Hydrogen Transportation

Board of Directors
Santa Barbara County
Air Pollution Control District

Ben Ellenberger
Manager, Technology and Environmental Assessment Division
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Overview

- Background
- State, National, and International Action
- Status Update
- Next Steps
Background

- On-road vehicles emit 18% of smog-forming pollutants in the county
- Cleaner air depends on reductions of on-road emissions
- Hydrogen fuel cell vehicles have almost zero tailpipe emissions
- Fuel cell vehicles are available now in California and more are on their way
Power Control Unit
Governs the flow of electricity

Electric Motor
Propels the vehicle more quietly, smoothly, and efficiently than an internal combustion engine and requires less maintenance

Fuel Cell Stack
Converts hydrogen gas and oxygen into electricity to power the electric motor

High-Output Battery
Stores energy generated from regenerative braking and provides supplemental power to the electric motor

Hydrogen Storage Tank
Stores hydrogen gas compressed at extremely high pressure to increase driving range

Photo courtesy of American Honda Motor Corp.
California Action

- ZEV Action Plan - 1.5 M vehicles by 2025
  - Infrastructure and Planning
  - Consumer Awareness
  - Transform Fleets
  - Grow Jobs and Private Investment
- AB 8 - $20 M per year until 100 stations in State
- ZEV Standards – Increasing Production Requirements
National and International Action

- California, Oregon + Northeast – 3.3 M ZEV by 2025
- Tokyo
  - 2020 Olympics: 6,000 vehicles, 35 stations
  - 2025: 100,000 vehicles, 100 buses, 80 stations
- Germany: 50 stations now, 400 by 2023
- UK: 15 stations now, 65 by 2020
Tri-County Hydrogen Readiness Plan

- $242,872 Grant from Energy Commission
- Regional plan: identify infrastructure needs, potential sites
- Create permitting toolkit
- Community outreach
- First responder outreach
- Assess fleet potential
Project So Far

- Establish Work Plan and Schedule
- Sign sub-contracts
- Model fleet and private vehicle adoption
- Draft infrastructure plan
- Assess planning department needs
- Assess fire department needs
Completing the Project

- On-the ground reality check
- Finalize infrastructure plan
- Community outreach
- Training for permitting agencies
- Training for first responders
- Assessment of public fleet opportunities
After the Project

- Public investment
- Private developers
- Public fleets
- Private fleets
- State funding
- Local funding
Questions