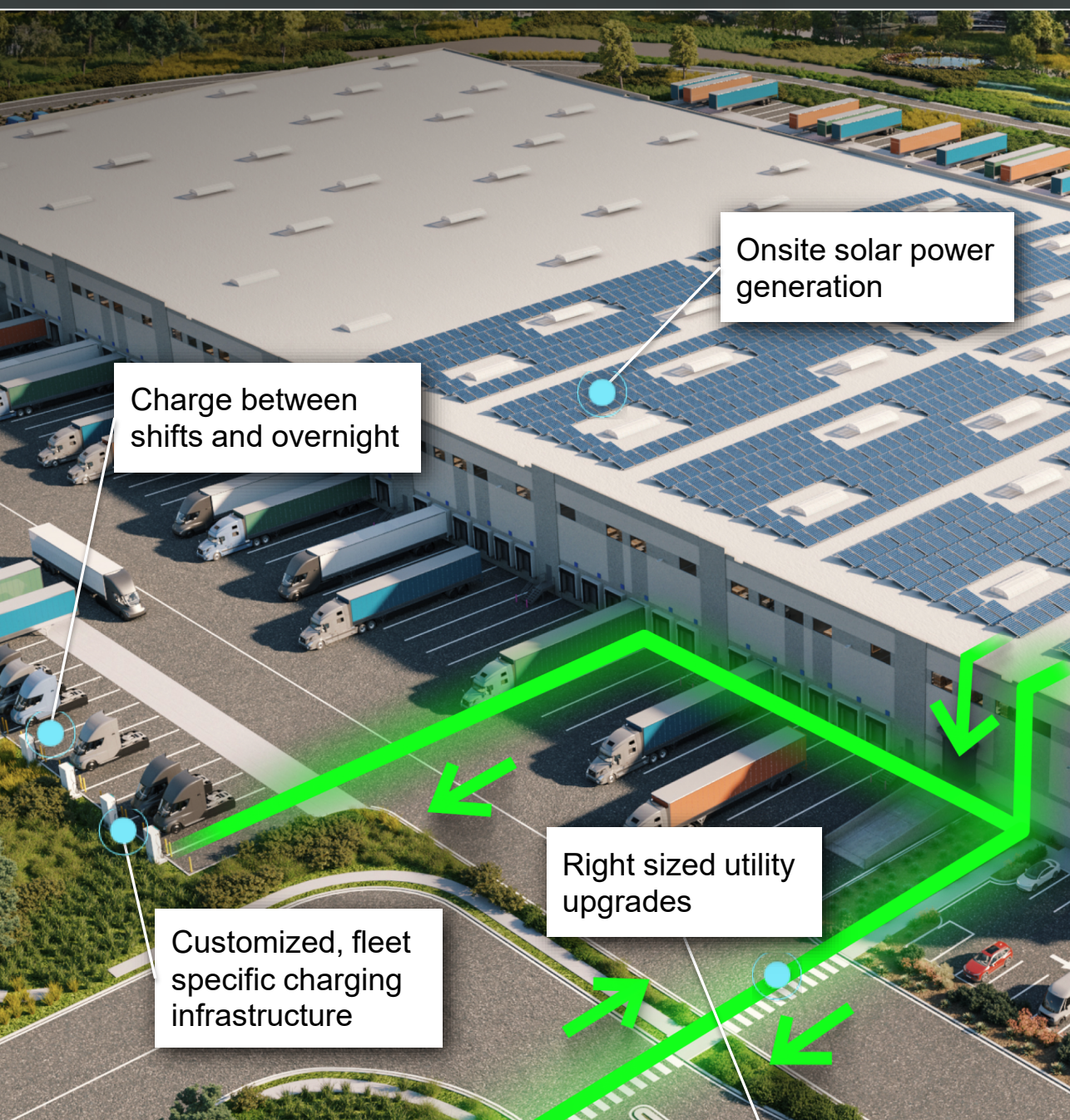
We Build End-to-End Charging Infrastructure for Logistics Fleets

We provide reliable charging infrastructure along key logistics routes and at your facilities, ready to meet your fleet’s needs, wherever it operates.



Prologis “Network” Effect

The Private Depot Charging Solution



The Public Charging Hub Solution



No more range anxiety. Power up on the go.

Vehicles Supported	API Integration	Hub Features*	Services Offered	Easy Button
          	    + more   	✓ CCS + MCS ✓ EV + H2 ✓ Pull-thru + nose-in ✓ App w/reservations ✓ 24/7 access ✓ Amenity building ✓ Secure site ✓ Uptime guarantee *site dependent	✓ \$/kWh CaaS ✓ All-in pricing OR energy as passthrough ✓ One-off charging AND dedicated charging ✓ Volume discounts ✓ Peak rate discounts ✓ Non-EV parking	1. Simplified pricing with no added fees 2. No capex or other front-end commitment 3. Lowest energy delivered (below utility)

A Strategically Positioned Network Nationwide

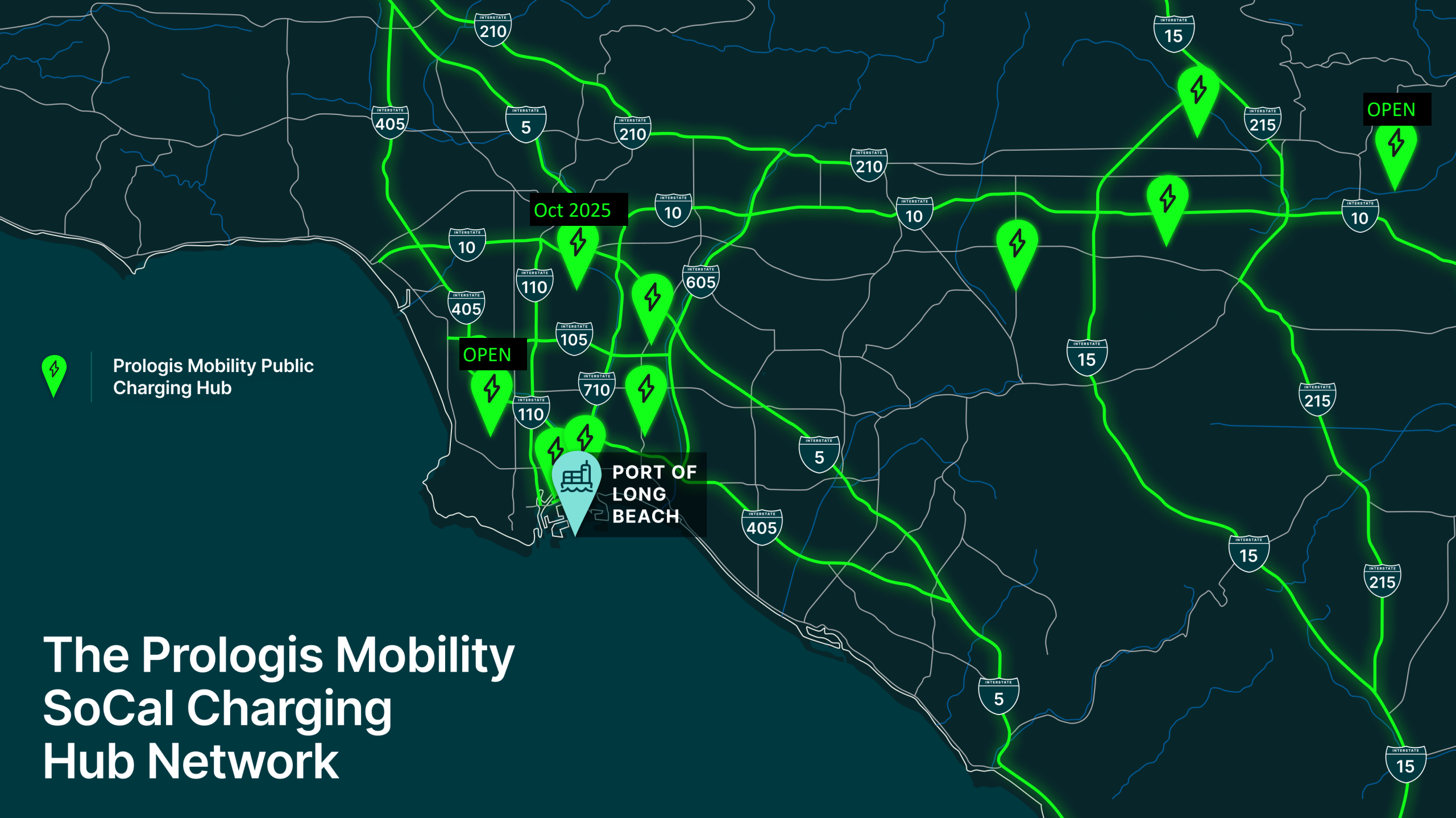
We're your long-term partner, ready to scale with your charging needs across the U.S.

Prologis Real Estate Assets by Size

Hubs coming online each year

- 2024 | 1
- 2025 | 2
- 2026 | 2
- 2027 | 8
- Roadmap Targets





Prologis Mobility Public
Charging Hub

Oct 2025

OPEN



PORT OF
LONG
BEACH

The Prologis Mobility SoCal Charging Hub Network

Vernon Hub

4515 Loma Vista, Vernon, CA

Anchor Tenant Pricing*

34 cents/kWh

All-in Off-Peak
(11pm-9am)

39 cents/kWh

All-in Mid-Peak
(9am-1pm & 7-11pm)

57 cents/kWh

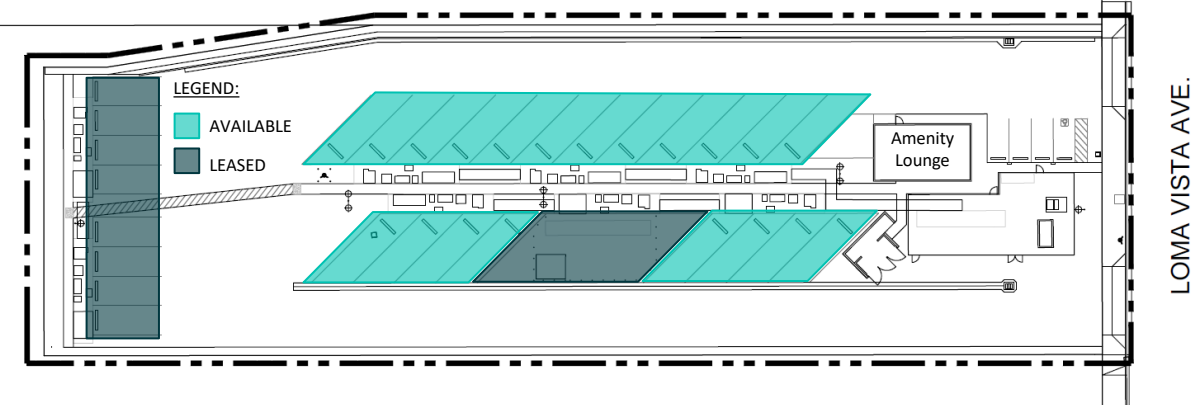
All-in On-Peak
(1-7pm)

*20% minimum offtake commitment on dedicated stalls

Note: LA light-duty public charging is 43-79cents/kWh with lower power chargers, smaller non-dedicated stalls, no security, and hidden fees!

Opening October 2025!

- + Open to light-, medium-, and heavy-duty **fleet customers**
- + **32 EV stalls** w/150kW to 600kW charging capacity per stall
- + **1- to 5-year contract** term with minimum utilization offtake
- + **Charging discounts** for Frequent Fleets & Dedicated Drivers
- + One-off **public charging** available for 45cents/kWh overnight





Presented by:

Jason Walter

Commercial Program Director, Hubs

jwalter@prologis.com

Other MD/HD Charging Sites

- **Electrify America** – small number of EA stations with 350kW chargers can accommodate commercial vehicles
 - [Electrify America: U.S. EV public charging network | Electrify America](#)
- **TeraWatt** - Infrastructure -4 completed in 2025, 12 in development
 - Open sites: Inglewood, Compton, Rialto and San Francisco
 - Plans for several more along the I-10 corridor to Texas
 - Site locations: <https://www.terawattinfrastructure.com/site-locations>
 - Contact: colton@terawattinfrastructure.com
- **EV Realty** - www.evrealtyus.com
 - Sites under development in Livermore, San Bernardino and Torrance
 - Contact: Patrick.spang@evrealtyus.com (312) 498-2297



EVRealty QR code

Other MD/HD Charging Sites (cont'd)

- **Tom's Truck Center** – sites in Santa Ana and Santa Fe Springs
 - 24 Ports, 100-200 kW, RFID access, \$0.50/kWh
 - Website: <http://www.ttruck.com/>
 - Contact: Lisa McGhee lmcghee@ttruck.com
 - Phone: 949-422-8576 Text: 714-869-7185
- **Voltera** – Charging hub in Lynwood
 - 64 ports, 180kW, 24/7 gated access
 - Website: <https://www.volterapower.com/>
 - Contact: john.mclean@volterapower.com
- **Greenlane** – Charging center in Colton
 - 12 dual port 400kW and 29 180kW chargers, credit card, RFID card, 24/7 with amenities
 - Website: <https://www.drivegreenlane.com/>
 - Contact: sales@drivegreenlane.com

Learn More:



Q&A and Discussion

- Regarding CEC's MDHD Data Dashboard :
 - Are there plans to add more of this type of station information to the dashboard?
 - <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/mdhd-zev>
- Public MD/HD ZEV infrastructure providers:
 - Has it been necessary to conduct outreach to increase use of your facility(ies) or do you already have a strong customer base?
 - Who are you targeting for outreach, what's working/not working?
- Private or conditional-public charging infrastructure: What are the challenges and opportunities to giving access to additional drivers?
- Hydrogen providers: Talk about how H2 prices could come down in the future. What conditions are needed for this to happen?
- How has the light-duty hydrogen station network improved, what have you learned and how do those learnings translate to MD/HD stations?
- What happens when a truck shuts down or runs out of fuel? Are tow truck drivers prepared?

Recap and Next Meeting

- Recap of today's discussion
- Next steps
 - Next Infrastructure TRIG meeting is 1:00-3:00 on November 3
 - Infrastructure TRIG co-chairs are seeking input on topic for November meeting:
 - Leslie Goodbody (CARB): leslie.goodbody@arb.ca.gov
 - Lisa McGhee (Tom's Truck): lmcghee@ttruck.com
 - Kate Ried (CEC): Kathryn.Reid@energy.ca.gov