

Scoping Plan Early Action Measures

Sustainability Summit and Spring Green Fair

May 6, 2009

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California Air Resources Board

Early Action Measures

Two Types

- Nine Discrete Early Actions: regulations reducing GHGs adopted by ARB and enforceable by Jan 1, 2010
- Other Early Action Measures: GHG reduction measures underway or to be initiated between 2007-2012. May be regulatory or non-regulatory measures.

Nine Discrete Early Actions

- Shore power for ships in ports
- Heavy Duty Truck Efficiency
- DIY Auto Air Conditioning
- Reduced GHGs from semiconductor Industry
- Reduced GHGs from consumer products
- Tire Inflation
- Low Carbon Fuels
- Landfill Methane capture
- SF6 in manufacturing

Port Shore Power For Ships

Dec. 2007

- Ports of Hueneme, Long Beach, Los Angeles, Oakland, San Diego, and San Francisco
- Applies to container, passenger and refrigerated cargo ships
- Must turn off auxiliary (diesel) power engines and attach to shore-based electricity or use control techniques getting same level of reductions as shore power

Heavy Duty Truck Efficiency

Dec. 2008

- Reduce big-rig truck GHG emissions
- Improve tractor & trailer aerodynamics
- Add low rolling resistance tires
- Can update existing equipment
- Or buy new conforming equipment
- Various requirements phase in through 2019
- State loan programs available for upgrades
- Based on U.S. EPA Smartway Program

Truck Efficiency Costs and Benefits

	Tractor-Trailer Combination	
	New SmartWay Certified	In-Use Retrofitted
Fuel Savings (%)	10%	8%
Tractor incremental cost	\$2,100	\$250
Trailer incremental cost	\$2,900	\$2,900
Fuel savings (gallons/year)	1293	1034
Annual Savings @ \$3.14/gallon	\$4,060	\$3,250
Payback period in years		
(Trailer : Tractor = 1:1)	1.2	1.0
(Trailer : Tractor = 2.5:1)	2.3	2.3

Assume: baseline fuel economy of 5.8 miles per gallon, and an average long-haul annual mileage accrual rate of 100,000 miles.

DIY Auto Air Conditioner Cans

Jan. 2009

- 24 million cars on the road in California
- Auto refrigerant R-134a is a potent GHG
- Rule would bring a yearly reduction of about 260,000 metric tons of R-134a
- Same as reducing about 600 million miles of car driving
- Cans must have self-sealing valves
- Improved label instructions
- Container deposit and recycling
- Companies must do consumer education

Tire Inflation Measure

March 2009

- Automobile tire inflation
- Fuel efficiency -1% for every 3 psi under
- 50%-60% have underinflated tires
- One gallon of gasoline= 19.4 lbs CO₂
- Proper tire inflation would save 63 million gallons of gasoline per year
- Reduce CO₂ emissions

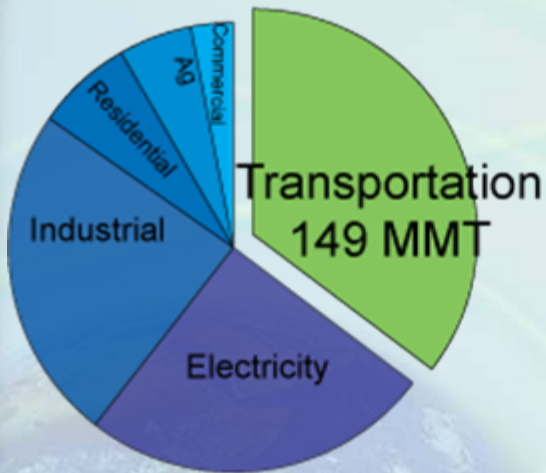
Low Carbon Fuel Standard

April 2009

- Gov's Executive Order of Jan. 2007
- 10% carbon reduction of fuels by 2020
 - Gasoline
 - Diesel
- Transport emissions come from vehicle efficiency, miles traveled and fuel
- 16 MMT reduction by 2020

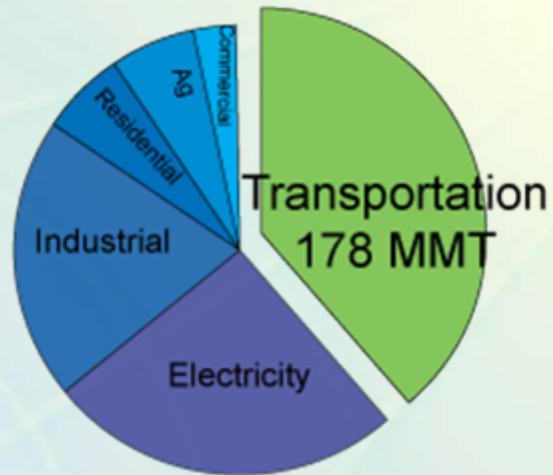
Transportation Emissions Increasing

1990



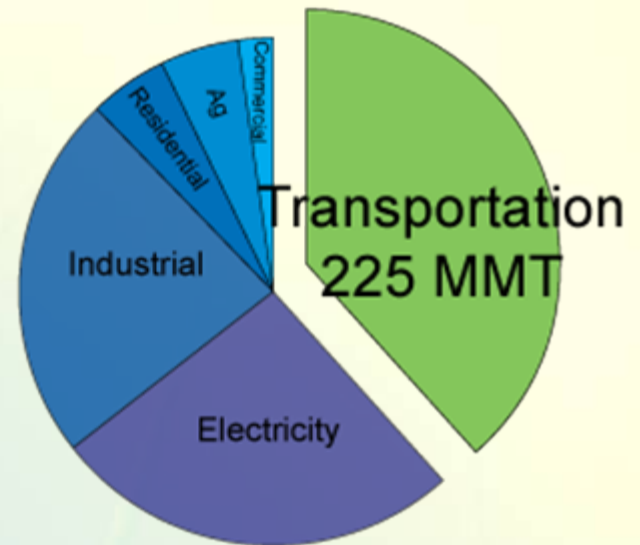
~425 MMT

2004



~469 MMT

2020

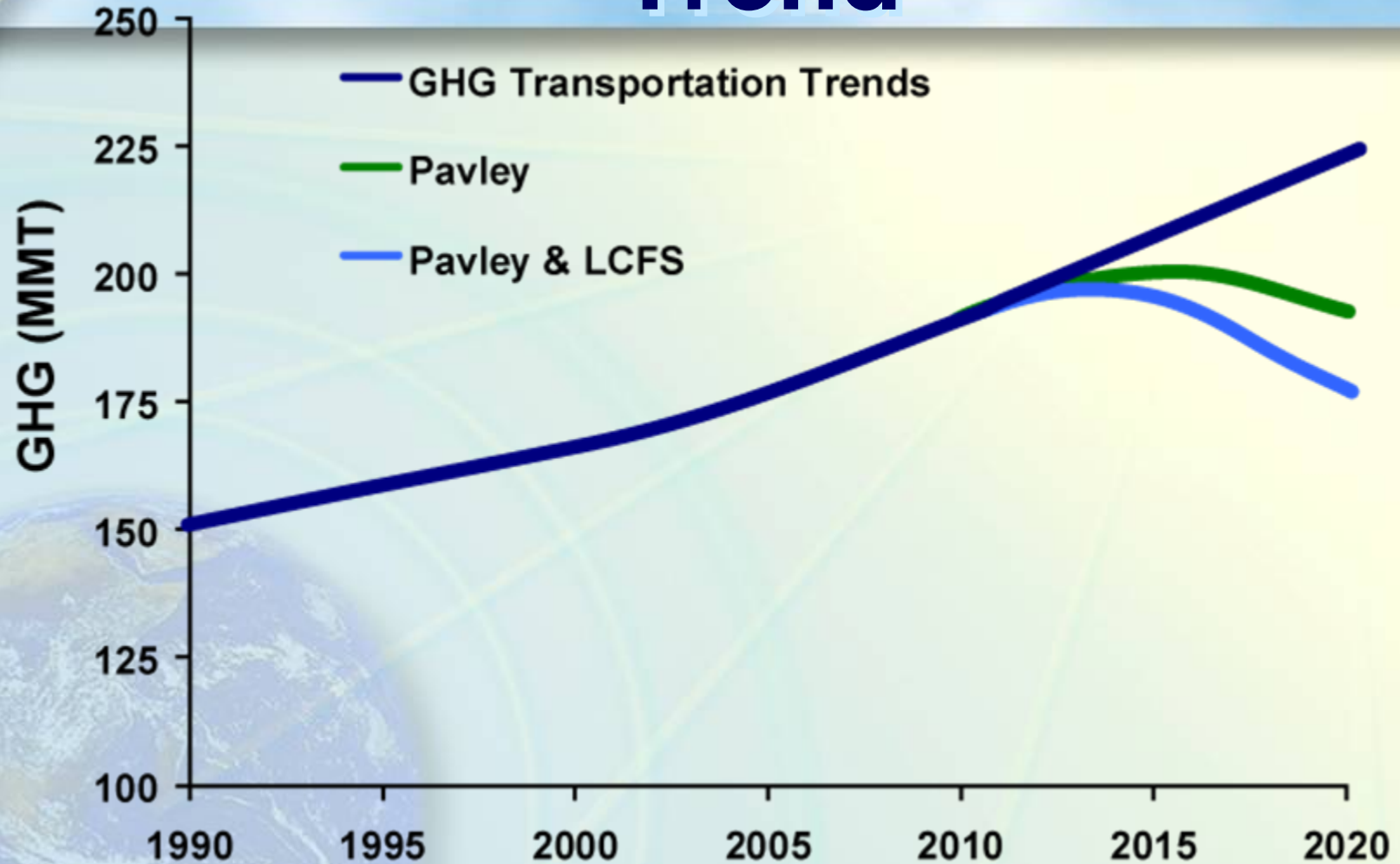


~595 MMT

LCFS Reduces GHG Emissions

- **Results in a 10 percent reduction in the carbon intensity by 2020**
- **Reduces 16 MMT GHG emissions from the transportation sector by 2020**
- **Achieves about 10 percent of the total emission reductions required to meet the AB 32 target**

Pavley and LCFS Reverse GHG Trend



Municipal Landfill Methane Capture

June 2009

- Methane is potent GHG: 22+ CO₂
- Some landfills lack methane collection systems
- Rule is for landfills receiving waste since 1977
- For most landfills with 450,000 tons of waste
- Will review possible energy generation from captured gas

Semiconductor, FS6 & High GWP Reductions Feb. 2009

- Hydrofluorocarbons, Perfluorocarbons, and Sulfur hexafluoride (23,900)
- Reductions in consumer products, semiconductor manufacturing and non-semiconductor products
- Small DIY cans, vehicle AC leak check and repair, capture at end of vehicle life, improved efficiency and low GWP alternative gases
- Many reductions rely on existing strategies

35 Other Early Action Measures

- Cement Blends & Production Energy Efficiency
- Cooler Cars
- Auto Air Conditioning Service & Dismantling
- Auto Air Conditioning Tested at Smog Check
- Oil & Gas Extraction Fugitive Methane
- Refrigerants from Decommissioned Shipping Containers, Home Units, plus tracking, reporting and deposit programs

For Additional Information

- ARB Climate Change Web Site:
www.arb.ca.gov/cc/cc.htm
- *(To stay informed, sign up for list serve)*
- California Climate Change Portal:
www.climatechange.ca.gov
- ARB Office of Climate Change contact:
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