



CALIFORNIA HYDROGEN
BUSINESS COUNCIL

Zero-Emission Bus Technology Showcase and Symposium



Session 4.2.

How to Scale Up Hydrogen Fueling Infrastructure





Moderator:

- **Jeff Serfass**, Executive Director, California Hydrogen Business Council

Speakers:

- **Chris Kretz**, Business Development Manager, Air Products & Chemicals
- **Ryan Erickson**, GM, Strategic Development, Trillium – A Love's Company
- **Steve Szymanski**, Director of Business Development, Projects and Government, Nel Hydrogen
- **Jeff Allen**, Director of Market & Business Development, NICE America
- **Al Cioffi**, Business Development, Plug Power



FCEBs have a proven record of high performance

Overview

	CURRENT STATUS	SOURCE
Power plant life time	25,000 – 30,000 hrs	NREL 2017 report
Bus availability	Up to 93%	NREL 2017 report
Refueling time	< 10 minutes (1/day)	NREL 2017 report
Bus cost (25 units, 2016)	\$1,235,000	New Flyer
Bus cost (100 units)	\$850,000 projected	New Flyer
Scheduled and unscheduled maintenance cost	\$0.56/mile	NREL 2017 report
Fuel economy	7-8 miles/DGE	NREL 2017 report
Range	277-357 miles	NREL 2017 report



Purpose of this session

The previous hydrogen panel presented promising hydrogen cost information when infrastructure is at scale.

This session will help you in the following areas:

1. Hydrogen at scale is developing in California and elsewhere in the world
2. Multiple pathways to creating hydrogen infrastructure at scale
3. Production of renewable hydrogen is developing onsite and at large scale
4. Technology is continually evolving to provide alternative solutions.