NREL
NATIONAL RENEWABLE ENERGY LABORATORY

California FUEL CELL PARTNERSHIP
DRIVING FOR THE FUTURE

Users Perspective on Advanced Fuel Cell Bus Technology

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DOE/FTA FCB Workshop
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Transit Agencies FCB Demonstrations

Reasons for participation

- Government regulations to reduce emissions
- Public pressure
- Agency desire to be ‘green’
- Funding opportunity
- Learn about the newest technology

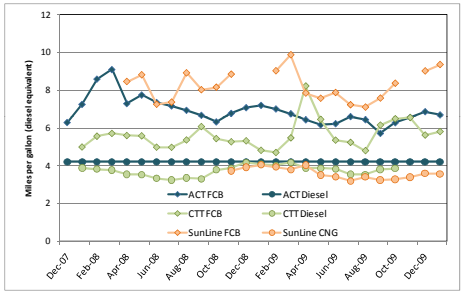
Challenges: Performance

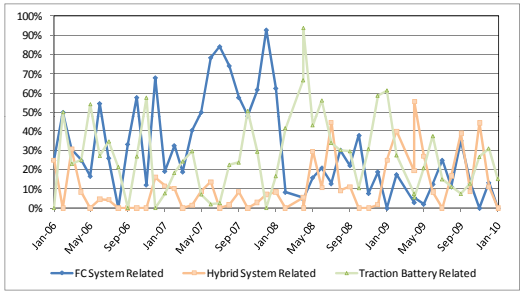
Bus should match conventional bus performance

- Operate 7 days/week, up to 20 hr/day
- Complete day of service with one tank of fuel
- Keep up with duty-cycle
- Similar time to fuel and prep for service

Challenges: Reliability & Durability

- 12 year bus requirement for FTA funded buses
  - Approx. 20,000 hrs
- Availability of 85% or more
- Miles between roadcalls
  - >4,000 for all roadcalls
  - >10,000 for propulsion related roadcalls
- Powerplant that lasts for at least ½ bus life

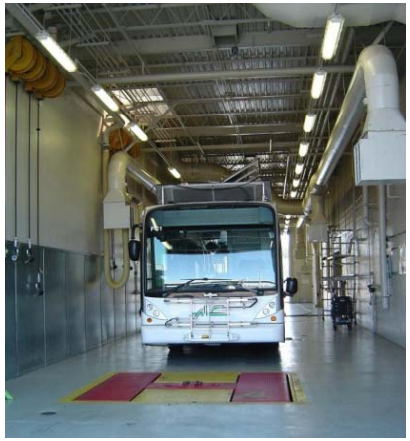




Challenges: Implementation into Fleet

- Facilities for maintaining and fueling FCBs
- Ability to transfer maintenance to transit agency staff
- Availability of parts
- Integrate operator training into current process

Challenges: Cost



- Capital cost of bus
- Infrastructure mods/additions
  - H_2 station capable of fueling multiple FCBs back-to-back
  - Garage/maintenance bay
- Parts cost, especially for fuel cell replacement
- Resources to manage project

Thank you.

Questions/comments?

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