California H2 Update

NASEO Call – 8/31/15
Air Agency Leadership/Imperative

Context: CA – some of the worst air quality in the nation – challenge to meet NAAQS

- Transportation is biggest emitter
- To meet NAAQS in California by 2050 need 100% of new light duty vehicles to be ZEV by 2040 (2025 in South Coast)
- CARB ZEV Program Leadership
Governor’s Support

Executive Order (B-16-2012)
- Directed California to work towards:
  - 1 million ZEVs by 2020
  - 1.5 million ZEVs by 2025
  - Transport related GHG’s 80% below 1990 by 2050
- **118,505 ZEV sold in CA in 2014**
- **2015 Inaugural Address: 50% Petroleum reduction by 2030**
- **Reduce GHGs 80% by 2050 (Executive Order S-3-05)**
Legislative Support


- California Energy Commission = $100 million/year
  - $20M/year for H2
- CARB = $50 million/year

**Up to $150 Million in Annual State Funding**

AB 32 (2006) – Reduce emissions to 1990 levels by 2020 (about 15% compared to BAU)
  - defended by voters in 2010
CEC’s Strong Solicitation

Offer (PON 13-607):

- Up to 85% of Capital Cost (90% for Renewable)
- Up to $100K/year for 3 years for O&M
  - Funding contingent on station operational date

Response:

- 28 Stations & 1 Mobile Fueler Awarded
- 32 other stations with passing scores
  - $46.6M awarded, $103M requested
A to do list from 2013 (EIN):

- Continue to offer attractive ZEV credits
- Subsidize early FCEVs (CVRP)

Building Market Confidence

- Secure long term funding (AB8)
- Offer attractive cost share
- Offer O&M Support
- Streamline grant process (Flexibility, rewarding fast deployment, permit support)

Automakers

Station Developers

+ A commitment mechanism

- Toyota/First Element

Credit: Energy Independence Now
Translating to Other States

- California has gone to great lengths to start the market - our goal is for everyone to benefit from this
  - Sharing lessons learned, driving down costs, building supply chain/experience

- Ingredients for FCEV success outside CA
  - Strong Leadership/Champions – from Govt. and/or Industry
  - Strong Support – from Govt. and Industry
  - Funding (public and/or private) to enable stations to succeed until H2 sales take over
California H2 – still work to do

- High Level Attention – monthly H2 Policy Meetings
- Working closely with DOE – C&S, station commissioning, H2USA, etc.
- Every step uncovers new challenges – we hope to help other jurisdictions plan/learn from our efforts
Supporting Station Permitting

- Community Outreach & Response
- Tracking & Troubleshooting
Codes & Standards

• **California Fire Code**
  • Adopted NFPA 2 (2011 Version) in 2014 (effective 2015)
    • Being put to use in the field now

• **CA Permitting Guidebook**
  • Incorporating Public Comments
    • Next draft by March 2015 (living document)
  • Feed into H2USA and other State efforts
## California’s New 2014 Accuracy Classes* and Tolerances for Hydrogen Fuel

<table>
<thead>
<tr>
<th>Accuracy Class</th>
<th>Acceptance Tolerance</th>
<th>Maintenance Tolerance</th>
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<tbody>
<tr>
<td>2.0</td>
<td>1.5%</td>
<td>2.0%</td>
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<tr>
<td>3.0 installed before 2020*</td>
<td>2.0%</td>
<td>3.0%</td>
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<tr>
<td>5.0 installed before 2020*</td>
<td>4.0%</td>
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<tr>
<td>10.0 installed before 2018*</td>
<td>5.0%</td>
<td>10.0%</td>
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</tbody>
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* No new installations after the end of the designated calendar year unless regulations are further amended. Existing installations allowed to operate until decommissioned.
Thank You

Tyson Eckerle
ZEV Infrastructure Project Manager
tyson.eckerle@gov.ca.gov
916-322-0563