

DOCKET

08-ALT-1

DATE FEB 17 2009

RECD. FEB 24 2009

Honda's View on H₂ Infrastructure Needs February 17, 2009 For Input to CEC AB118 Investment Plan

Robert Bienenfeld Sr. Manager Environment & Energy Strategy American Honda Motor Co., Inc.

FCX Clarity

First Customers

- First deliveries in July, 2008 (five to-date)
- Customers include: H.S. Principal, D.A., Actress, etc.
- Selection process: geography, driving patterns, access to infrastructure

First Fuel Cell Vehicle Dealership Network

- Three Official Clarity/FCX dealerships: Santa Monica, Torrance, and Costa Mesa
- Clarity dealership responsibilities:
 - Sales, Service, Parts, Customer Relations

Fuel Cell Production

- Dedicated FC Production: Exclusive Clarity factory
- Dedicated FC stack production, with Honda-unique manufacturing equipment





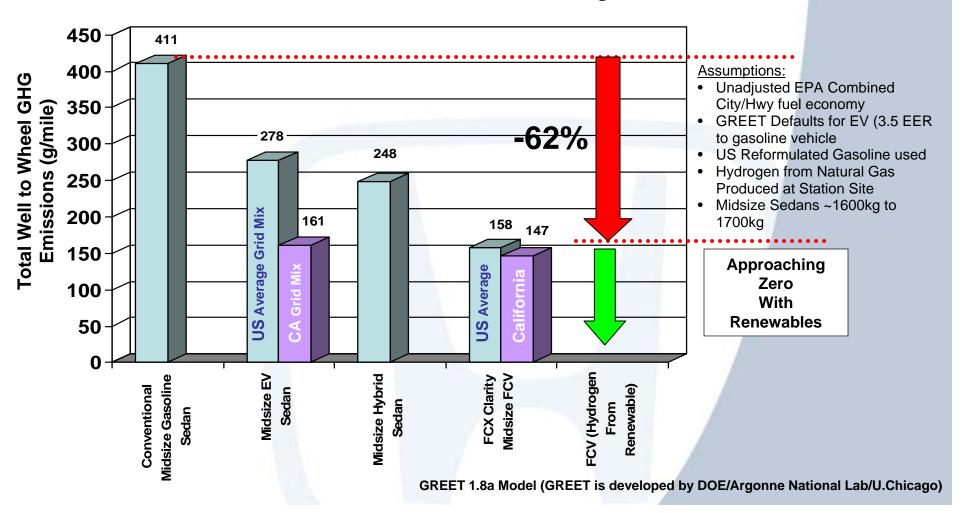






Well to Wheel Emissions for Midsize Sedan

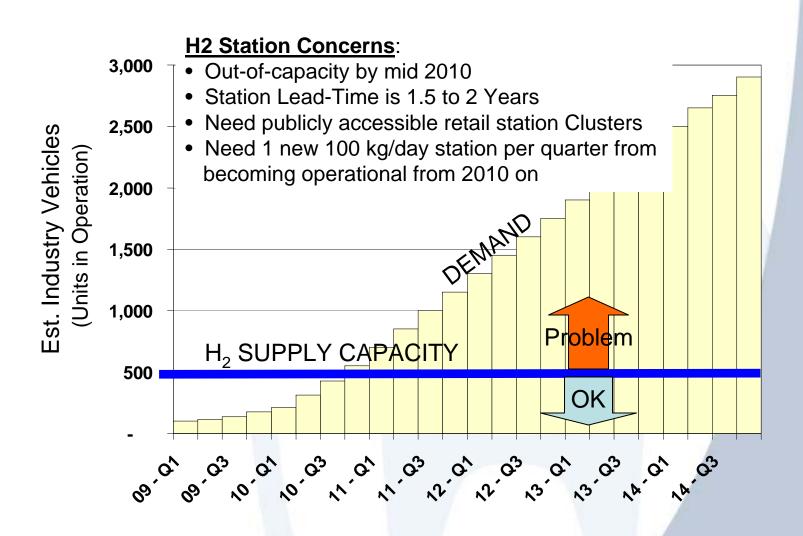
- Midsize Fuel Cell Sedan can achieve <u>over 60% reduction in CO2</u> <u>using Natural Gas to produce Hydrogen</u>
- 40% less CO2 than BEV Sedan on U.S. Avg. Grid Mix



FC Vehicle – Estimated Industry Volumes

Calendar Year	New Vehicles	Units in Operation
2009	Hundred	Hundreds
2010	Hundreds	Hundreds
2011	Hundreds	Hundreds
2012	Hundreds	Thousands
2013	Hundreds	Thousands
2014	Thousand	Thousands
2015+	Thousands	Thousands

LA Basin H₂ Station Capacity vs Demand



Shifting the Infrastructure Paradigm

Chasing H₂ Infrastructure Station Technology (DOE) Early Fleet Research (AQMD) Marketing University Effort (UCI/UCD) Target Customers Demographics

Mind-Set

Station proximity

Market Driven

Market-Driven Fundamentals:

- Building Hydrogen Communities
- Target Customers
 - Demographics
 - Mind-Set
 - Emotional Appeal
- Sustainable Markets
 - "Neighbors tell neighbors"

"Market Driven" Infrastructure

• Begin with Markets

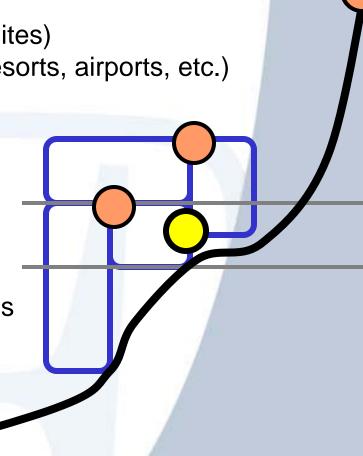
- Identify Communities
- Consider Corridors (key streets)
- Consider Highways (Between Communites)
- Consider Destinations (work centers, resorts, airports, etc.)

"Cluster Concept"

- Redundancy / Backup
- Primary 5 minutes from residence
- Backup ≤ 15 minutes rush hour traffic

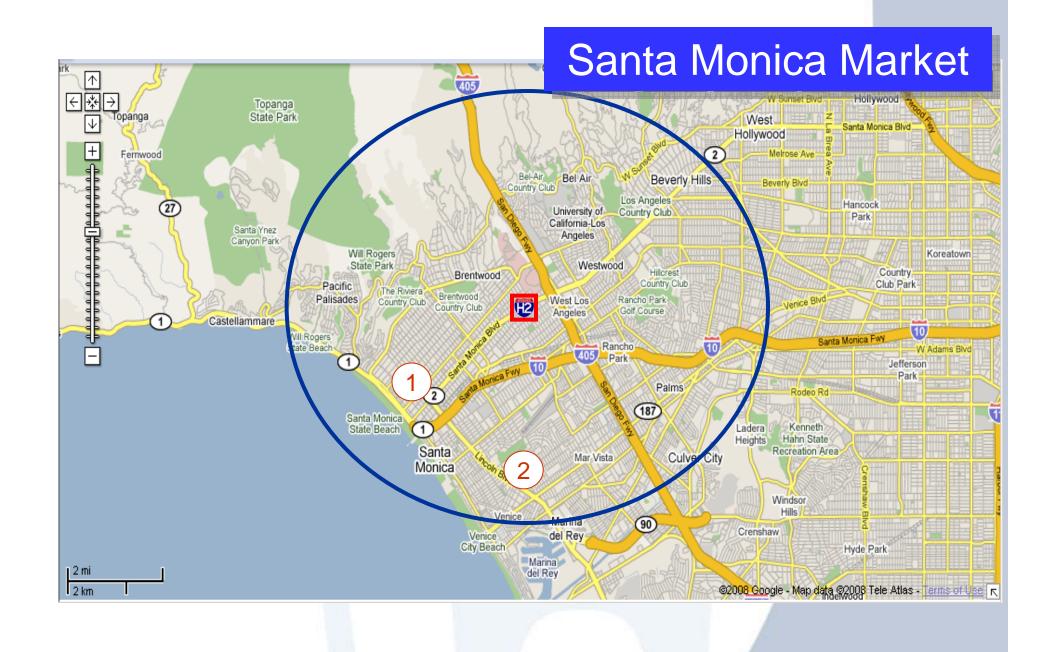
Consider Stations

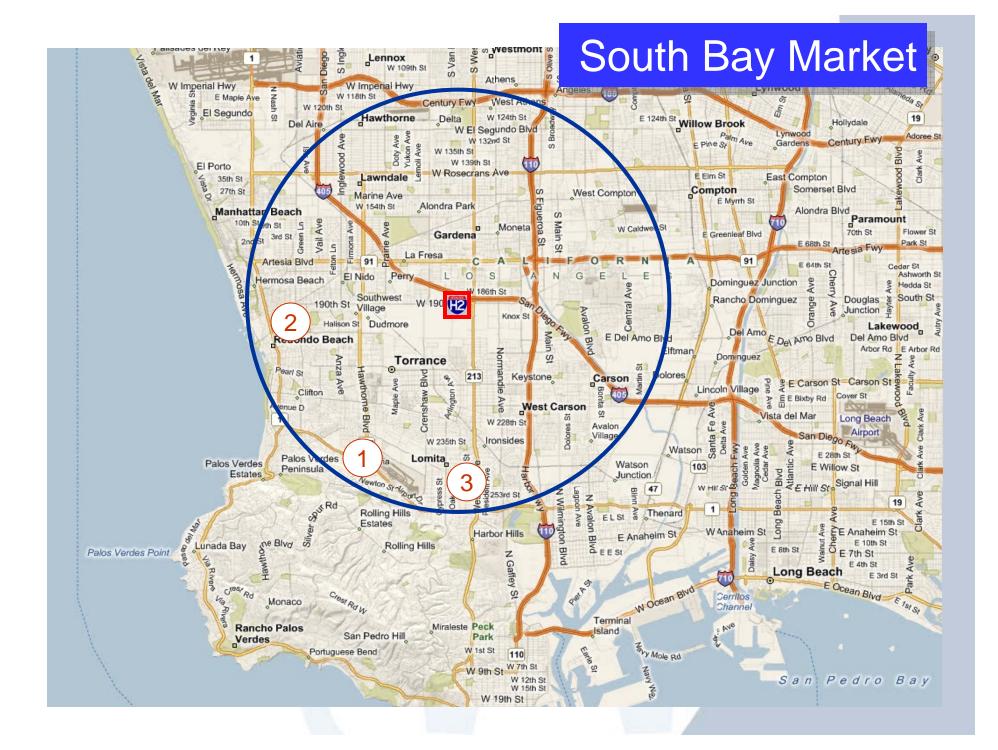
- "Marquee" or Image Stations
- Smaller Convenient Community Stations
- Destinations & Nodes
- Mix of 35 and 70 mpa
- Diverse Technologies
- Diverse Sizes, Scaleable



LA Markets with the highest H₂ / Clarity Interest







Irvine & Newport Beach Markets 57 W Almond Ave E Palmyra Ave Canyon Regional Lampson Ave Garden Grove Park Cowan Heights Cleve Tustin Trask Ave Colonia Foothills Manzanillo Lemon Heights Westminster Barber City Oasis Ave East Tustin Red Hill Hazard Ave Santa Ana Silverado W 5th St W 1st St 5 Tustin W McFadden Ave McFadden Ave Browning Edinger Ave Santa Ana Boulevard Gardens Gardens Hell Ave Terry Dr bour Limestone Canyon er Ave Warner Ave Fountain Regional Park Valley Modjeska Tustin Slater Ave Marine-Liberty Park 55 Kathryn Whiting š W Alton Av Ranch Wilderness Park Irvine luntington 133 05 \$ S19 Central Foothill Ranch Park **Huntington Beac** Portola Hills 0 Adams A Fairview Costa Mes Rancho Regional Trabuco Park Atlanta Ave University W Wilson St Victoria St 39 California University, Bake Pkwh Rancho Santa Margarita Lake Forest Newport Mission Viejo Ridge Route Di New ort Beach Heights Laguna Woods Lido Isle an Joaquin Hills Veronimo Ra Balboa Newport Coast Laguna W Balboa Blvd La Pal Rd Laguna Hills Balboa Coast 1 Wilderness Park Las Flores 050 P Crystal Cove

H₂ Station Infrastructure Funding Needs

H2 Station Funding Needs:

- 1 new 100 kg/day station coming on-line per quarter beginning from mid-2010
- Stations need to be clustered in early "Hydrogen Communities" where demand is expected
- Stations need to be "Retail Oriented"
 - Good ingress, egress
 - Well Lit, Clean, visibility from the street
 - On Well-traveled Streets
- "Semi-Permanent" Stations are OK if:
 - "Mobility" is hidden
 - Separate Pump and Dispenser that is permanent is OK

HONDA

The Power of Dreams