
Hydrogen Fueling Stations

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AQMD Hydrogen Infrastructure Update

- Long-term support of hydrogen infrastructure
 - 2005 AQMD Fueling Station
- Five Cities Program
 - 25 HICE Prius + 5 for AQMD
 - Burbank Protera Hydrogen Hybrid Bus
- Continued need for station to fill “gap”



Hydrogen Infrastructure Update

- Orange County Sanitation District
 - Anticipated Operation November 2010
- CEC Hydrogen Proposals
 - Burbank Station
 - AQMD Station
- Hydrogen Quality Sampling Assembly (HQSA)

Hydrogen Infrastructure Update

(cont'd)

- Air Products & Chemical, Inc. and Orange County Sanitation District
 - Fountain Valley
 - 100% renewable – anaerobic digester gas
 - 100% renewable electricity – FCE
 - 100 kg/day capacity
 - \$2.7 million CARB and \$750k from AQMD
 - SB1505 renewable requirement

Burbank Station Update

- AQMD Contract for operations and maintenance
- RFP released in March 2010 required
 - Operations and maintenance
 - Provide emergency fueling & help phone
 - Train staff in use of equipment and procedures
 - Repair unsafe or inoperable equipment or parts
 - Provide detailed vehicle fueling reports
 - Provide total station monthly summary reports
 - Meet SB 1505 requirements

City of Burbank Station

- Three proposals received
- Contract with Hydrogen Frontiers for up to 60 months at cost not to exceed \$1,060,000
 - Hydrogenics is subcontractor
- Meet all requirements of RFP including SB1505

Continue Operation of Burbank Hydrogen Station

- Significant cost sharing partners due to station importance

Partners	Funding	Percent
CARB	\$300,000	28%
DOE	\$360,000	34%
CEC	\$200,000	19%
AQMD	\$200,000	19%
Total	\$1,060,000	100%

Maintain AQMD Hydrogen Station

- AQMD hydrogen fueling station dedicated February 2005
- Station was built by Stuart Energy (Hydrogenics)
 - Provides for proper system performance, maintenance and data management
 - Contract expired in March, 2010
- Maintain AQMD Hydrogen Station
 - On-going maintenance of AQMD station
 - Repair equipment or parts as needed
 - Detailed vehicle fueling reports
 - Total station monthly summary reports

AQMD Station Upgrade

- RFP was re-released in May 2010
- RFP responses included:
 - Fueling for up to 150 vehicles/day,
 - Mobile, skid-mounted or temporary fueling stations that can provide for current and future vehicle designs
 - Liquid hydrogen vehicle saturation pressure, receptacle type, and vapor management systems
 - Availability of bulk hydrogen and impact on future station design and costs
 - Ability to meet SB 1505 Renewable Requirements

AQMD Station Upgrade

- Six proposals received
 - Three were electrolyzer based technologies
 - Five included hydrogen delivery
 - Two included hi pressure tanks ($\geq 7,400$ psi)
 - One included creation of syngas w/ partial oxidation gasifier (pyrolysis) from wood waste then shift and use PSA
- Evaluation panel included CARB, DOE/NREL, AQMD staff
- Proposal to CEC based on selected vendor

Potential Vehicles

- OEM / CaFCP letter of support to CEC Program Opportunity Notice
- FCV fleet additions may include:
 - Daimler 2
 - Ford E-450 Shuttle Van 2
 - Honda Clarity 1
 - Hyundai 10
 - Toyota Highlander 2

Hydrogen Infrastructure

Update (cont'd)

- Hydrogen Quality Sampling Assembly (HQSA)
 - HQSA designed to take hydrogen fuel sample at nozzle
 - Developed by California Fuel Cell Partnership (CaFCP) in 2004.
 - HQSA contains both particulate and gaseous sampling assemblies with one common 1/2" OD venting pipe.
 - FTIR trial to start next week