

2007 South Coast Air Basin SIP Attainment Demonstration Summary Transmittal Notes

The attached tables summarize the emission reduction estimates used to develop attainment demonstrations and motor vehicle emissions budgets contained in the 2007 South Coast Air Basin SIP as described in the SIP submittal package. The ARB commitment is to achieve the aggregate total emissions reductions identified as the State's responsibility for 2014, 2020, and 2023, and as calculated from the summer planning inventory. Because PM_{2.5} attainment applies to the annual national ambient air quality standard, the tables in this attachment applicable to PM_{2.5} provide estimates of the corresponding control measure benefits in terms of annual average day emission inventories for attainment and conformity milestone years.

Table 1 - South Coast Air Basin Ozone Attainment Demonstration Emission Summary

This table summarizes the ozone attainment demonstration for the South Coast Air Basin on a summer planning inventory day basis. ARB's SIP commitment is to achieve the aggregate total emissions reductions shown.

Table 2 - South Coast Air Basin PM_{2.5} Attainment Demonstration Emission Summary

This table summarizes the PM_{2.5} attainment demonstration, including estimated aggregate control measure benefits as described in Table 4. The values in this table are presented in terms of the annual average emission inventory corresponding to equivalent values computed on a summer planning inventory basis. ARB will track inventory baselines and control measure benefits in terms of the summer planning inventory only.

Table 3 – South Coast Air Basin 2023 Ozone Control Measure Benefits

This table provides the estimated benefits from each new control measure used in the ozone attainment demonstration shown in Table 1 as calculated from the summer planning inventory. The State's commitment for 2023 is to achieve the aggregate emission reductions shown on this table as "Subtotal of All State Measures".

Table 4 – South Coast Air Basin 2014 PM_{2.5} Control Measure Benefits

This table provides the estimated annual average day benefits corresponding to the State's summer planning inventory emission reduction from each new control measure used in the PM_{2.5} attainment demonstration shown in Table 2. ARB's commitment is to achieve the aggregate total emissions reductions as calculated from the summer planning day inventory and as shown on this table as "Subtotal of All State Measures".

Table 5a – For Informational Purposes Only - South Coast Air Basin Estimated Benefits of On-Road Control Measure Benefits in Attainment Years (Summer Inventory)

This table shows how the conformity budgets were derived from the ozone attainment demonstration in Table 1. These estimated benefits are reported in terms of the summer planning inventory.

Table 5b – For Informational Purposes Only - South Coast Air Basin Estimated Benefits of On-Road Control Measure Benefits in Ozone Conformity Milestone Years

This table shows how the conformity budgets were developed for milestone years from ozone attainment year budgets. The estimated values in this table are reported on a summer planning inventory basis.

Table 6a – For Informational Purposes Only - South Coast Air Basin Estimated Benefits of On-Road Control Measure Benefits in Attainment Years (Annual Average Inventory)

This table shows how the conformity budgets were derived from the PM_{2.5} attainment demonstration in Table 2. These estimated benefits are reported in terms of the annual average inventory.

Table 6b – For Informational Purposes Only - South Coast Air Basin Estimated Benefits of On-Road Control Measure Benefits in PM_{2.5} Conformity Milestone Years

This table shows how the conformity budgets were developed for milestone years from PM_{2.5} attainment year budgets. The estimated values in this table are reported on an annual average inventory basis.

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Table 1 - South Coast Air Basin Ozone Attainment Demonstration Emission Summary

Summer Average Tons Per Day

YEAR	TYPE OF MEASURES	NOX EMISSIONS REMAINING	NOX REDUCTIONS	VOC EMISSIONS REMAINING	VOC REDUCTIONS	SOX EMISSIONS REMAINING	SOX REDUCTIONS	PM2.5 EMISSIONS REMAINING	PM2.5 REDUCTIONS
2002	BASELINE	1079		897		54		99	
2003	BASELINE	505		534		N/A		N/A	
	ALREADY ADOPTED MEASURES		574		364		N/A		N/A
	DISTRICT COMMITMENTS		19		20		N/A		N/A
	STATE COMMITMENTS		141		54		N/A		N/A
	CAA 182(e)(5) MEASURES		231		40		N/A		N/A
	TOTAL		114	965	420	477	N/A	N/A	N/A

Table 2 - South Coast Air Basin PM_{2.5} Attainment Demonstration Emission Summary

Annual Average Tons Per Day

YEAR	TYPE OF MEASURES	NOX EMISSIONS REMAINING	NOX REDUCTIONS	VOC EMISSIONS REMAINING	VOC REDUCTIONS	SOX EMISSIONS REMAINING	SOX REDUCTIONS	PM2.5 EMISSIONS REMAINING	PM2.5 REDUCTIONS
2002	BASELINE	1093		844		53		99	
2014	BASELINE	654		527		45		101	
	ALREADY ADOPTED MEASURES		439		318		8		-2
	DISTRICT COMMITMENTS		7		10		3		3
	STATE COMMITMENTS		122		43		20		9
	ADDITIONAL STATE AND LOCAL COMMITMENTS		55		3		0		1
	ADDITIONAL FEDERAL ACTIONS		10						
	TOTAL		460	633	469	375	22	31	89

Note: Control measure benefits in this table are calculated on an annual average day basis based on corresponding summer planning inventory estimates. ARB will track measure benefits only on a summer planning inventory basis.

Table 3 - South Coast 2023 Ozone Estimated Benefits

Summer Average Tons Per Day

Individual measure estimates are for informational purposes only (see footnote)

AGENCY	MEASURES	EMISSION REDUCTIONS	
		NOx	ROG
SCAQMD Local Measures	FUG-02 Gasoline Transfer		4.1
	BCM-03 Wood Stoves		
	BCM-05 Charbroilers		
	CTS-01 Lubricants		2.0
	CMB-01 Non-RECLAIM Ovens	4.1	
	CMB-03 Space Heaters	1.2	
	MCS-01 Facility Modernization	2.2	9.2
	MCS05 Livestock Waste		0.6
	FLX-02 Refinery Pilot Program		1.64
	EGM-01 Redevelopment Projects	0.8	0.6
	MOB-05 AB923 LD Vehicles	0.4	0.71
	MOB-06 AB923 MD Vehicles	0.6	0.56
	SCOFRD-1 SOON Program	6.6	0.6
	SCOFRD-3 Metrolink Retrofit	3.3	
	SUBTOTAL	19.1	20.0
ARB State Measures	Smog Check Improvements	6.9	7.5
	Expanded Vehicle Retirement	0.2	0.5
	Reformulated Gasoline		2.5
	Cleaner In-Use HD Trucks	18.3	1.7
	Auxiliary Engine Cold Ironing	30.8	
	Clean Main Ship Engines	39.9	
	Port Truck Modernization	7.0	
	Cleaner Long-Haul Locomotives	15.6	1.9
	Harbor Craft Cleanup	5.9	
	Cleaner In-Use Off-Road Equipment	13.9	1.9
	Recreational Boats	2.4	17.6
	Off-Road Recreational Vehicles		6.4
	Consumer Products		13.7
SUBTOTAL	140.9	53.7	
ALL MEASURES	Subtotal of All Local Measures	19.1	20.0
	Subtotal of All State Measures	140.9	53.7
	Total of All Measures	160.0	73.7

Note: ARB's SIP commitment is to achieve the aggregate total emission reductions shown as "Subtotal of All State Measures". Benefits from individual measures are shown as estimates for informational purposes only.

Table 4 - South Coast Air Basin 2014 PM2.5 Estimated Benefits

Annual Average Tons Per Day

Individual measure estimates are for informational purposes only (see footnote)

AGENCY	MEASURES	EMISSION REDUCTIONS			
		NOx	ROG	SOx	PM2.5
June 1, 2007 Initial Measures					
SCAQMD Local Measures	FUG-02 Gasoline Transfer		3.7		
	BCM-03 Wood Stoves				1.0
	BCM-05 Charbroilers				1.1
	CTS-01 Lubricants		1.9		
	CMB-01 Non-RECLAIM Ovens	3.5			
	CMB-02 RECLAIM SOx			3.0	
	CMB-03 Space Heaters	0.8			
	MCS-01 Facility Modernization	1.6	2.0		0.4
	MCS05 Livestock Waste		0.8		
	FLX-02 Refinery Pilot Program		0.7		0.4
	EGM-01 Redevelopment Projects	0.0	0.0		0.0
	MOB-05 AB923 LD Vehicles	0.4	0.8		
	MOB-06 AB923 MD Vehicles	0.5	0.5		
	SUBTOTAL	6.8	10.4	3.0	2.9
	September 21, 2007 Supplemental Measures				
	Metrolink Retrofit	3.0			
	Port Improvements	3.0			
	SOON Program	12.0	1.0		0.5
	Unallocated Moyer SIP Credits	3.0			
	Local DMV Fees	4.0			
	SUBTOTAL	25.0	1.0		0.5
June 21, 2007 Initial Measures					
ARB State Measures	Smog Check Improvements	12.6	10.1		0.2
	Expanded Vehicle Retirement	2.5	2.7		0.1
	Reformulated Gasoline		4.3		
	Cleaner In-Use HD Trucks	47.2	5.1		3.0
	Auxiliary Engine Cold Ironing	18.5		0.4	0.3
	Clean Main Ship Engines	20.0		19.7	2.4
	Port Truck Modernization	2.0			0.5
	Cleaner Long-Haul Locomotives	4.3	0.7		0.2
	Harbor Craft Cleanup	4.6			0.2
	Cleaner In-Use Off-Road Equipment	10.5	2.4		2.6
	Recreational Boats	0.3	2.8		
	Off-Road Recreational Vehicles		2.3		
	Consumer Products		12.9		
	SUBTOTAL	122.4	43.3	20.1	9.4
September 21, 2007 Supplemental Measures					
	Expanded Truck Reductions	26.7	2.4		
	Greenhouse Gas Reductions	3.0			
	SUBTOTAL	29.7	2.4		
EPA Federal Measures	September 21, 2007 Supplemental Measures				
	Additional Federal Actions	10.0			
INITIAL MEASURES	Subtotal of Local Initial Measures	6.8	10.4	3.0	2.9
	Subtotal of State Initial Measures	122.4	43.3	20.1	9.4
	Total of All Initial Measures	129.2	53.7	23.1	12.3
SUPPLEMENTAL MEASURES	Subtotal of Local Supplemental Measures	25.0	1.0		0.5
	Subtotal of State Supplemental Measures	29.7	2.4		0.0
	Subtotal of Federal Supplemental Measures	10.0			
	Total of All Supplemental Measures	64.7	3.4		0.5
ALL MEASURES	Subtotal of All Local Measures	31.8	11.4	3.0	3.4
	Subtotal of All State Measures	152.1	45.7	20.1	9.4
	Subtotal of All Federal Measures	10.0			
	Total of All Measures	193.9	57.1	23.1	12.8

- Note: 1) The total of Supplemental Measures as reported in informal (press) documents is roughly 75 tpd NOx in 2014. This total includes 11 tpd of NOx-equivalent PM2.5 reductions from SCAQMD woodstove and charbroiler emission control measures.
- 2) ARB SIP commitments are made in terms of the summer planning inventory. This table shows the corresponding emission reductions in terms of the annual average inventory.
- 3) ARB's SIP commitment is to achieve the aggregate total emission reductions shown as "Subtotal of All State Measures". Benefits from individual measures are shown as estimates for informational purposes only.

Table 5a
For Informational Purposes Only - South Coast Air Basin
Estimated Benefits of On-Road Control Measures in Attainment Years

Tons Per Day - **Summer** Planning Inventory

		SIP Commitment Years					
		2014		2020		2023	
		NOx	VOC	NOx	VOC	NOx	VOC
ARB	Smog Check Improvements	12.0	10.5	8.3	8.7	6.9	7.5
ARB	Expanded Vehicle Retirement	2.4	2.8	1.3	1.2	0.2	0.5
ARB	Reformulated Gasoline	0.0	2.7	0.0	1.8	0.0	1.4
ARB	Cleaner In-Use HD Trucks	76.2	7.5	34.9	2.6	25.3	1.7
SCAQMD	AB 923 Light-Duty High-Emitter Id.	0.4	0.8	0.5	0.8	0.4	0.7
SCAQMD	AB 923 Med-Duty High-Emitter Id.	0.5	0.4	0.7	0.6	0.6	0.6
Total		91.4	24.6	45.7	15.6	33.5	12.4

Note: 1) The attainment demonstration is summarized in Table 1. Table 3 demonstrates that the State's SIP commitment is based on a reasonable expectation of benefits from potential measures. Table 5a shows how the transportation conformity budget benefits from new measures were derived from measures contained in the attainment demonstration. ARB's SIP commitment is to achieve the aggregate total emissions reductions shown as "Subtotal of All State Measures" in Table 3.

2) The control measure benefits shown in this table are for informational purposes only. No new ARB or SCAQMD control measure benefits were needed or used in the 2007 RFP SIP for the South Coast Air Basin.

Table 5b
For Informational Purposes Only - South Coast Air Basin
Estimated Benefits of On-Road Control Measures in Ozone Conformity Milestone Years

Tons Per Day - **Summer** Planning Inventory

		Conformity Milestone Years					
		2008		2011		2017	
		NOx	VOC	NOx	VOC	NOx	VOC
ARB	Smog Check Improvements	0.0	0.0	14.7	12.0	10.0	9.5
ARB	Expanded Vehicle Retirement	0.0	0.0	3.0	3.6	1.9	2.3
ARB	Reformulated Gasoline	0.0	3.6	0.0	2.9	0.0	2.5
ARB	Cleaner In-Use HD Trucks	0.0	0.0	38.4	3.6	52.3	4.6
SCAQMD	AB 923 Light-Duty High-Emitter Id.	0.2	0.2	0.2	0.6	0.5	0.8
SCAQMD	AB 923 Med-Duty High-Emitter Id.	0.1	0.1	0.3	0.3	0.6	0.5
Total		0.3	3.9	56.6	22.9	65.3	20.2

Note: 1) ARB measure benefits for conformity milestone years are based on estimates of benefits in attainment years. ARB's SIP commitment is to achieve the aggregate total emission reductions shown as "Subtotal of All State Measures" in Table 3. The control measure benefits shown above are for informational purposes only.

2) No new ARB nor SCAQMD control measure benefits were needed or used in the 2007 RFP SIP for the South Coast Air Basin.

Table 6a
For Informational Purposes Only - South Coast Air Basin
Estimated Benefits of On-Road Control Measures in Attainment Years

Tons Per Day - **Annual Average** Inventory

		SIP Commitment Years					
		2014			2023		
		NOx	ROG	PM2.5	NOx	ROG	PM2.5
ARB	Smog Check Improvements	12.6	10.1	0.2	7.2	7.3	0.2
ARB	Expanded Vehicle Retirement	2.5	2.8	0.1	0.2	0.5	0.1
ARB	Reformulated Gasoline	0.0	2.4	0.0	0.0	1.3	0.0
ARB	Cleaner In-Use HD Trucks	76.0	7.5	4.3	25.2	1.7	1.3
SCAQMD	AB 923 Light-Duty High-Emitter Id.	0.4	0.8	0.0	0.4	0.7	0.0
SCAQMD	AB 923 Med-Duty High-Emitter Id.	0.5	0.5	0.0	0.7	0.6	0.0
Total		91.9	24.0	4.6	33.7	12.1	1.6

- Note:
- 1) The attainment demonstration is summarized in Table 2. Table 4 demonstrates that the State's SIP commitment is based on a reasonable expectation of benefits from potential measures. Table 6a shows how the transportation conformity budget benefits from new measures were derived from measures contained in the attainment demonstration. ARB's SIP commitment is to achieve the aggregate total emissions reductions shown as "Subtotal of All State Measures" in Table 3.
 - 2) The control measure benefits shown in this table are for informational purposes only. No new ARB or SCAQMD control measure benefits were needed or used in the 2007 RFP SIP for the South Coast Air Basin.
 - 3) Control measure benefits in this table are calculated on an annual average day basis based on corresponding summer planning inventory estimates. ARB will track measure benefits only on a summer planning inventory basis.

Table 6b
For Informational Purposes Only - South Coast Air Basin
Estimated Benefits of On-Road Control Measures in PM_{2.5} Conformity Milestone Years

Tons Per Day - **Annual Average** Inventory

		Conformity Milestone Years								
		2009			2012			2030		
		NOx	ROG	PM2.5	NOx	ROG	PM2.5	NOx	ROG	PM2.5
ARB	Smog Check Improvements	0.0	0.0	0.0	14.3	11.1	0.2	5.6	6.4	0.2
ARB	Expanded Vehicle Retirement	0.0	0.0	0.0	2.9	3.4	0.1	0.2	0.4	0.1
ARB	Reformulated Gasoline	0.0	3.1	0.0	0.0	2.5	0.0	0.0	1.1	0.0
ARB	Cleaner In-Use HD Trucks	0.0	0.0	0.0	53.3	5.1	3.0	2.8	0.2	0.2
SCAQMD	AB 923 Light-Duty High-Emitter Id.	0.2	0.3	0.0	0.3	0.7	0.0	0.3	0.6	0.0
SCAQMD	AB 923 Med-Duty High-Emitter Id.	0.2	0.2	0.0	0.4	0.4	0.0	0.6	0.5	0.0
Total		0.3	3.5	0.0	71.2	23.1	3.3	9.4	9.2	0.4

- Note:
- 1) ARB measure benefits for conformity milestone years are based on estimates of benefits in attainment years. ARB's SIP commitment is to achieve the aggregate total emission reductions shown as "Subtotal of All State Measures" in Table 4. The control measure benefits shown above are for informational purposes only.
 - 2) No new ARB nor SCAQMD control measure benefits were needed or used in the 2007 RFP SIP for the South Coast Air Basin.
 - 3) Control measure benefits in this table are calculated on an annual average day basis based on corresponding summer planning inventory estimates. ARB will track measure benefits only on a summer planning inventory basis.