

FirstElement Fuel & High-Impact Hydrogen Sectors

DOE HFTO Workshop

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Founder and Chief Innovation Officer



Mission Statement And Overview

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.

Funding Partners

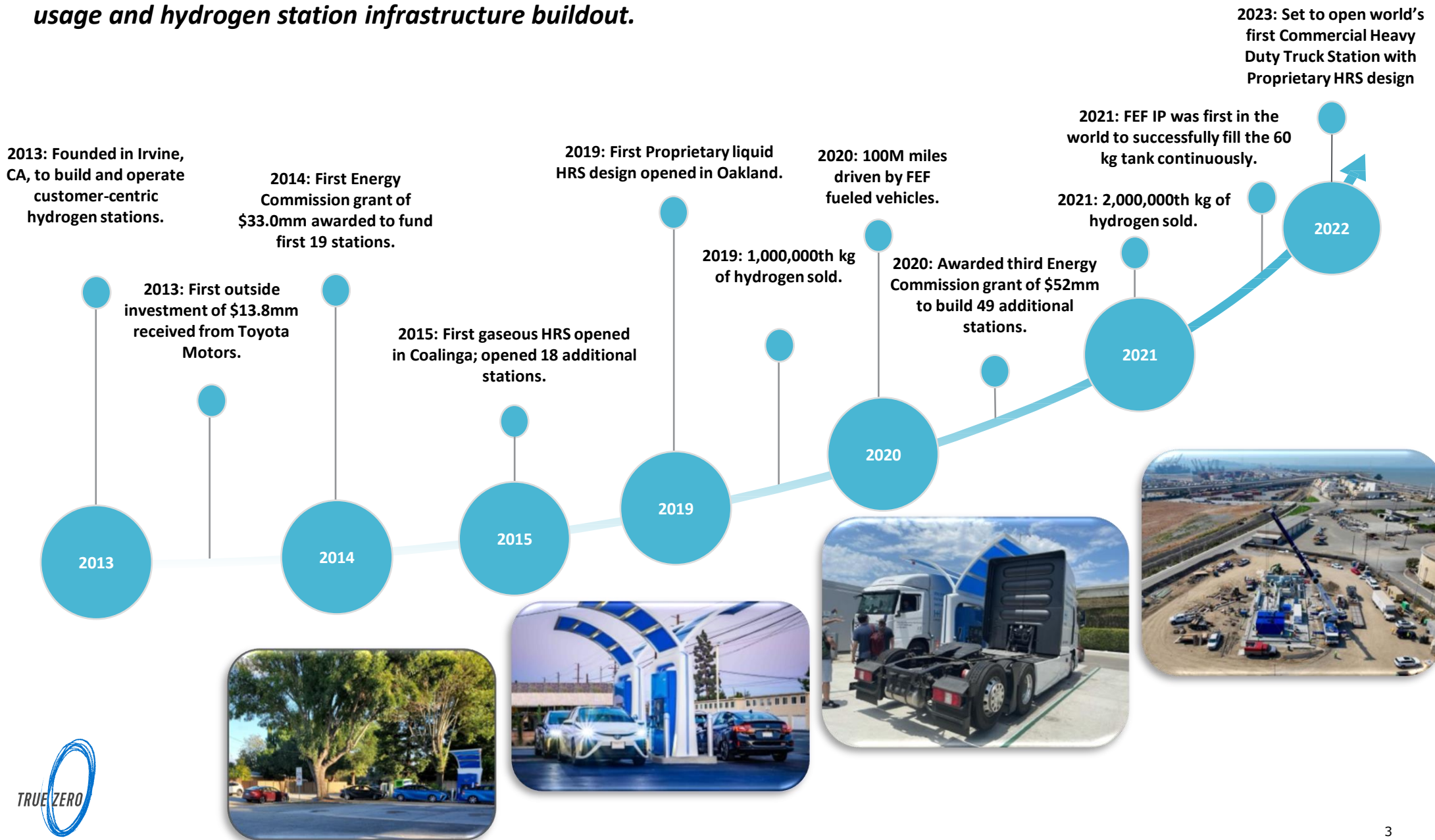


- Founded in California in 2013 to build & operate a hydrogen station network with a focus on the customer.
- Largest hydrogen network in the world, representing about 80% market share in California.
- Currently 130 employees
- Launched our True Zero brand, recognized as superior uptime and customer experience
- \$145M in CA Grants (largest awarded to any private company) + \$290M in Private Funding
- Created world-leading proprietary hydrogen station designs and SOPs to improve performance and increase scale
- Developed and currently owns assets of more than \$25 Million in upstream supply
- Operate the True Zero Hydrogen Innovation Center to conduct R&D and in-house fabrication



First Mover in U.S. Hydrogen Refueling Station Development

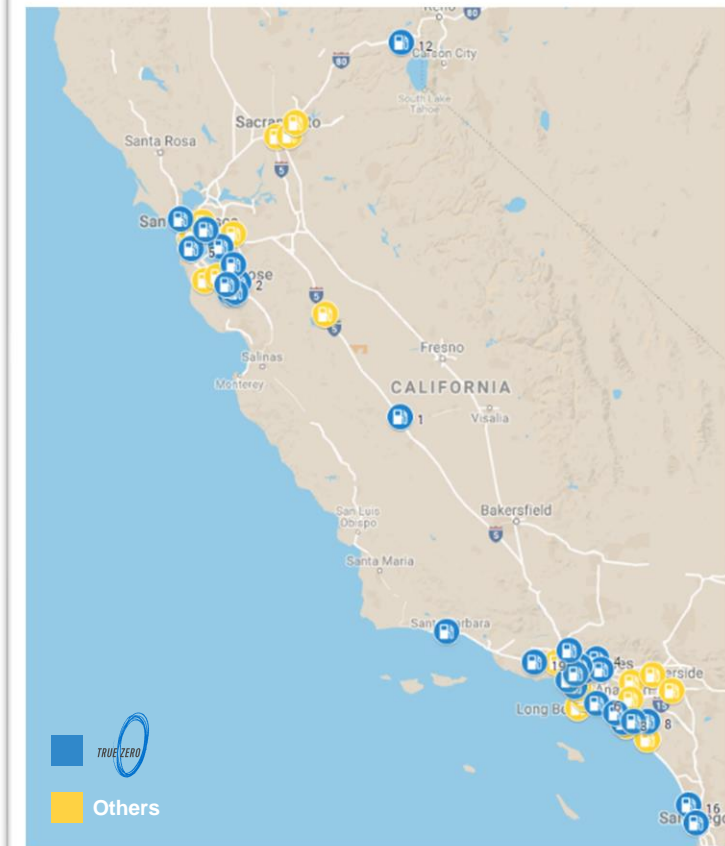
FEF is the first mover in the U.S. HRS market, establishing itself as the market leader in hydrogen station deployment early in California's efforts to incentivize alternative fuel usage and hydrogen station infrastructure buildout.



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
- > 16,000 fuel cell electric vehicles on California's Roads today
- 38 open retail station locations with 89 fueling positions in operation, 3 Heavy Duty stations in Development

Network Spans Key Markets in CA



Status	Count	Station Type	Capacity
Open	19	Retail (Gaseous)	~250 kg/day
Open	19	Retail (Liquid)	>1500 kg/day
In Development	36	Retail - Liquid	>1500 kg/day
In Development	3	Heavy Duty	>15,000 kg/day

More than 2.4 Million Fills
Over 6.3 Million kilograms dispensed

SALES RECORDS

	Monthly Record	Single-Day Record
Number of Fills	60,430	2,450
Kilograms Sold	162,850	6,112

RECORD DAY - SINGLE STATION (*Baldwin Bark, CA*)

Number of Fills	312
Kilograms Sold	857

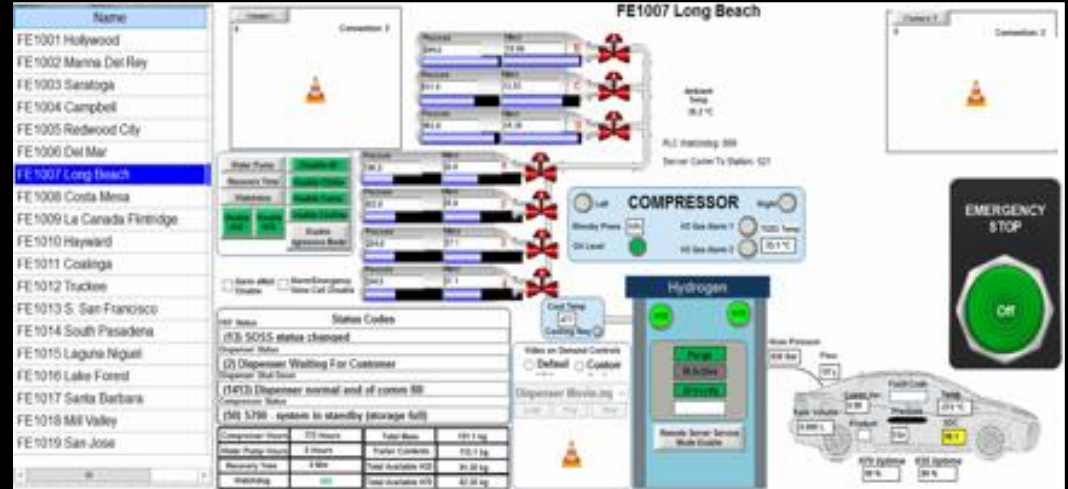


FirstElement Fuel's Core Competencies

World Leading Capabilities for HRS and HRS-Related Logistics



**Design, Build, and Installation
(including permitting & codes)**



Proprietary Operational Platform



**O&M Best Practices
SOPs and Training**



**Fabrication, repair, rebuild,
and spare parts support**



**Distribution, logistics, and
handling of hydrogen**

Liquid-based Hydrogen Stations to Achieve a Commercial Scale

FirstElement Fuel has developed propriety station designs and fuel delivery systems that are capable of:

- Four simultaneous fueling positions
- Refueling ~450 vehicles per day (capable of more in the future)
- Scalable to meet the needs of heavy duty and commercial vehicles
- A positive business case that is scalable, repeatable and capable of cost parity with gasoline/diesel
- Designed for streamlined permitting



FEF Innovation Center:

- In-house capability for repair, rebuild, redesign and manufacturing of cryopump station components
- We leveraged this capability to win a \$9 Million grant from the California Energy Commission to manufacture equipment
- Currently developing complete heavy duty refueling stations



FirstElement's Hydrogen Logistics Hub in Livermore, CA

- 2.5 acre facility with multiple functions
- Converts liquid hydrogen into compressed gaseous hydrogen for trailer delivery
- 1,200 kilograms of compression capacity for filling 500 bar trailers (2 stages of compression)
- 10 FEF gaseous trailers plus third party customers
- 3 liquid trailers
- Cryopump testing capability: MHI and Nikisso Pumps are under test
 - FEF pump testing this spring
- Future phases will include refueling of HD trucks and cars



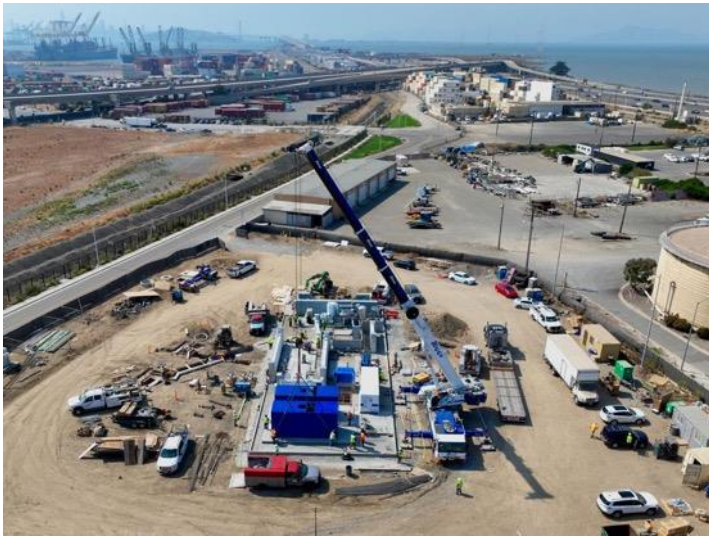
First Mover in HD Scale: Coordination with OEMs

- FEF working with multiple OEMs to coordinate the rollout of Heavy-Duty trucks
- FEF operated a program with Hyundai to operate 2 fuel cell Hyundai Xcient trucks in a demonstration project for a prominent e-commerce player as well as 30 trucks with Hyundai Glovis.
- We recently announced a long-term partnership to support Nikola deployments



Oakland HD Station

- Opening in Q1 2024
- >15,000 kilogram per day capacity
- 2 HD Truck fueling positions + 4 LDV fueling positions
- Truck Dispensers outfitted with High-Flow components for <10 min fills (Tatsuno)



HD Truck Station Platform

Ongoing development learnings will inform future equipment designs as we evolve towards improved cost, performance, reliability, and scale.



Drayage Truck Station in Oakland



New lathes via CEC Manufacturing Grant



Cryo-pump development team



Next generation design

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