



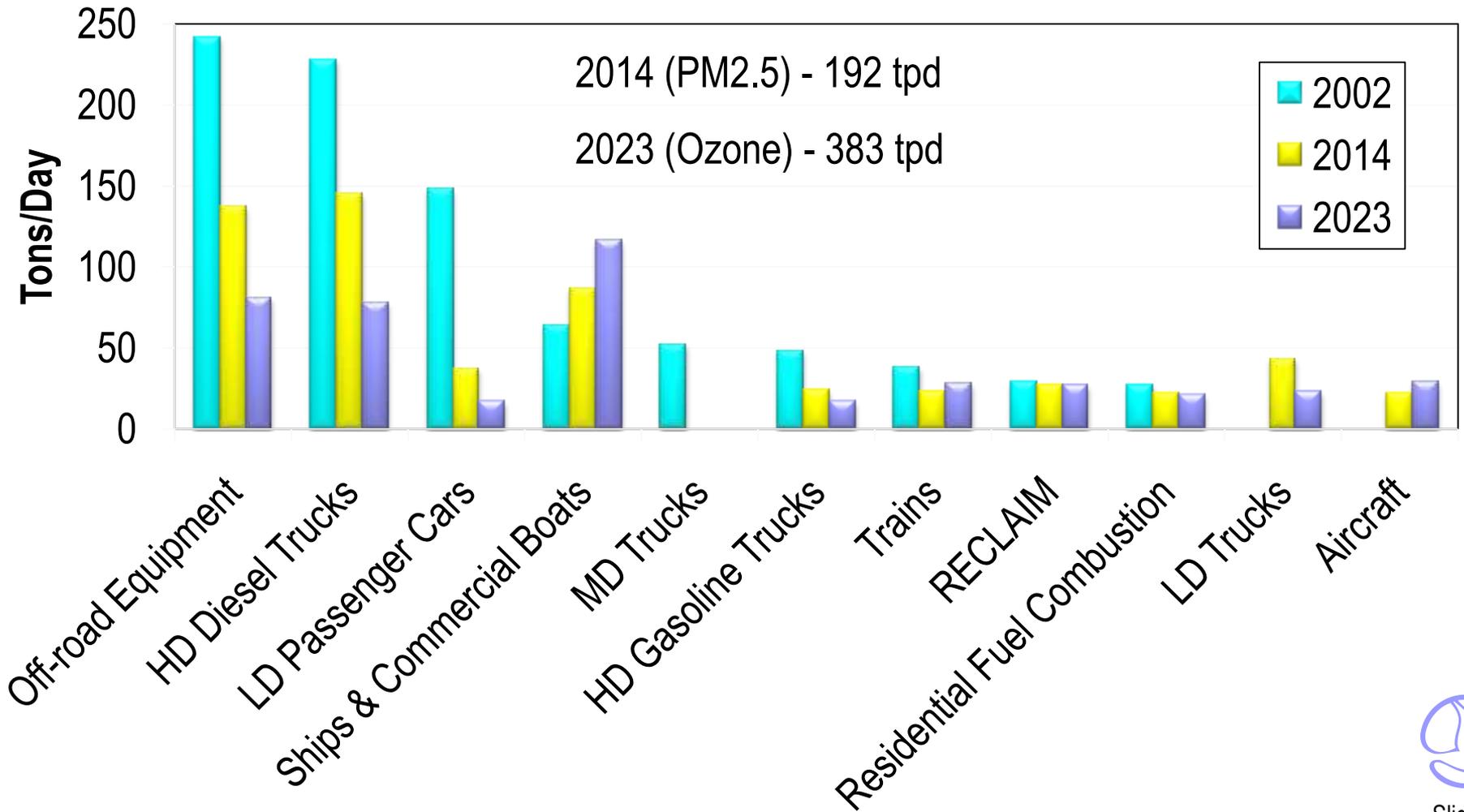
Technology Advancement Office Advisory Group Meeting

Light-Duty Vehicle Projects February 3, 2010

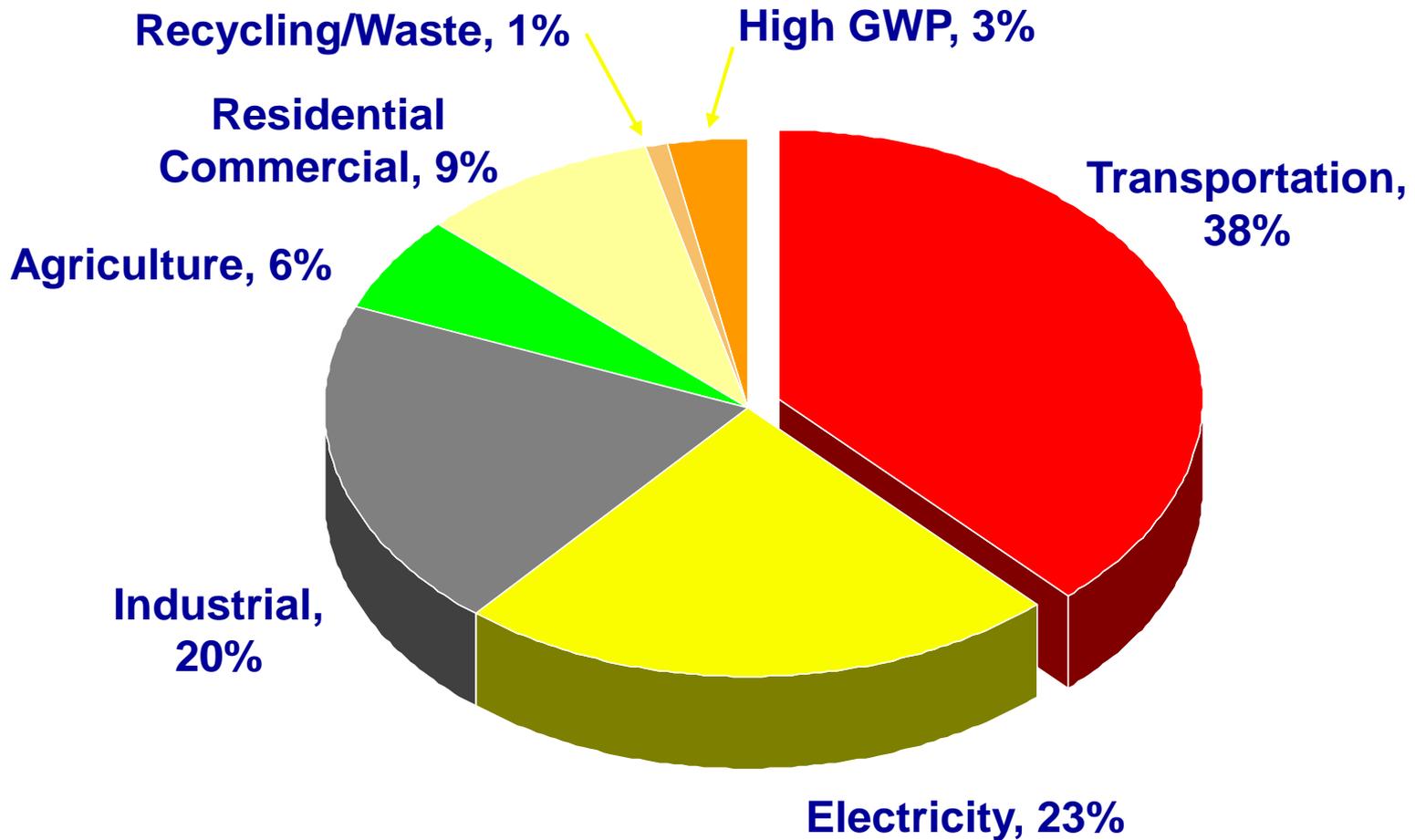


Lisa Mirisola
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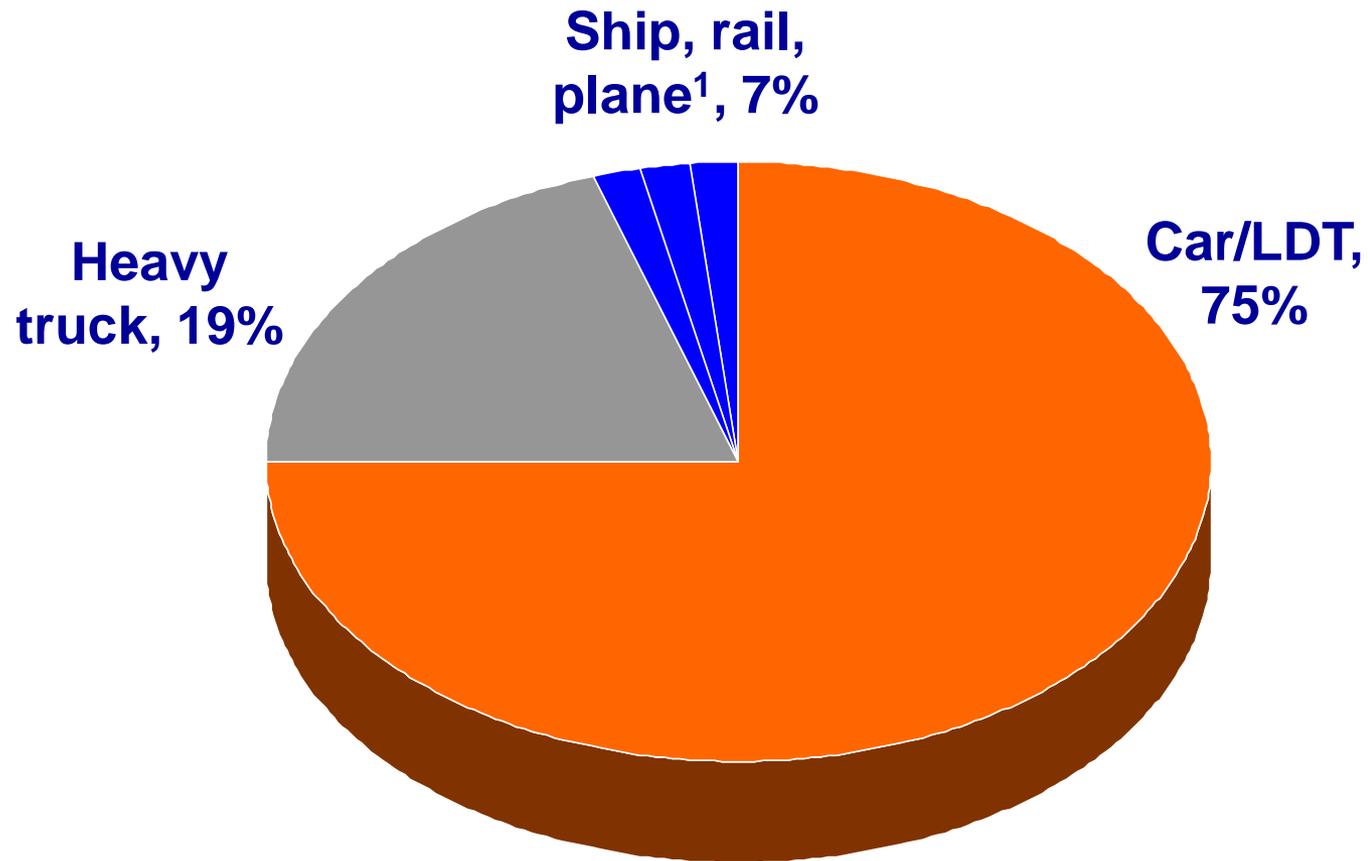
NOx by Category



Sources of GHG Emissions 2002-04



Transportation GHG Emissions 2002-04



Courtesy of CARB

¹ Within CA



Projects Completed in 2009

Fuel Cell vehicle demonstrations at AQMD

- Honda FCX
- Mercedes Fcell A-class
- Toyota Highlander FCHV



Next generation fuel cell vehicles coming soon!

New Honda FCX Clarity just arrived!



Projects Completed in 2009



- Plug-In Hybrid Gasoline-Electric Sprinter Van
 - EPRI subcontracted with DaimlerChrysler
 - Baseline testing at SCE
 - Demonstrated at AQMD for one year
 - Mercedes ended PHEV van development in 2009



- Electric Tram at Descanso Gardens
 - Replaced 1970 propane-fueled tram, continues in service six days per week
 - New application of electric airport tug combined with ADA compliant 42 passenger tram
 - 10 mph top speed, 10 mile per day, recharges overnight, plans to add solar
 - Co-funded by LA County



2009 Progress Overview

Plug-in Hybrid Electric Vehicles

- EnergyCS – up to 5 Priuses,
3 in operation at AQMD
over 150,000 cumulative miles



- Thirty Vehicle Program

- 10 A123 Hymotion Plug-In Priuses
2 in operation at AQMD
8 more deliveries in 2010
- 20 Quantum Plug-In Hybrid Escapes
battery supplier changed
design review complete
prototype demonstrated at AQMD
20 deliveries in 2010



Plug-in Hybrid Electric Vehicle CARB Test Procedures

- CERTIFICATION PROCEDURES FOR AFTERMARKET CONVERSION OF HYBRID ELECTRIC VEHICLES TO ADD OFF-VEHICLE CHARGE CAPABILITY
- CARB Hearings
January 29, 2009
May 28-29, 2009
- Revised Plug-In Hybrid Electric Vehicle Test Procedure and Aftermarket Parts Certification.
- Hybrid Electric Vehicles Test Procedures website:
<http://www.arb.ca.gov/msprog/zevprog/hevtest/hevtest.htm>
- Small volume manufacturer – less than 100 units per year
Tier 1 – 50 or fewer units – simplified process to improve tracking
5 year/75,000 miles or remaining period warranty (whichever is longer)



Battery Electric Vehicles

- **BMW Mini-E**

- Driving Range: 100 miles
- Battery Design: 5,088 lithium ion cells
- Top Speed: 95 mph (governed)
- 5 vehicles at AQMD
- 12 month demonstration, extension possible



- **South Bay Cities Council of Governments**

- Demonstrate 5-10 Neighborhood Electric vehicles
 - Top Speed: 25 mph (governed)
- Vehicles rotated among about 30 participants
- 18 month demonstration



New Projects

- EPRI Plug-In Fuel Cell Hybrid Electric Vehicle Initial Study
 - \$100,000 total; \$50,000 AQMD Clean Fuels & \$50,000 ARB
 - Four months schedule
 - Tasks include stakeholder team formation & work scope
 - Final report will propose a scope of work, schedule, and budget for a full study
- UC Davis Institute of Transportation Studies (ITS)
Sustainable Transportation Energy Pathways (STEPS)
 - \$2M+ total; \$120,000 AQMD Clean Fuels support for four projects
 - Hydrogen Infrastructure Transition Analysis – LA area study
 - Electric Vehicle Energy Loads on the Grid – LA area study
 - Plug-In Hybrid Electric and Alternative Fuel Vehicle Surveys
 - Cross-Comparison of Vehicle-Fuel Pathways



Automaker Activities



Light-duty Potential Projects

- **ZEV support**
Encourage hybridization
- **Collaborative Projects**
Potential Funding: DOE, ARB, CEC, etc.
- **Additional vehicle applications**
All Electric Range and Blend/Boost strategies
- **Vehicle integration & supply chains**
Role for AQMD may be increasing
- **Study consumer behavior**
Encourage plugging in at night
- **Infrastructure updating & support**



For More Information....



South Coast
Air Quality Management District

Cleaning the air that we breathe...

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