Emissions of HDV’s Have Declined Significantly Over Short Period of Time

EPA’s Version of “Moore’s Law”
New Air Rules Would Not Allow For On-Road Emissions in South Coast Region

2030 Ozone: Source Contributions

Background + Ships + Aircraft + Locomotives = 72 ppb
(With majority Tier 4 Locomotives; Approx 75% Tier 3 Ships)

Source: SCAQMD
I-710 – The Nation’s Zero Emission Truck Corridor?

- 19 mile stretch of highway links nation’s largest port system to rail yard in East Los Angeles
- Corridor has national significance -- 40% of the containers shipped to the U.S. travel through the combined ports of Long Beach and Los Angeles
- Congestion and air quality related health concerns require new ways of thinking -- new truck only lanes being considered
- CALSTART examining feasibility of zero or near-zero emission & low carbon trucks for truck lanes

A zero emission truck only corridor along I-710 could reduce congestion and improve air quality
First Stages: Identify Tech Feasibility, Barriers, Next Steps

- Draft report prepared for SCAQMD and Metro
- Key preliminary findings:
  - No technology barriers to developing zero-emission freight haul trucks
  - Could be commercial within 5-10 years
  - Key issues are product development, economic, business case and regulatory
  - Need to develop a comprehensive “ecosystem” for success of corridor, vehicles
Technology Readiness Options - I-710
ZET Lane Option

**Ready to Demonstrate Now**
- Dual Mode Diesel-Electric Hybrid 10-mile EV range
- Battery Electric Vehicle - Full EV with limited range
- Range-Extender EV with Fuel Cell
- Range-Extender EV with Turbine
- Double/Triple trailers; RNG fuel; other non-zero emissions technologies

**Ready to Demo Within 3 Years**
- Dual Mode Hybrid 30+mile range
- H/EV with Catenary power
- H/EV with In-Road power
- Long-Range BEV and/or Plug-In EV/Fast-Charger
- CNG Battery-Electric Hybrid
- CNG "zero" emissions engines

**Ready to Demo Within 5+ Years**
- Advanced Fuels, Engines, and infrastructure
- Platooning and ITS control of advanced trucks
Similar to the Volt But Drivers Selects When ZE Miles Occur

Volvo Plug-in Hybrid Diesel – Michelin Challenge Bibendum, Berlin, May 2011
CA Clean Vehicles Incentives Will Decline Dramatically Over Next Five Years

- Several incentive programs will sunset without action
- To sustain progress and meet air quality, climate, and energy security goals, 2012 levels probably need to be maintained
- Need to update criteria toward technologies and solutions that achieve multiple goals

Funding for clean transportation is scheduled to drop off dramatically
Clean Transportation Solutions℠
Advanced Transportation Technologies℠

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