

California Environmental Protection Agency

Air Resources Board

Selecting Locations for Hydrogen Infrastructure

California Energy Commission

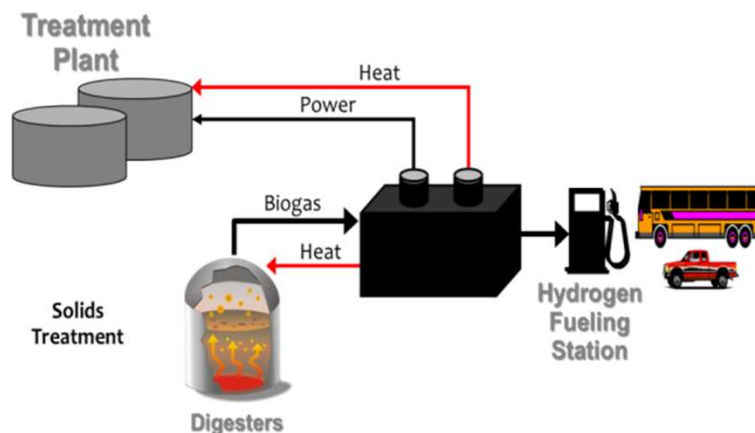
DOCKETED
12-HYD-01

TN # 65942

JUN 26 2012

Gerhard H Achteik Jr.

Presentation to the California Energy Commission
June 22, 2012

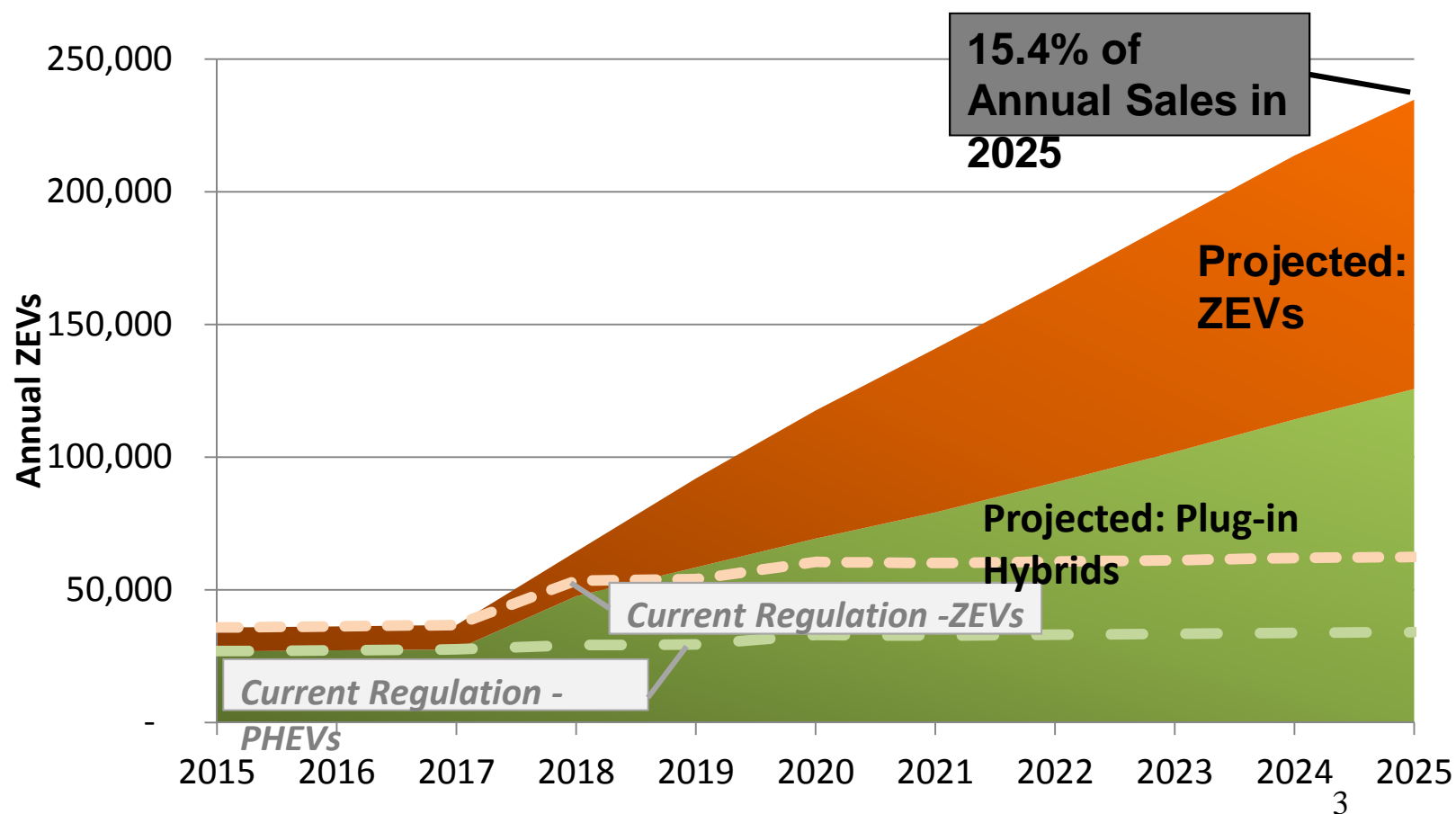


Agenda

- Infrastructure drivers
- Approaches to selecting site locations
- Defining optimal locations

Zero Emission Vehicles Requirements Board Adopted January 26/27, 2012

ZEVs Need Infrastructure



CEC/ARB Manufacturer Survey Results

- December 2009**

Region	2014	2015-2017
Northern California	443 (24%)	14,210 (32%)
Southern California	1,396 (76%)	30,496 (68%)
<i>Statewide Total</i>	<i>1,839</i>	<i>44,706</i>

- January 2011**

Region	2014	2015-2017
Northern California	193 (14%)	16,230 (31%)
Southern California	1,196 (86%)	36,770 (69%)
<i>Statewide Total</i>	<i>1,389</i>	<i>53,000</i>

- October 2011**

Region	2014	2015-2017
Northern California	176 (14%)	16,540 (31%)
Southern California	1,127 (86%)	36,460 (69%)
<i>Statewide Total</i>	<i>1,303</i>	<i>53,000</i>

October 2011 CEC/ARB Survey Results

Northern California Communities	2014
East Bay Area – Berkeley, Emeryville, Oakland	3%
Peninsula & South Bay – San Francisco, Palo Alto, Mountain View, San Jose	7%
Other	
Sacramento Valley – Sacramento, Yolo, Yuba	3%

October 2011 CEC/ARB Survey Results

Southern California Communities	2014
Northwest Los Angeles Co. Coastal – Santa Monica, West Los Angeles	20%
Southwest Los Angeles Co. Coastal – Torrance, Redondo Beach, Hermosa Beach	13%
Orange County	
North Orange County - Yorba Linda, Fullerton	1%
North Orange County Coastal - Newport Beach, Huntington Beach, Seal Beach	13%
Central Orange County - Santa Ana, Fountain Valley, Garden Grove, Anaheim	4%
Central Orange County Coastal - Newport Beach, Laguna Hills, Laguna Beach	10%
Saddleback Valley - Irvine, Tustin, Mission Viejo, Lake Forest, Rancho Santa Margarita	10%
Capistrano Valley - Laguna Niguel, Dana Point, San Juan Capistrano, San Clemente	12%

October 2011 CEC/ARB Survey Results

Southern California – Other locations	2014
South Central Coast – Santa Barbara, Ventura	0.2%
South Los Angeles Co. Coastal – Long Beach, Carson	0.8%
West San Fernando Valley – Agoura Hills, Calabasas, Reseda, Encino	0.%
Walnut Valley – Diamond Bar, Pomona, Walnut	0.3%
San Diego	2%

What is the best approach for selecting site locations for stations in the future?

Consider the following

- Utilize Vehicle Manufacturer input
- Utilize modeling data
 - University of California at Irvine,
 - University of California at Davis
- CaFCP Roadmap document
- Prioritize on geographic locations
- Ensure statewide coverage

What is the best approach for selecting site locations for stations in the future? (Continued)

- Hold workshops in targeted regions
- Visit station to gauge characteristics
- Consider Petroleum Marketers input
- Consider technology provider input
- Research DMV registration
 - Hybrid and BEV data
 - Clean Vehicle Rebate Program awards

What defines the optimal hydrogen station location?

- Where it can serve the most customers
 - Priority is Light Duty Fuel Cell Vehicles
 - Secondary, when possible transit & material handling co-location
- Ingress/egress to station
- Access to main thoroughfares
- Convenient and safe

What defines the optimal hydrogen station location? (Continued)

- Where it can serve critical/occasional customers
 - Bridging station; LA/SF
 - Destination/Expansion; Lake Tahoe, Santa Barbara, Palm Springs, San Diego
- Where it can be utilized to support outreach
 - Trade schools, colleges, universities, communities

What defines the optimal hydrogen station location? (Continued)

- Where it can take advantage of local renewable hydrogen rich feedstock
- Where it can benefit Environmental Justice Communities
- Where it reduces criteria Pollutants/GHG most effectively