



Technology Advancement Office Advisory Group Meeting

Overview and Goals for the day



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Science and Technology Advancement

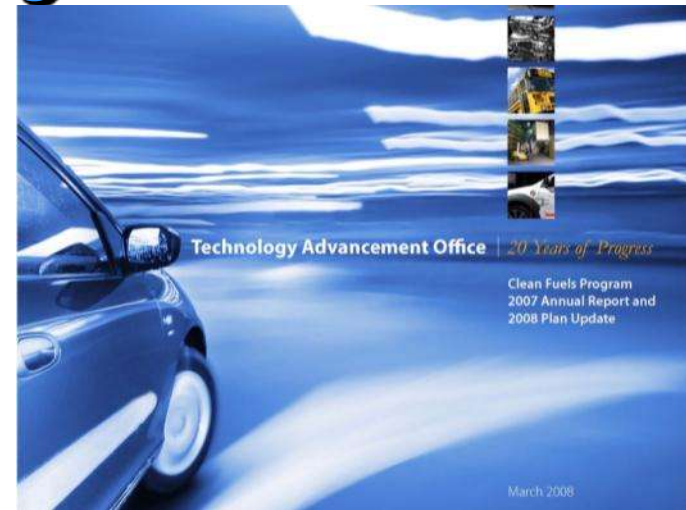
Technology Advancement Advisory Group

- Two meetings a year
 - Winter (Jan-Feb): Annual report
 - Summer (Jul-Aug): Plan update
- Input on progress, projects and proposed direction
 - Annual Report
 - Plan Update



Clean Fuels Program

- Initiated in 1988
- ~ \$12M/year
- RD³ program to accelerate deployment of clean technologies
- 5 year funding authorizations
- SB 1646 (Padilla)
 - Reinstated administrative cap to 5%
 - Removed sunset date



Structure for Today

- Overview for context
- Broad snapshot of AQMD TAO activities
- Specific discussion on technology sectors
 - Needs
 - On-going projects
 - Potential projects
- Wrap up with proposed Plan Update distribution



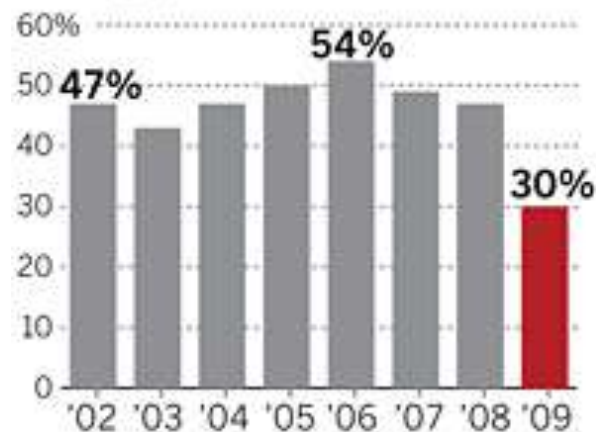
Concern about air pollution declines in California, poll finds

The percentage who think smog is a 'big problem' in their region drops sharply. Support for the state's greenhouse gas law also falls.

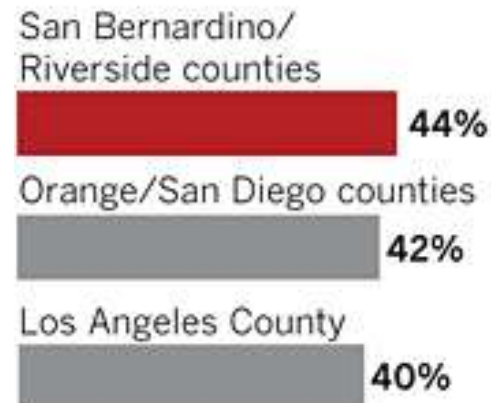
By Margot Roosevelt

July 30, 2009

Percent of Los Angeles County residents who say air pollution is a big problem:



Percent saying they or an immediate family member suffers from asthma or respiratory problems:



State of the Air 2009

AMERICAN LUNG ASSOCIATION. LungUSA.org / 1-800-LUNGUSA

Most Polluted U.S. Cities by Ozone

Ozone | [Year-Round Particle Pollution](#) | [Short-Term Particle Pollution](#)

Click on a city below to learn more about its ranking

[#1 Los Angeles](#)

[#2 Bakersfield](#)

[#3 Visalia](#)



- [#4 Fresno](#)
- [#5 Houston](#)
- [#6 Sacramento](#)
- [#7 Dallas-Fort Worth](#)
- [#8 Charlotte](#)
- [#9 Phoenix](#)
- [#10 El Centro](#)
- [#11 Hanford](#)
- [#12 Las Vegas](#)
- [#13 San Diego](#)
- [#14](#)

State of the Air 2009

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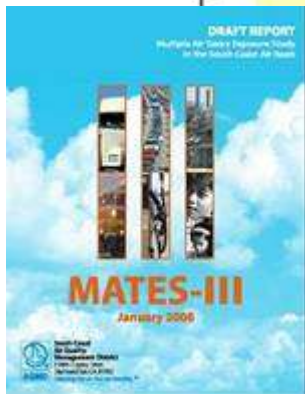
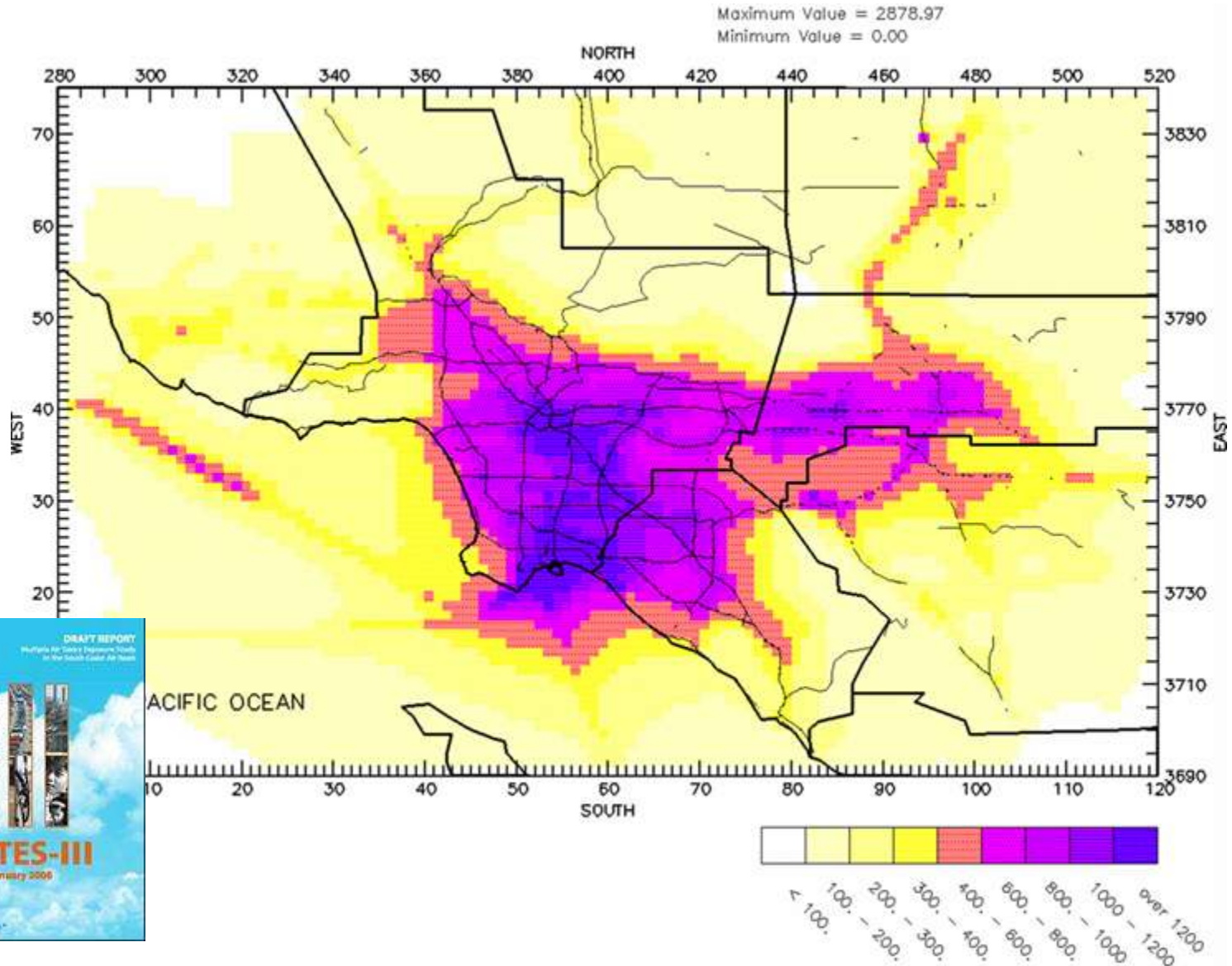
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- [#1 Bakersfield](#)
- [#2 Pittsburgh](#)
- [#3 Los Angeles](#)



- [#4 Visalia](#)
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- [#7 Fresno](#)
- [#8 Cincinnati](#)
- [#9 Detroit](#)
- [#10 Cleveland](#)
- [#11 Charleston](#)
- [#11 Huntington](#)
- [#11 Louisville](#)
- [#14 Macon](#)
- [#14 St. Louis](#)

Estimated Cancer Risk



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years

<http://pediatrics.aappublications.org/cgi/content/abstract/124/2/e195>



Kids' lower IQ scores linked to prenatal pollution

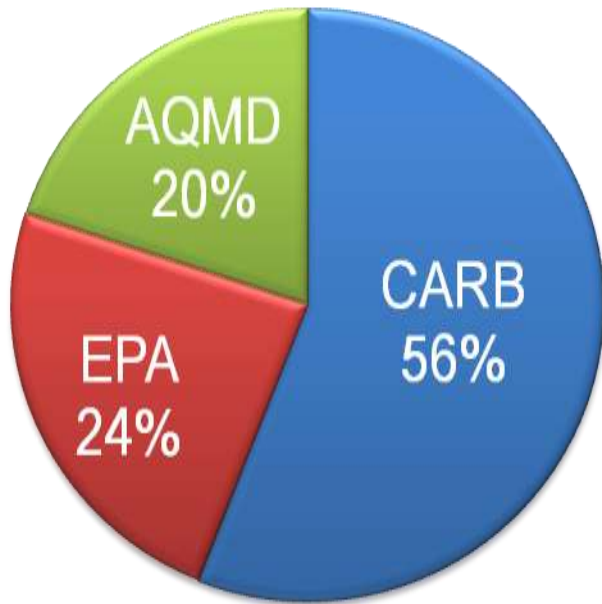
By LINDSEY TANNER (AP) – Jul 19, 2009

<http://www.google.com/hostednews/ap/article/ALeqM5j9P3TvW2sr9YkDb0wggex3iDO8SQD99HVF100>



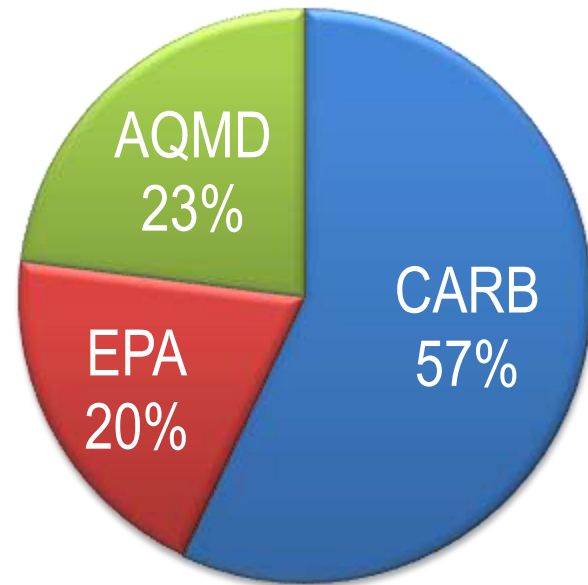
Fair Share

PM2.5 (2014)



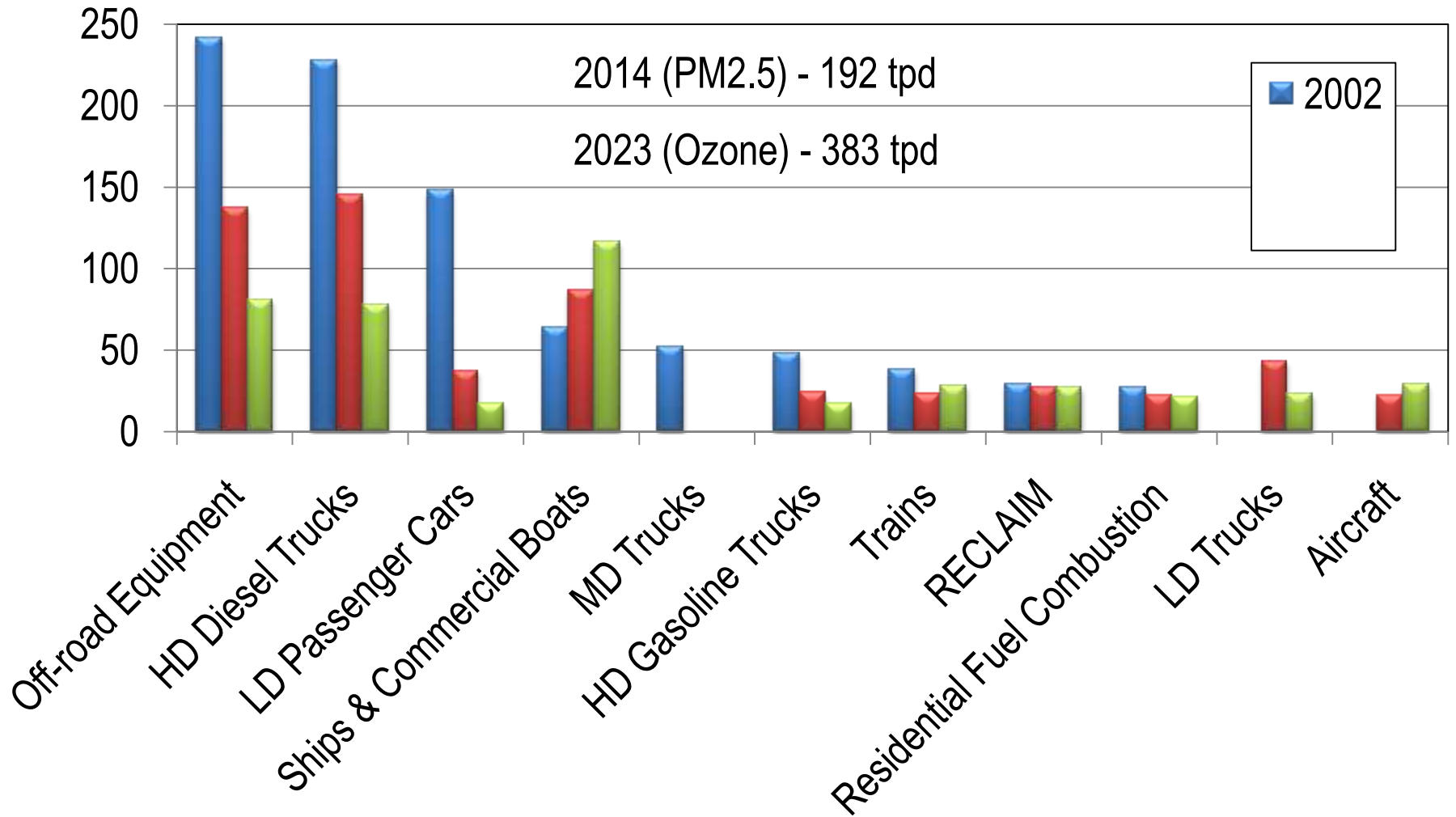
(NO_x, SO_x, PM_{2.5})

Ozone (2023)



(NO_x, VOC)

NOx by Category



Emphasis

- 2014
 - PM2.5: direct and NOx (precursor)
 - Off-road and heavy-duty diesel trucks
- 2023
 - Ozone: NOx and VOCs
 - Ships and commercial boats & HD diesel
- Accelerate fleet turnover
- Low and zero emission technologies

Stimulus Funding Update





Stimulus Funding

American Recovery and Reinvestment Act

- EPA – DERA (\$300M)
 - Region 9: \$30M
 - Emerging Technologies \$20M
- DOE – Trans. Electrification (\$400M)
- DOE – Clean Cities (\$300M)



EPA DERA Awards

Awardee	Project	Amount
Bay Area Air Quality Management District (BAAQMD)	Install diesel particulate filters (DPF) on 103 delivery trucks	\$2M
California Air Resources Board	Repower eight older switch yard (three engines per switcher) locomotives with new Tier 3 nonroad electrical generator set (genset) engines to operate in South Coast	\$8.89M
California Department of Transportation	Install Level 3 diesel particulate filters (DPF) on 46 engines	\$1M
City of Los Angeles Harbor Department	Retrofit 27 vehicles including harbor vessels, trucks, sweepers, loaders, cranes, forklifts	\$2M
Port of Long Beach	Replace, repower, or retrofit 118 pieces of cargo handling equipment	\$4M
San Diego County Air Pollution Control District	Replace, repower, or install diesel particulate filters (DPF) on 125 school buses	\$1.56M
San Joaquin Valley Unified Air Pollution Control District	Repower 30 nonroad vehicles used by agriculture sector in San Joaquin Valley	\$2M
San Joaquin Valley Unified Air Pollution Control District	Install diesel particulate filters (DPF) on 190 school buses operating in San Joaquin Valley	\$4M

EPA DERA Emerging Technologies

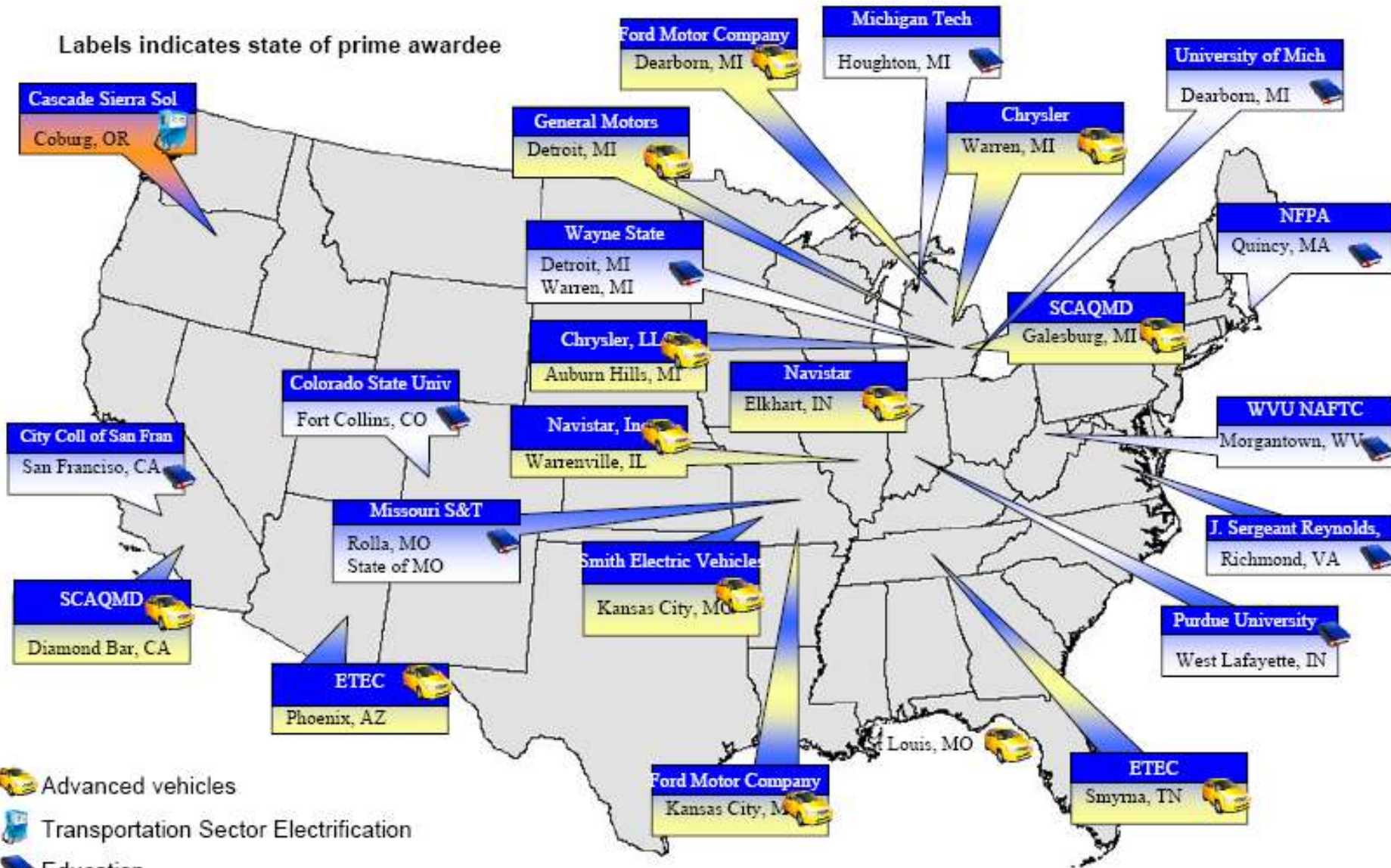
SCAQMD awarded two projects for \$2M each

- Demonstrate retrofit selective catalytic regenerating technology (SCRT) on 90 trucks
- Demonstrate selective catalytic continuously regenerating technology (SCCRT) on 90 trucks



Transportation Electrification Award Distribution

Labels indicates state of prime awardee



Transportation Electrification

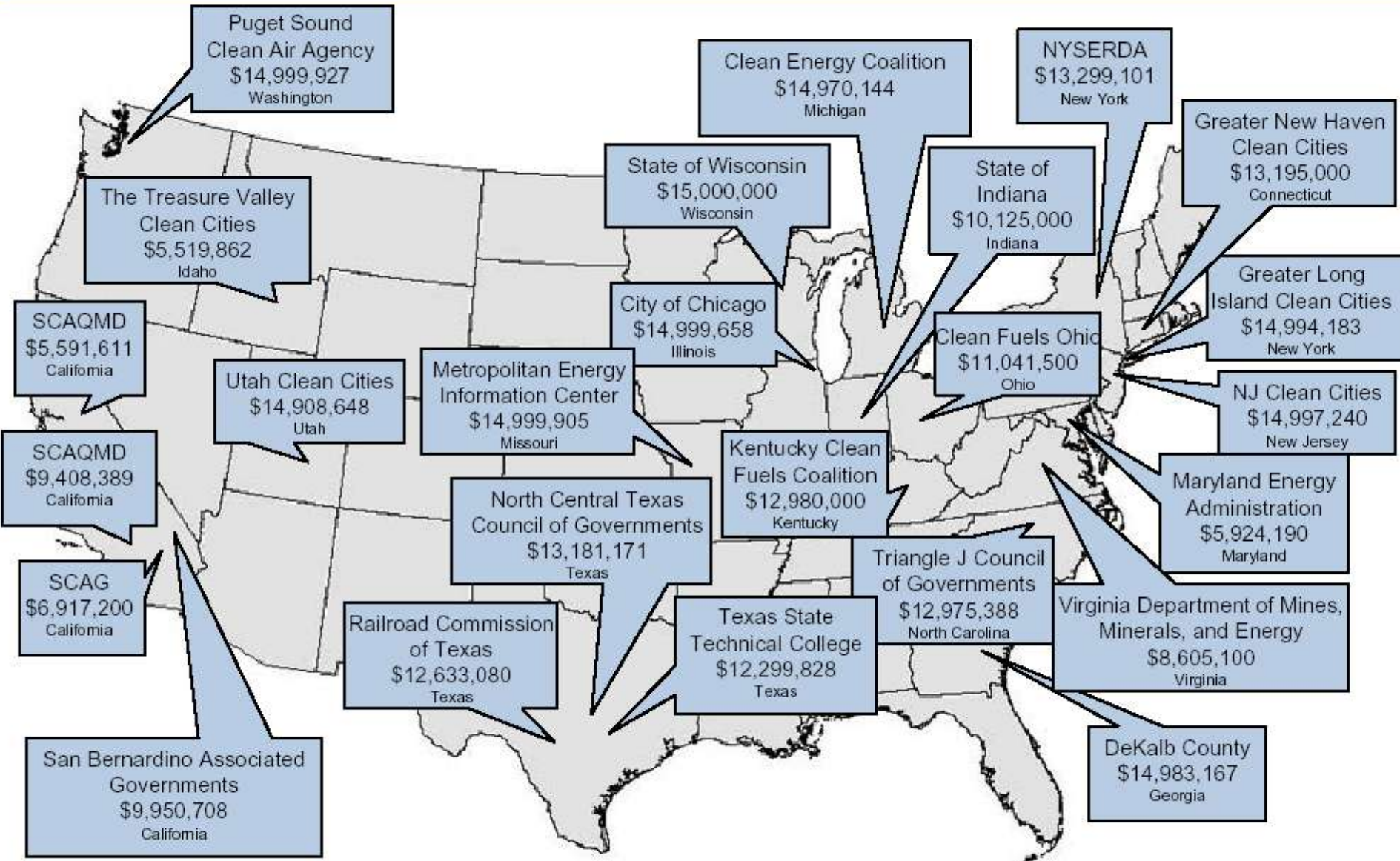
- SCAQMD only government agency to win award
- National effort with partners: EPRI and Eaton
- Cofunding by DOE and CEC
- \$45M DOE, \$5M CEC and remaining \$40M from Eaton and utility/fleet participants





U.S. Department of Energy Energy Efficiency and Renewable Energy

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable



Many awards involve regional or multi-state projects and may not be limited to the state of the grantee

DOE Clean Cities Awards

Name	Awardee	Amount
LNG Drayage Truck Replacement Program	SCAQMD	\$9.4M
UPS – Ontario	SCAQMD	\$5.6M
E85 Refueling Station Expansion	SCAG Clean Cities	\$6.9M
J.B. Hunt (LNG Trucks and Refueling Stations)	San Bernardino Association of Governments	\$9.9M

ARRA Funding to AQMD

• EPA School Bus Traps (CARB)	\$ 2M
• EPA DERA Emerging Tech	\$ 4M
• DOE Transportation Electrification	\$45M
• DOE Clean Cities	<u>\$15M</u>
	\$66M

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