

Air Resources Board
Co-Benefits of *2008 Scoping Plan Measures Implemented
(and related controls for short-lived climate pollutants)

TRANSPORTATION

Action (Year on left indicates Board adoption)	Zero Emission Provisions/ Incentives?	Emission Reduction Range in 2020¹ (Unless Otherwise Indicated) Ranges: <1, 1-5, 6-10, 11-20, 21-30, 31-50, >50		
		GHG in CO₂e (Million Metric Tons/Year)	PM_{2.5}/ Black Carbon (Tons per Day)	NO_x + VOC (Tons per Day)
Passenger Vehicles				
*2012-Advanced Clean Cars <ul style="list-style-type: none"> • Low emission vehicles III: MY2015-2025 • Second phase GHG standards: MY2017-2025 • Amended zero emission vehicle requirements: MY2009-2017 and MY2018+ 	✓	>30 (in 2035)	1-5 (in 2035)	>50 (in 2035)
<i>Other Passenger Vehicle Actions</i> <ul style="list-style-type: none"> • *2010-SB 375 Regional Transportation GHG Targets • 2004-First phase GHG standards (“Pavley 1”) • 1990-1998-Low emission vehicles I&II <i>In use vehicles</i> <ul style="list-style-type: none"> • *2009-Tire inflation requirements • 2009-Program guidelines for voluntary car scrap program 	✓	21-30	NQ	> 50
*2009-Low Carbon Fuel Standard New standards to lower the carbon content of transportation fuels	✓	11-20	1-5	1-5
*2009-Automotive Refrigerant Requirement to reduce leakage from small containers, establish a container deposit and return program, and require additional container labeling and consumer education requirements		<1	--	--

¹ Emission reduction ranges are for illustrative purposes only and should not be cited or quoted from this source. Developed from the most recent Initial Statement of Reasons for each rulemaking; these numbers may have changed based on the Board’s final action and updates to the emissions inventory.

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		GHG in CO₂e (Million Metric Tons/Year)	PM_{2.5}/ Black Carbon (Tons per Day)	NO_x + VOC (Tons per Day)
Trucks and Buses				
*2008-Truck/Trailer Efficiency to Cut GHG Regulation to reduce greenhouse gas emissions by improving long haul tractor and trailer efficiency through use of aerodynamic fairings and low rolling resistance tires.		1-5	<1	1-5
<i>Other Truck and Bus Actions</i> 2008-2010-Statewide Truck and Bus 2007-2010-Port and Railyard Drayage Trucks 2005-Public and Utility Fleets 2004-2011-Transportation Refrigeration Units 2004-2005-Idling Limits for Trucks (5 min) 2003-Ultra Low Sulfur Diesel Fuel for Trucks and Buses 2002-Idling Limits for School Buses (30 sec) 2000-2002-Urban Transit Buses 1990-2013-Smoke Inspection Programs for Trucks	✓	NQ	6-10	>50
Marine, Rail, and Offroad				
*2007-Ships at Berth/Shorepower Requires cruise, refrigerated, and cargo ships to shut off auxiliary engines and plug into shore-based electrical power, or use equivalent means, to cut emissions at berth	✓	<1	<1	21-30
<i>Other Marine and Rail Actions</i> 2008-2011-Cleaner Ship Fuels Off California Coast 2007-2010-Commercial Harbor Craft 2005-Cargo Handling Equipment at Ports and Railyards 2004-Clean Diesel Fuel for Harbor Craft and Locomotives	✓	<1	>10	>50
<i>Off-Road Diesel Equipment</i> 2007-2010-In-Use Off-Road Diesel Equipment 2004-Tier 4 Emission Standards for New Off-Road Engines 2006-Forklifts and Gas Equipment	✓	NQ	6-10	>50

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ENERGY

Action (Year on left indicates Board adoption)	Emission Reduction Ranges in 2020³ (Unless Otherwise Indicated) Ranges: <1, 1-5, 6-10, 11-20, 21-30, 31-50, >50		
	GHG in CO2e (Million Metric Tons/Year)	PM2.5/ Black Carbon (Tons/Day)	NOx + VOC (Tons/Day)
*2010-Renewable Electricity Standard (20 to 33%) approved but not finalized; Legislature set 33% Renewable Portfolio Standard (SB 2) in 2011	11-20	<1	1-5
2004-2011-Stationary Diesel Engines 2004-2010-Portable Diesel Engines	--	<1	11-20

INDUSTRIAL AND HIGH GWP

Action (Year on left indicates Board adoption)	Emission Reduction Ranges in 2020⁴ (Unless Otherwise Indicated) Ranges: <1, 1-5, 6-10, 11-20, 21-30, 31-50, >50		
	GHG in CO2e (Million Metric Tons/Year)	PM2.5/ Black Carbon (Tons/Day)	NOx + VOC (Tons/Day)
*2011-2012-Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Greenhouse Gas Emissions Cap-and-Trade Program, including compliance offset protocols and linkage with other jurisdictions	18+	1-5	>50
*2008-Consumer Products with Limits on High GWP Propellants	<1	--	6-10
*2009-Stationary Equipment Refrigerant Management Regulation	6-10	--	--
*2010-Sulfur Hexafluoride from Electrical Switchgear	<1	--	--
*2009-Fluorinated Gases from Semiconductor Operations	<1	--	--
*2009-Sulfur Hexafluoride from Non-Utility and Non-Semiconductor Applications	<1	--	--
*2010-Industrial Energy Efficiency and Co-Benefits Audits for Facilities with High GHG Emissions	enabling		

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⁴ See above.

WASTE

Action (Year on left indicates Board adoption)	Emission Reductions in 2020⁵ (Unless Otherwise Indicated)		
	GHG in CO₂e (Million Metric Tons/Year)	PM_{2.5}/ Black Carbon (Tons/Day)	NO_x + VOC (Tons/Day)
*2009-Methane Emissions from Municipal Landfills Regulation requires smaller and other uncontrolled landfills to install gas collection and control systems	1-5	--	NQ
<i>*2011-Mandatory commercial recycling. Proposed but cancelled when Legislature adopted AB 341 in 2011</i>	--	—	—
2002 Residential burning (ban on burn barrels)	NQ	NQ	NQ

AGRICULTURE/NATURAL AND WORKING LANDS

Action (Year on left indicates Board adoption)	Emission Reductions in 2020⁶ (Unless Otherwise Indicated)		
	GHG in CO₂e (Million Metric Tons/Year)	PM_{2.5}/ Black Carbon (Tons/Day)	NO_x + VOC (Tons/Day)
Smoke management-agricultural and prescribed burning	NQ	NQ	NQ

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⁶ See above.