



Natural Gas Conversions Light- and Medium-Duty Vehicles

Clean Fuels Program Advisory Group

September 3, 2009

CNG Vehicles

- **Cleaner than Gasoline/Diesel Fueled Vehicles**
- **Reduce Greenhouse Gas Emissions**
- **Only One OEM Model Currently Available in U.S. → Honda Civic GX**
- **Several Small Volume Manufacturers Filling the Void**
- **AQMD Has Funded SULEV or Cleaner**



CNG Upfitters



- **Gasoline to CNG Conversions**
- **AQMD Sponsored Conversions**
 - **Conversion Prices Kept in Check**
- **Upfitters Certifying in California**
 - **BAF Technologies - Presently**
 - **Baytech Corporation - Presently**
 - **NaturalDrive Partners – In Progress**

Challenges to Upfitters

● CARB Certification

- Especially onboard diagnostics
- Timely and costly



● Not a Guaranteed Market

- Primarily a function of gasoline sales prices

BAF Technologies

● AQMD Co-Funded CNG Conversions

➤ 2004

- Ford Crown Victoria & E-450 Van
- \$300,000 of \$1,227,600 Project Cost



➤ 2007

- Ford F-150, F-250 Pick-Up Trucks
- \$250,000 of \$675,000 Project Cost



● Presently Available Conversions

- Ford: Crown Victoria, F-150, -250, & -350 Pick-Up Trucks, E-350 Van, Expedition
- Lincoln: Town Car, Navigator, Mark LT
- Mercury Marquis

Baytech Corporation

● AQMD Co-Funded Conversions

➤ 2001

- Chevy S-10 Pick-Up
- \$186,211 of \$398,728 Project Cost

➤ 2005

- OBD Systems - Full-Sized & Cutaway Vans
- \$319,615 of \$774,896 Project Cost



● Presently Available Conversions

- Chevy: Silverado, Cargo Van, Express Pass, W3500
- GMC: Sierra, Savana
- Workhorse Custom Chassis P30 & Isuzu NPR

NaturalDrive Partners

- Chevrolet Impala which Has EPA Certification
- Board-Approved 2009 Co-Funding for CARB Certification
- Derived from Gasoline-Powered/E85-Compatible
- Competitively Priced
 - Use of Existing Wiring System
 - Long Refueling Range (250~390 Miles)
- AQMD - \$81,388 of \$234,388 Cost (Including In-Kind Contributions)



Additional Projects

- **CNG Taxicab & Shuttle Incentive Buydown**
 - **Co-Funding Since 2001**
 - **Deployment for Commercial Airport Service**
 - **631 CNG Taxis & 20 CNG Shuttle Vans**
- **CNG Home Refueling Unit Buydown Program**
- **CNG Powered Ambulances**
- **Police Vehicles - CNG Conversion & Demo**
 - **City of Redlands in 2009**
 - **LA County Sheriff's Dept - Proposal to the Board**
 - **Evaluate vehicle through Dept's nationally recognized police vehicle testing program**