DOCKETED	
Docket Number:	23-BUSMTG-01
Project Title:	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
TN #:	248514
Document Title:	Presentation - Item 4 - 2022 Joint Agency Staff Report on AB 8 - Hydrogen Refueling Stations
Description:	Presentation for Agenda Item 4 of the January 25, 2023, CEC Business Meeting - Informational Item on the 2022 Joint Agency Staff Report on AB 8
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/24/2023 2:15:04 PM
Docketed Date:	1/24/2023

Item 4: 2022 Joint Agency Staff Report on AB 8 – Hydrogen Refueling Stations

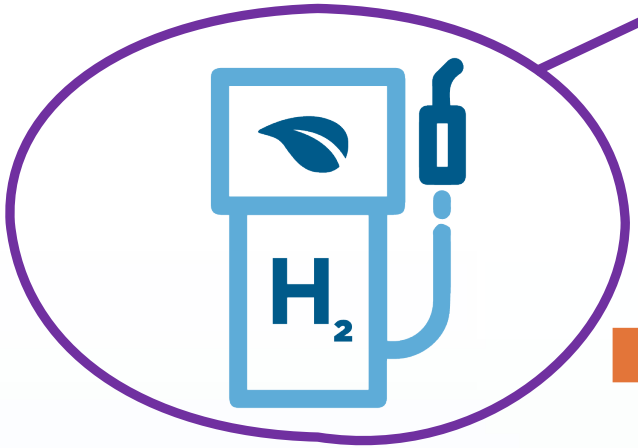
January 25, 2023 Business Meeting

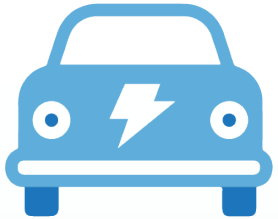
Jane Berner, Air Pollution Specialist
Fuels and Transportation, Medium- and Heavy-Duty Zero Emission Technologies Branch

Benefits to Californians

Zero-Emission Vehicle (ZEV) Infrastructure

Focus of Report

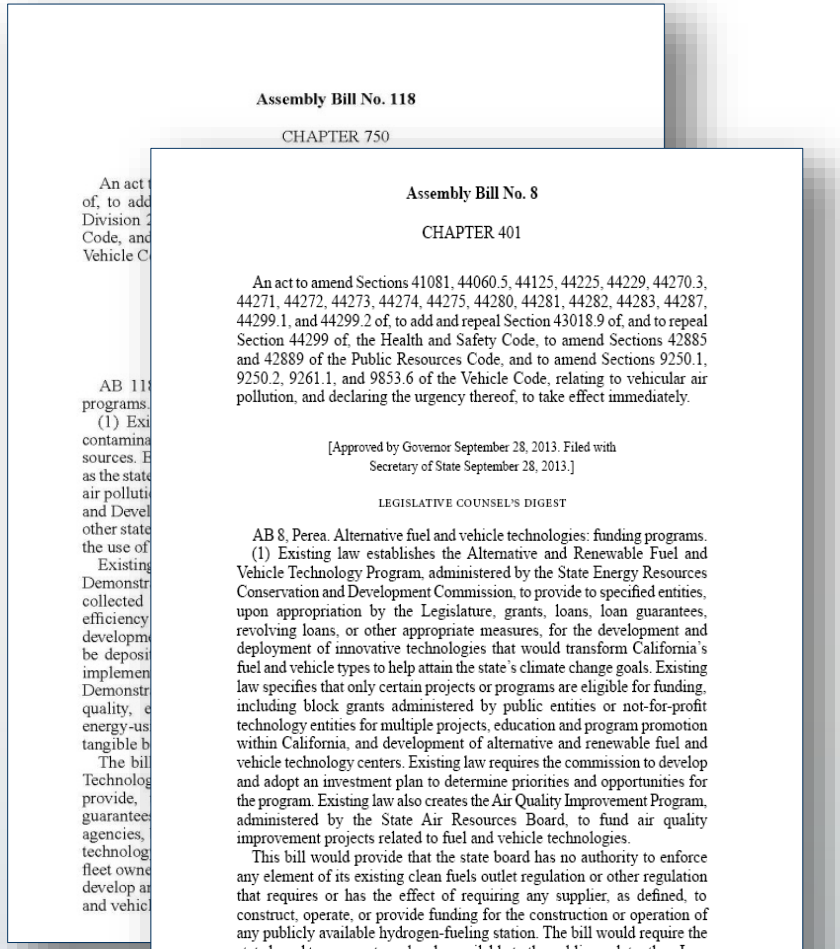




Battery Electric & Fuel Cell Electric Vehicles

Mitigate Climate Change and Improve Air Quality

Clean Transportation Program



Assembly Bill No. 118

CHAPTER 750

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AB 118
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Assembly Bill No. 8

CHAPTER 401

An act to amend Sections 41081, 44060.5, 44125, 44225, 44229, 44270.3, 44271, 44272, 44273, 44274, 44275, 44280, 44281, 44282, 44283, 44287, 44299.1, and 44299.2 of, to add and repeal Section 43018.9 of, and to repeal Section 44299 of, the Health and Safety Code, to amend Sections 42885 and 42889 of the Public Resources Code, and to amend Sections 9250.1, 9250.2, 9261.1, and 9853.6 of the Vehicle Code, relating to vehicular air pollution, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor September 28, 2013. Filed with Secretary of State September 28, 2013.]

LEGISLATIVE COUNSEL'S DIGEST

AB 8, Perea. Alternative fuel and vehicle technologies: funding programs.

(1) Existing law establishes the Alternative and Renewable Fuel and Vehicle Technology Program, administered by the State Energy Resources Conservation and Development Commission, to provide to specified entities, upon appropriation by the Legislature, grants, loans, loan guarantees, revolving loans, or other appropriate measures, for the development and deployment of innovative technologies that would transform California's fuel and vehicle types to help attain the state's climate change goals. Existing law specifies that only certain projects or programs are eligible for funding, including block grants administered by public entities or not-for-profit technology entities for multiple projects, education and program promotion within California, and development of alternative and renewable fuel and vehicle technology centers. Existing law requires the commission to develop and adopt an investment plan to determine priorities and opportunities for the program. Existing law also creates the Air Quality Improvement Program, administered by the State Air Resources Board, to fund air quality improvement projects related to fuel and vehicle technologies.

This bill would provide that the state board has no authority to enforce any element of its existing clean fuels outlet regulation or other regulation that requires or has the effect of requiring any supplier, as defined, to construct, operate, or provide funding for the construction or operation of any publicly available hydrogen-fueling station. The bill would require the state board to aggregate and make available to the public, no later than June 30, 2014, and every year thereafter, the number of hydrogen-fueled vehicles that motor vehicle manufacturers project to be sold or leased over the next 3 years, as reported to the state board, and the number of hydrogen-fueled vehicles registered with the Department of Motor Vehicles through April 30. The bill would require the commission to allocate $20 million annually, as specified, until there are at least 100 publicly available hydrogen-fueling

Established in 2007 by AB 118 (Núñez, 2007)

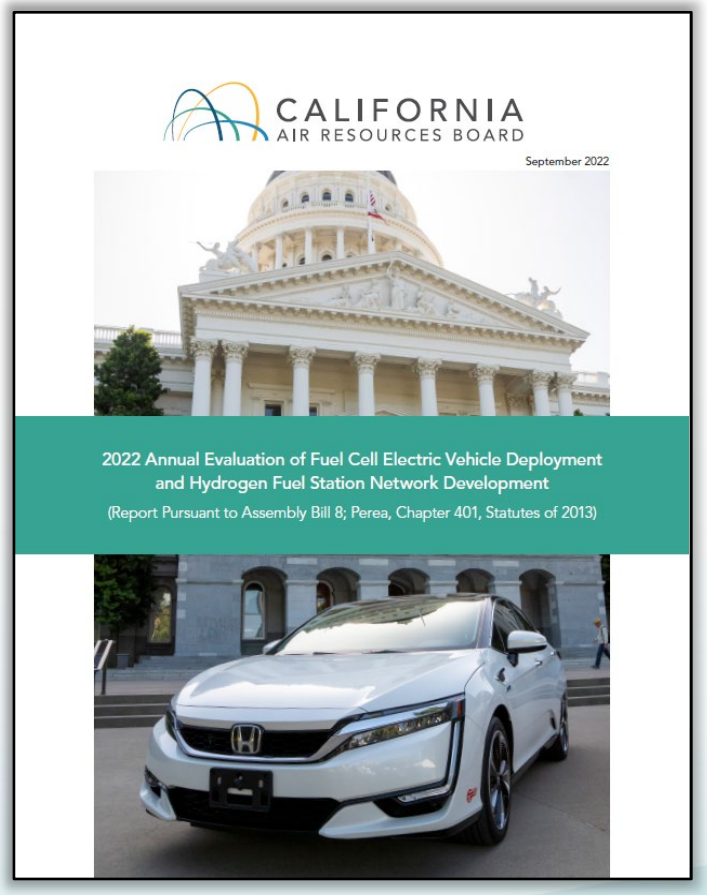
Extended through 1/1/2024 by AB 8 (Perea, 2013)

Up to $100m/year with funds collected from vehicle registration fees

$20m/year for hydrogen stations to establish at least 100 stations

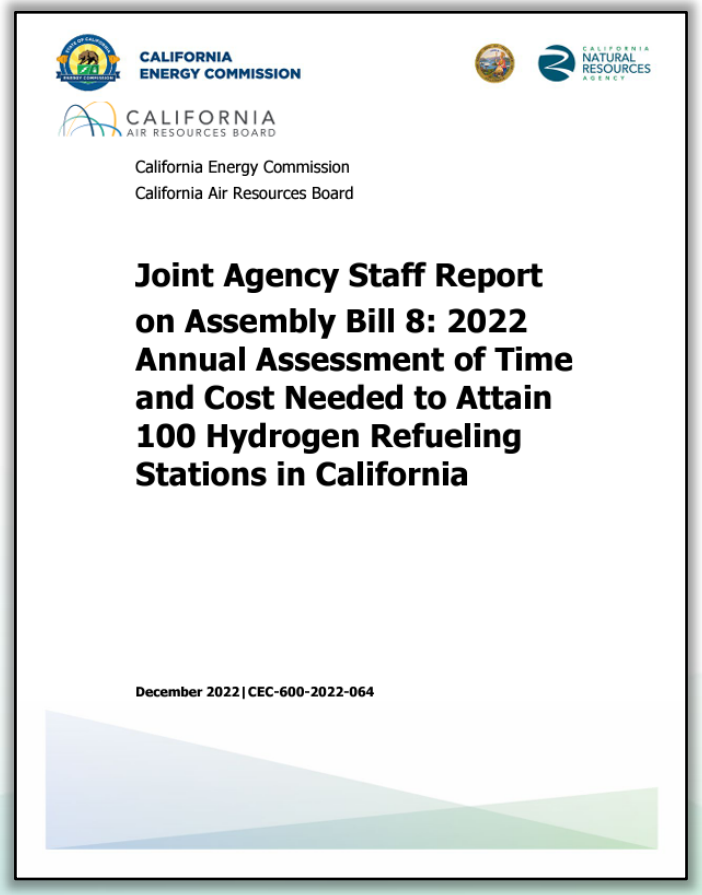
AB 8 Reporting Requirements

"Annual Evaluation" prepared by CARB each summer



https://ww2.arb.ca.gov/resources/documents/annual-hydrogen-evaluation

The "Joint Report" prepared by CEC and CARB each winter



https://www.energy.ca.gov/sites/default/files/2022-12/CEC-600-2022-064.pdf

California Goals

- AB 8: 100 publicly available stations by 2024
- Gov Brown Executive Order B-48-18
  - 200 hydrogen stations by 2025
  - 5 million zero-emission vehicles by 2030
- Gov Newsom Executive Order N-79-20
  - All new passenger cars and trucks sold in CA to be zero-emission by 2035
  - All medium- and heavy-duty trucks and buses operated in CA to be zero-emission by 2045 everywhere feasible
  - All drayage trucks to be zero-emission by 2035

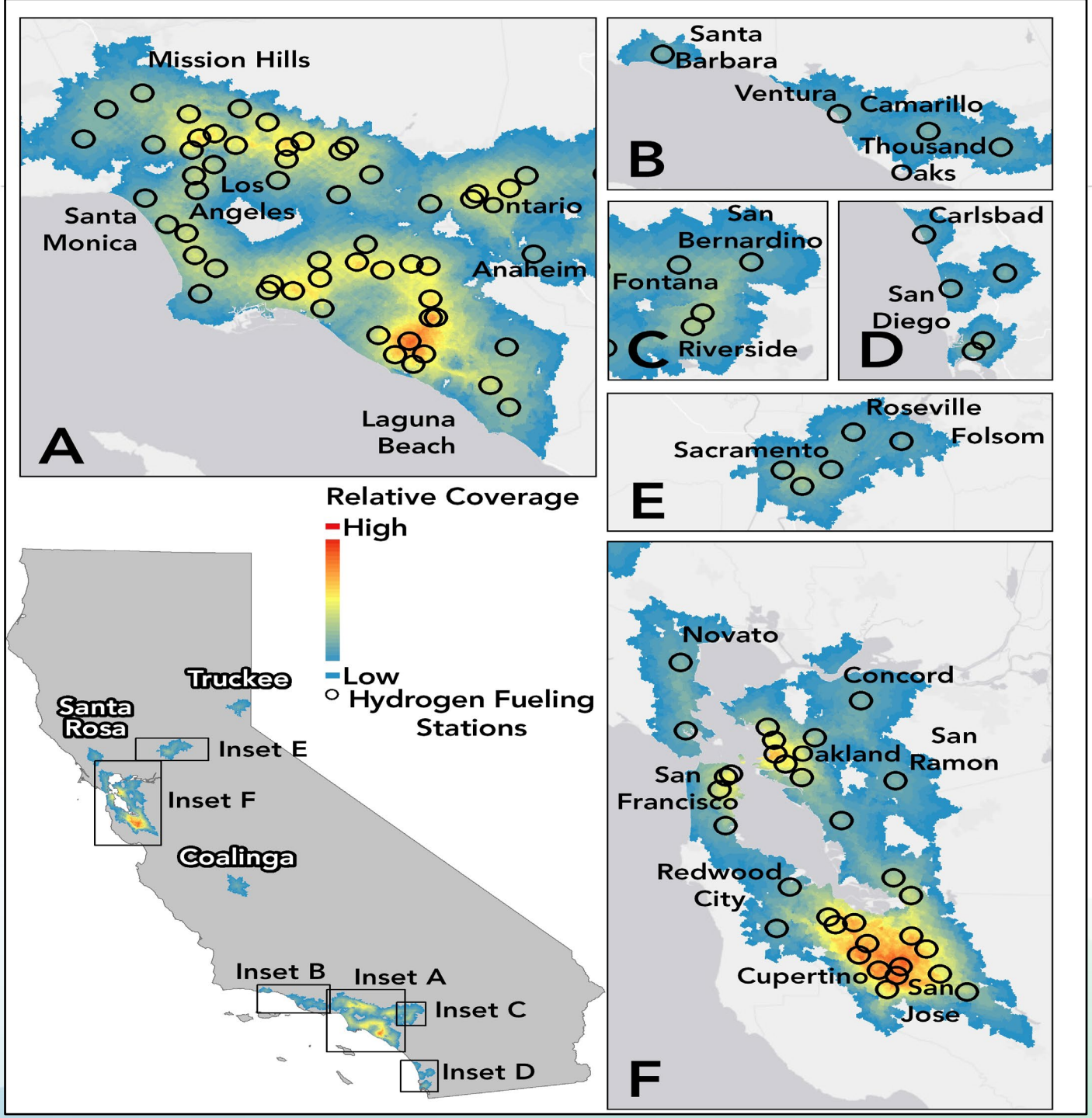
Progress Towards the Goals

- Hydrogen refueling stations planned (public and private funding): 175
  - 62 have reached open status (as of 11/11/22)

- Committed to meet 200-station goal
  - $279m through fiscal year 2023-2024
  - Expect to close gap with new solicitation

Photo taken from the 2022 Annual Evaluation

Hydrogen Refueling Network

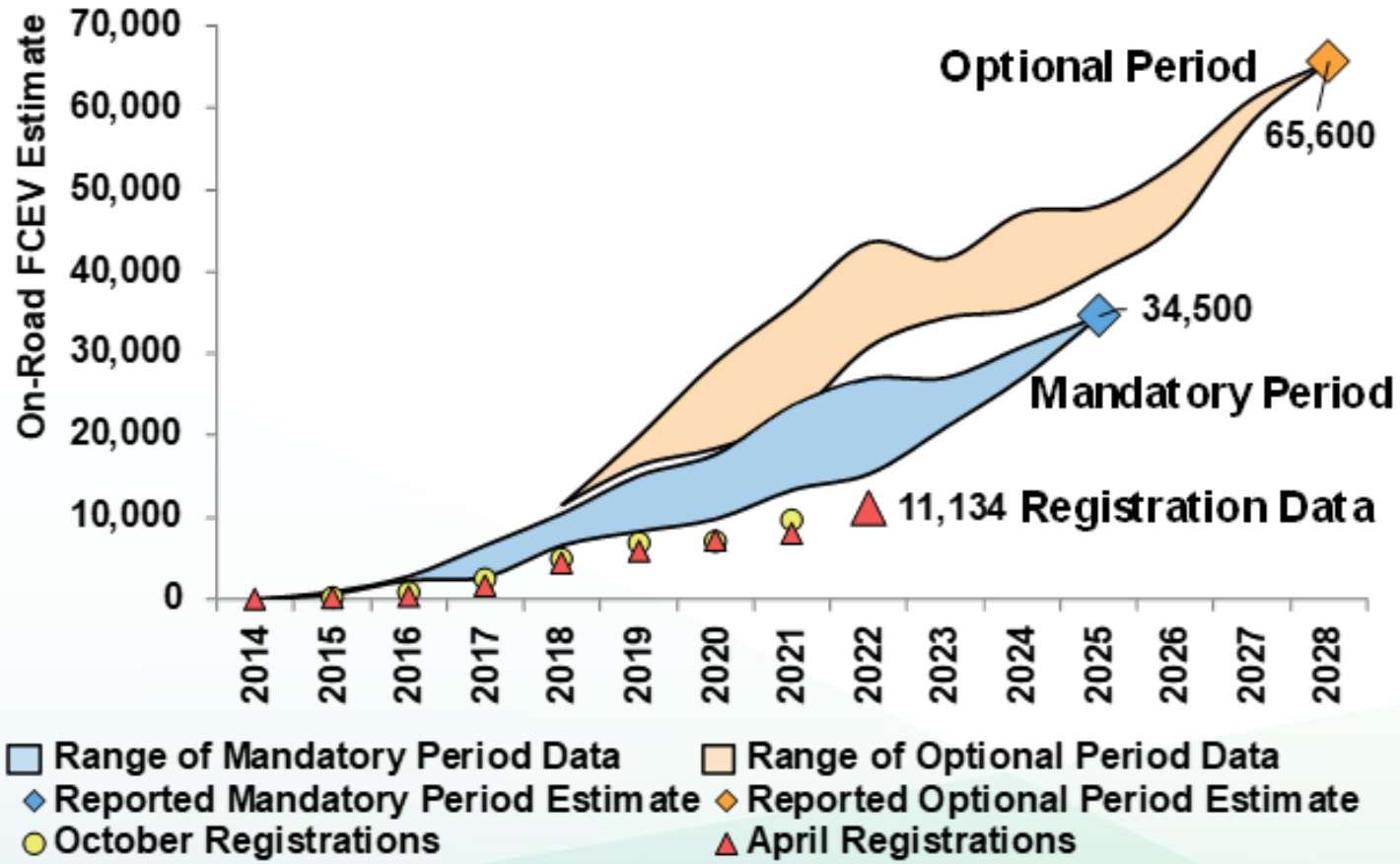


Hydrogen Fueling Capacity

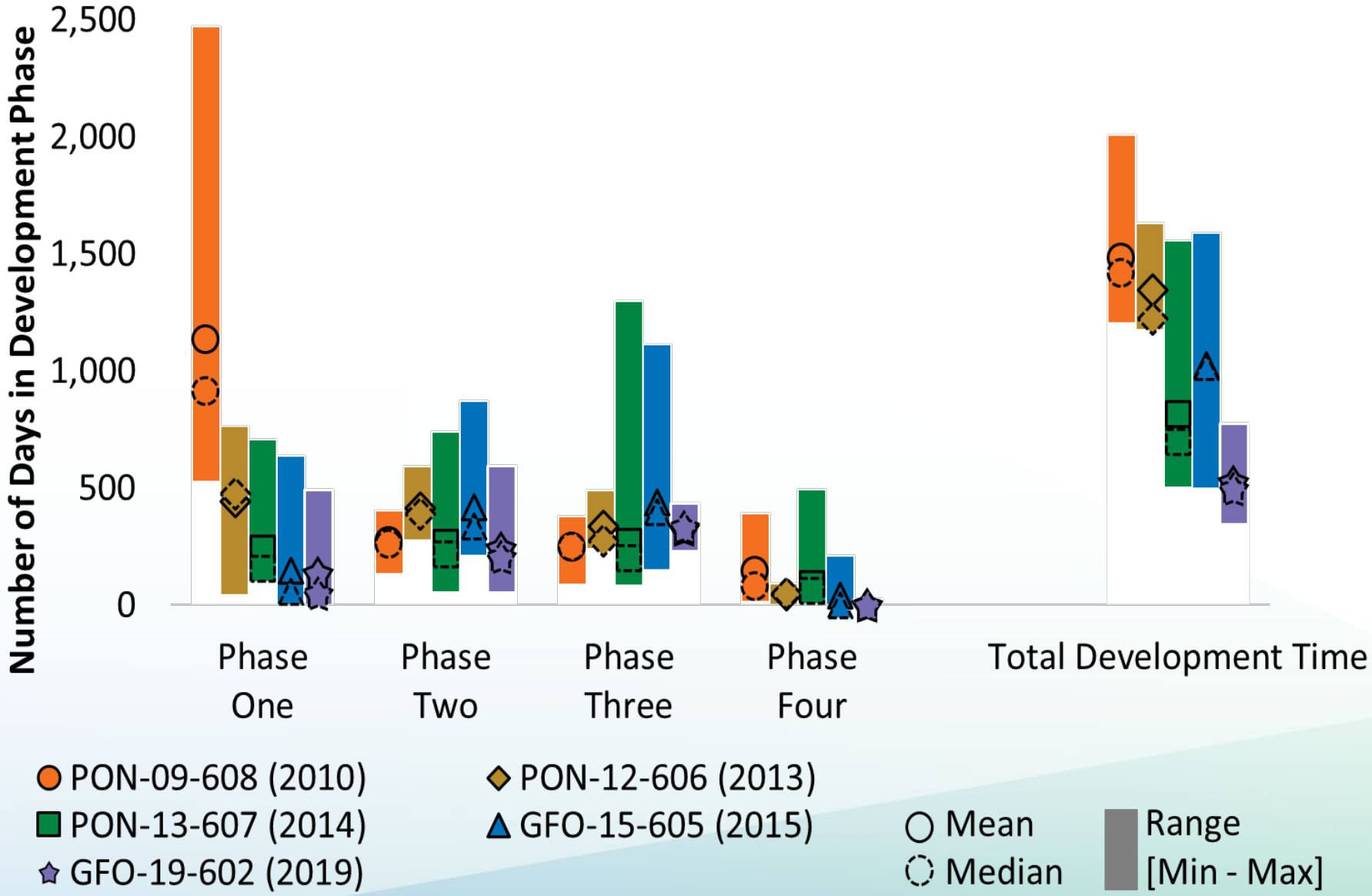
Station Status	Station Quantity	FCEVs Stations Can Support
Open Retail	**62**	**51,000**
Planned	31	52,000
GFO-19-602 Future Batches	82	135,000
Total Funded	***175***	***238,000***
Estimated Gap to 200	25	36,000
Estimated Total	***200***	***274,000***

Fuel Cell Electric Vehicle Deployment

- 12,169 estimated on-road FCEVs (as of Q3 2022)
- 34,500 FCEVs projected by 2025
- 65,600 FCEVs projected by 2028

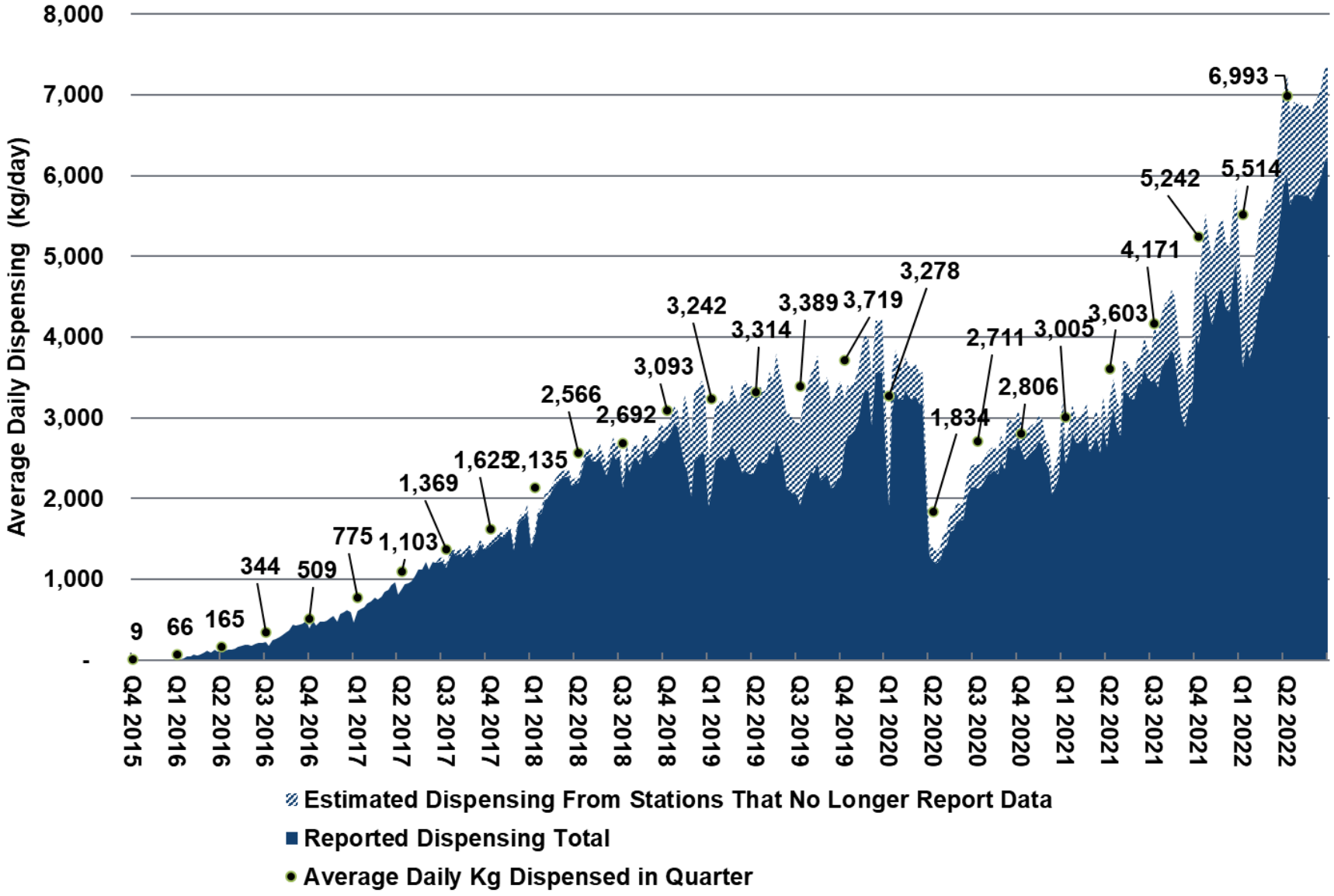


Station Development Time



- Impacts
  - COVID-19 pandemic
  - Global inflation
  - Supply chain

Average Hydrogen Dispensing



$1.3 Billion International Investment

By Germany, Japan, South Korea, and CA through 2021

	$ (million) Invested (reported in 2021)	$ (million) Invested (reported in 2022)	Open Stations (reported in 2021)	Open Stations (reported in 2022)	FCEVs (reported in 2021)	FCEVs (reported in 2022)
California	166	166	52	62	9,701	12,230
China	N/A	N/A	146	147	7,831	8,941
Germany	118	119	92	96	1,325	1,506
Japan	640	740	147	159	5,904	7,352
South Korea	199	257	54	172	15,675	20,778

Next Steps

- 2022 report published
- 2023 report due 12/31/23
- Begin planning in April: identify changes, special topics