



Demonstrate Natural Gas-Powered Concrete Mixer Truck

Clean Fuels Retreat
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Science and Technology Advancement



Background

- Concrete Mixer Trucks in South Coast Air Basin
 - 4,700 vehicles
 - 8% of HDV population
 - Engine continuously operating; PTO for mixer drum
 - 36% Idling Time
 - CEQA impact for new construction areas





Program

- Develop and Demonstrate CNG-powered concrete mixer truck for commercial viability
- Partner with McNeilus Truck Manufacturing Co.
- Development
 - Engine / Chassis / Mixer Body
 - ISLG & fuel system installation
 - Engineering and optimization
 - Fueling needs, tank placement





Program (cont)

- Demonstration
 - Participation of local ready-mix businesses
 - Vehicle storage, transport, refueling, maintenance
 - Operator training, survey
 - Data collection
 - Emissions





Program (cont)

- Engine Performance & Emission Testing
 - Stationary vehicle testing
 - CNG and Diesel comparison



- Emission concentrations
 - SEMTECH gas analyzer
 - MAHA PM and 5 gas analyzer



Preliminary Feedback

- Companies: Robertson's Ready-Mix, Cemex, CalPortland, A&A, Superior
- Favorable responses from all users
 - Performance
 - Fuel Cost
 - Fueling Convenience – overnight slow fill
 - Clean Fueling - “no-spills”
- Robertson's interest in purchasing 100 vehicles in next purchase cycle



Costs

- Project Cost - \$380,000
- McNeilus : \$280,000
- AQMD : \$100,000
- Vehicle and Mixer
- Engine replacement
- CNG fueling system
- Demonstration development and implementation
- Fueling and maintenance