CHBC Public Transport SAG

May 9, 2024

Summary:

- CHBC Staff updated CHBC Hydrogen Fuel Cell Bus Info Page with member support Please provide feedback on the new FCEB info page accessed here.
- CHBC staff to reach out to non-member transit agencies interested in FCEB, welcome them to attend SAG calls for FCEB updates and invite to events.
- CHBC Staff working with AC Transit to organize invite only workshop in October to educate transit agencies on hydrogen and fuel cell vehicles.

Notes:

- 1) Welcome and Antitrust
- 2) Newsworthy Items
 - a) Wrightbus Secures Order for 46 Hydrogen Buses from German City
 - b) Another batch of Solaris fuel cell bus headed to Frankfurt
 - c) Winnipeg Transit poised to award hydrogen-generation contract to Alberta firm
 - d) <u>GILLIG Expands Zero-Emission Lineup with Introduction of BAE Systems & Ballard-Powered</u> Hydrogen Fuel Cell Electric Bus
 - e) Any others?
- 3) Project Presentation
 - a) Roland Cordero, Director of Maintenance and Vehicle Technology Foothill Transit
 - i) Reviewed their LH2 to gas station averaging 350-400kg/day to fill their 33 buses average 15-20kg per bus; commissioned last summer.
 - (1) Fueling up to 5kg/min
 - (2) Open to tours, email Roland if interested
 - (3) Paying \$9.xx/kg for another 2 years (then can renew the contract), 3 year contract with Clean Energy
 - (4) 10-12k gallons every 3-4 days
 - ii) Additional 19 fuel cell buses ordered
 - iii) Double decker electric buses go San Gabriel valley to LA
 - iv) Presentation attached
 - v) For more information contact rcordero@foothilltransit.org or alphonse.anderson@cleanenergyfuels.com
 - b) Suggested speakers:
 - i) Golden Empire June
 - ii) OCTA July
 - iii) AC Transit/Ad Astra Fuel cell buses in Costa Rica, transferring lessons learned
 - iv) North San Diego County FTA Award
 - v) SamTrans deployment
 - vi) Transdev Lauren Skiver
 - vii) Michael Pimentel, CTA Zero Emission Bus Taskforce
- 4) Current Activities
 - a) Outreach to transit agencies offering information
 - i) Non-member CA TAs deploying FCEBs
 - (1) CHBC Staff procured list from CARB rollout plan
 - (a) Update on transit agencies joining CHBC
 - b) Hydrogen Fuel Cell Bus Workshop
 - i) Planning stages with AC Transit for late October workshop

CHBC Public Transport SAG

May 9, 2024

- (1) Looking to partner with UC Berkely
- (2) Will be engaging with this SAG for panel ideas soon.
- (3) Looking for sponsorship!
 - (a) Email cshumaker@californiahydrogen.org if interested
- c) Engagement with Allied Interests (CTE, CTA, APTA, ZEBRA, etc.)
 - i) Hydrogen Fuel Cell Bus Council (Tim)
 - (1) Looking into federal policy classification of equipment for the sake of financing.
 - ii) ZEBRA (CTE)
 - iii) APTA
 - (1) CHBC on the Zero Emission Fleet Committee
 - iv) CTA
 - (1) Fall conference in San Jose, CARB providing input connect with CHBC
 - v) CalACT Small and rural transit agencies to be included in webinar/event invites
- d) Hydrogen Fuel Cell Bus Info Page: The "Better" Electric Bus
 - i) New page is live!
 - ii) Need case studies from Golden Empire and Foothill
- 5) Legislative and Regulatory Affairs Updates
 - a) Update from CHBC
 - i) CARB LCFS comments due May 10- Mik Skvarla has been working with CARB staff on specific items
 - ii) <u>SB 1418</u> (Archuleta)- Expedited permitting with checklist (for stations)- opportunity for a support letter when it moves from Senate to Assembly (approx. June timeframe); there are efforts to possibly add language for on-site hydrogen production to be included in the fueling station definition.
 - iii) <u>SB 1420</u> (Caballero)- Also has expedited permitting for clean hydrogen production facilities; adds language for 'qualified clean hydrogen' working with utilities to get language back in taken out in amendments.
 - iv) <u>SB 1387</u> (Newman)- Zero Emission, MD HVIP incentive bill- set for Appropriations hearing on May 13.
- 6) Open Funding Opportunities
 - a) HVIP
 - i) <u>FY22-23 Implementation Manual</u> effective as of Aug 28th
 - b) EnergIIZE
 - c) Grants.gov for all federal opportunities
- 7) Upcoming Events
 - a) June 16-17th California Hydrogen Leadership Summit Sheraton, Sacramento
 - i) Some sponsorship levels still available
 - ii) Value registration ends May 10; discount for CHBC members
 - b) Annual APTA Transform Conference Sept 29 Oct 2, Anaheim, CA
 - c) See Highlights in Hydrogen weekly newsletter
- 8) Open Discussion
 - a) Go-BIZ California Hydrogen Market Development Strategy: <u>Web feedback form</u> is open for input (no deadline, yet)
 - i) Tyson leading; initial framing document was released

CHBC Public Transport SAG

May 9, 2024

Attendees

- Alphonse Anderson, Clean Energy Fuels Corp.
- Cortney Copeland, GO-Biz
- Jim Corboy, Element One Energy
- Roland Cordero, Foothill Transit
- Rudy De La Fuente, Industrial Gas Consultants LLC
- Rick Gasaway, Green Stewardship LLC
- Jennifer Hamilton, CHBC
- Ryan Lau, AC Transit
- Jose Lopez-Gallego, RIC Energy
- Mari Mantle, Cummins
- Rodrigo Sanchez, Deloitte
- Tim Sasseen, Ballard Power Systems
- Brian Schorr, CHBC
- Cory Shumaker, CHBC

Update on H2 and FCEB Project



H2 Fuel Cell Bus Project Update

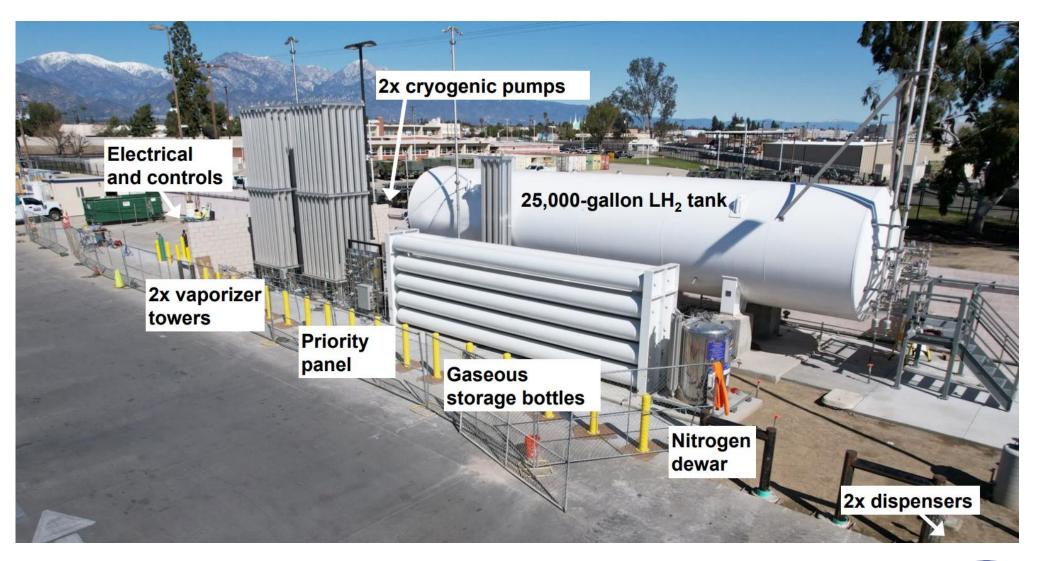
- First bus delivered July
 \$1.4M Cost per bus
- Range of 300 miles
- 37 kilograms of gaseous H2 One to one replacement
- Training provided by manufacturer







H2 Infrastructure





FCEB Commissioning

- Fuel fill test 06/01
- Filled 18 buses within 1 hour 30 minutes
- Fuel up to 5 kilograms a minute
- 9 to 10 minutes fill



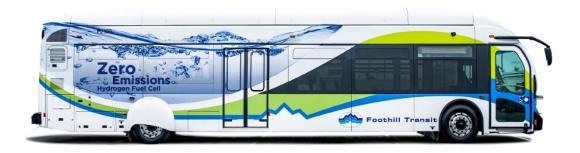




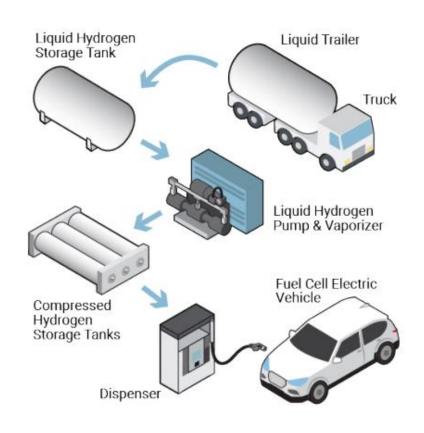


Up and Coming New Projects

- 19 Fuel Cell Buses
- Hydrogen Station and Fueling station
- 12 Double Deck Battery Electric Buses











THANK YOU

