

**IND-01: BACKSTOP MEASURE FOR INDIRECT SOURCES OF EMISSIONS FROM PORTS AND PORT-RELATED FACILITIES
[NO_x, SO_x, PM_{2.5}]**

CONTROL MEASURE SUMMARY				
SOURCE CATEGORY:	IF THE BACKSTOP MEASURE BECOMES EFFECTIVE (I.E. IF EMISSIONS FROM PORT-RELATED SOURCES EXCEED TARGETS FOR NO _x , SO _x , AND PM _{2.5}), AFFECTED SOURCES WOULD BE PROPOSED BY THE PORTS AND COULD INCLUDE SOME OR ALL PORT-RELATED SOURCES (TRUCKS, CARGO HANDLING EQUIPMENT, HARBOR CRAFT, MARINE VESSELS, LOCOMOTIVES, AND STATIONARY EQUIPMENT), TO THE EXTENT COST EFFECTIVE AND FEASIBLE STRATEGIES ARE AVAILABLE			
CONTROL METHODS:	IF THE BACKSTOP MEASURE BECOMES EFFECTIVE, EMISSION REDUCTION METHODS WOULD BE PROPOSED BY THE PORTS AND POTENTIALLY COULD INCLUDE CLEAN TECHNOLOGY FUNDING PROGRAMS, LEASE PROVISIONS, PORT TARIFFS, OR INCENTIVES/DISINCENTIVES TO IMPLEMENT MEASURES, TO THE EXTENT COST EFFECTIVE AND FEASIBLE STRATEGIES ARE AVAILABLE			
EMISSIONS (TONS/DAY):				
ANNUAL AVERAGE	2008	2014	2019	2023
NO _x INVENTORY*	78.6	51.2	47.2	39.2
NO _x REDUCTION*		N/A	N/A	N/A
NO _x REMAINING*		51.2	47.2	39.2
SO _x INVENTORY*	25.5	1.8	2.3	2.7
SO _x REDUCTION*		N/A	N/A	N/A
SO _x REMAINING*		1.8	2.3	2.7
PM _{2.5} INVENTORY*	3.7	1.0	1.0	1.1
PM _{2.5} REDUCTION*		N/A	N/A	N/A
PM _{2.5} REMAINING*		1.0	1.0	1.1
CONTROL COST:	TBD			
IMPLEMENTING AGENCY:	SCAQMD			

* The purpose of this control measure is to ensure the emissions from port-related sources are at or below the AQMP baseline inventories for PM_{2.5} attainment demonstration. The emissions presented herein were used for attainment demonstration of the 24-hr PM 2.5 standard by 2014.

DESCRIPTION OF SOURCE CATEGORY

This control measure is carried over from the 2007 AQMP/SIP. If the backstop measure goes into effect, affected sources would be proposed by the ports and could include some or all port-related sources (trucks, cargo handling equipment, harbor craft, marine vessels, locomotives, and stationary equipment), to the extent cost effective and feasible strategies are available.

Other sources—i.e. sources that are unrelated to the Ports—would not in any way be subject to emission reductions under this measure (including through funding of emission reduction measures, or purchase of emission credits, by the Ports or port tenants).

Background

Emissions and Progress. The Ports of Los Angeles and Long Beach are the largest in the nation in terms of container throughput, and collectively are the single largest fixed source of air pollution in Southern California. Emissions from port-related sources have been reduced significantly since 2006 through efforts by the Ports and a wide range of stakeholders. In large part, these emission reductions have resulted from programs developed and implemented by the Ports in collaboration with port tenants, marine carriers, trucking interests and railroads. Regulatory agencies, including U.S. EPA, CARB and SCAQMD, have participated in these collaborative efforts from the outset, and some measures adopted by the Ports have led the way for adoption of analogous regulatory requirements that are now applicable statewide. These port measures include the Clean Truck Program and actions to deploy shore-power and low emission cargo handling equipment. The Ports of Los Angeles and Long Beach have also established incentive programs which have not subsequently been adopted as regulations. These include incentives for routing of vessels meeting IMO Tier 2 and 3 NO_x standards, and vessel speed reduction. In addition, the ports are, in collaboration with the regulatory agencies, implementing an ambitious Technology Advancement Program to develop and deploy clean technologies of the future.

Port sources such as marine vessels, locomotives, trucks, harbor craft and cargo handling equipment, continue to be among the largest sources of PM_{2.5} and PM_{2.5} precursors in the region. Given the large magnitude of emissions from port-related sources, the substantial efforts described above play a critical part in the ability of the South Coast Air Basin to attain the national PM_{2.5} ambient air standard by federal deadlines. This measure provides assurance that emissions from the Basin's largest fixed emission source will continue to support attainment of the federal 24-hour PM_{2.5} standard. Reductions in PM_{2.5} emissions will also reduce cancer risks from diesel particulate matter.

Clean Air Action Plan. The emission control efforts described above largely began in 2006 when the Ports of Los Angeles and Long Beach, with the participation and cooperation of the staff of the SCAQMD, CARB, and U.S. EPA, adopted the San Pedro Bay Ports Clean Air Action Plan (CAAP). The CAAP was further amended in 2010, updating many of the goals and implementation strategies to reduce air emissions and health risks associated with port operations while allowing port development to continue. In addition to addressing health risks from port-related sources, the CAAP sought the reduction of criteria pollutant emissions to the levels that assure port-related sources decrease their "fair share" of regional emissions to enable the Basin to attain state and federal ambient air quality standards.

The CAAP focuses primarily on reducing diesel particulate matter (DPM), along with NO_x and SO_x. The CAAP includes proposed strategies on port-related sources that are implemented through new leases or port-wide tariffs, Memoranda of Understanding (MOU), voluntary action, grants or incentive programs.

The goals set forth in the CAAP include:

- Health Risk Reduction Standard: 85% reduction in population-weighted cancer risk by 2020
- Emission Reduction Standards:
 - By 2014, reduce emissions by 72% for DPM, 22% for NO_x, and 93% for SO_x
 - By 2023, reduce emissions by 77% for DPM, 59% for NO_x, and 93% for SO_x

In addition to the CAAP, the Ports have completed annual inventories of port-related sources since 2005. These inventories have been completed in conjunction with a technical working group composed of the SCAQMD, CARB, and U.S. EPA. Based on the latest inventories, it is estimated that the emissions from port-related sources will meet the 2012 AQMP emission targets necessary for meeting the 24-hr PM_{2.5} ambient air quality standard. The projected emissions from port-related sources are included in the “baseline” emissions assumed in this plan to attain the PM_{2.5} standards.

While many of the emission reduction targets in the CAAP result from implementation of federal and state regulations (either adopted prior to or after the CAAP), some are contingent upon the Ports taking and maintaining actions which are not required by air quality regulations. These actions include the Expanded Vessel Speed Reduction Incentive Program, lower-emission switching locomotives, and incentives for lower emission marine vessels. This AQMP control measure is designed to provide a “backstop” to the Ports’ actions to provide assurance that, if emissions do not continue to meet projections, the Ports will develop and implement plans to get back on track, to the extent that cost effective and feasible strategies are available.

Regulatory History

The CAAP sets out the emission control programs and plans that will help mitigate air quality impacts from port-related sources. The CAAP relies on a combination of regulatory requirements and voluntary control strategies which go beyond U.S. EPA or CARB requirements, or are implemented faster than regulatory rules. The regulations which the CAAP relies on include international, federal and state requirements controlling port-related sources such as marine vessels, harbor craft, cargo handling equipment, locomotives, and trucks.

The International Maritime Organization (IMO) MARPOL Annex VI, which came into force in May 2005, set new international NO_x emission limits on Category 3 (>30 liters per cylinder displacement) marine engines installed on new vessels retroactive to the year 2000. In October 2008, the IMO adopted an amendment which places a global limit on marine fuel sulfur content of 0.1 percent by 2015 for specific areas known as Emission Control Areas (ECA). The South Coast District waters of the California coast are included in an ECA and ships calling at the Port of Los Angeles and Long Beach have to meet this new fuel standard. In addition, the 2008 IMO amendment required new ships built after January 1, 2016 which

will be used in an Emission Control Area (ECA) to meet a Tier III NO_x emission standard which is 80 percent lower than the original emission standard.

To reduce emissions from switch and line-haul locomotives, the U.S. EPA in 2008 established a series of increasingly strict emission standards for new or remanufactured locomotive engines. The emission standards are implemented by “Tier” with Tier 0 as the least stringent and Tier 4 being the most stringent. U.S. EPA also established remanufacture standards for both line haul and switch engines. For Tiers 0, 1, and 2, the remanufacture standards are more stringent than the new manufacture standards for those engines for some pollutants.

To reduce emissions from on-road, heavy-duty diesel trucks, U.S. EPA established a series of cleaner emission standards for new engines, starting in 1988. The U.S. EPA promulgated the final and cleanest standards with the 2007 Heavy-Duty Highway Rule. Starting with model year 2010, all new heavy-duty trucks have to meet the final emission standards specified in the rule.

On December 8, 2005, CARB approved the Regulation for Mobile Cargo-Handling Equipment (CHE) at Ports and Intermodal Rail Yards (Title 13, CCR, Section 2479), which is designed to use best available control technology (BACT) to reduce diesel PM and NO_x emissions from mobile cargo-handling equipment at ports and intermodal rail yards. The regulation became effective December 31, 2006. Since January 1, 2007, the regulation imposes emission performance standards on new and in-use terminal equipment that vary by equipment type.

In 1998, the railroads and CARB entered into an MOU to accelerate the introduction of Tier 2 locomotives into the SCAB. The MOU includes provisions for a fleet average in the SCAB, equivalent to U.S. EPA's Tier 2 locomotive standard by 2010. The MOU addressed NO_x emissions from locomotives. Under the MOU, NO_x levels from locomotives are reduced by 67 percent.

On June 30, 2005, Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railroad (BNSF) entered into a Statewide Rail Yard Agreement to Reduce Diesel PM at California Rail Yards with the CARB. The railroads committed to implementing certain actions from rail operations throughout the state. In addition, the railroads prepared equipment inventories and conducted dispersion modeling for diesel PM.

In December 2007, CARB adopted a regulation which applies to heavy-duty diesel trucks operating at California ports and intermodal rail yards. This regulation eventually will require all drayage trucks to meet 2007 on-road emission standards by 2014.

Areas where the CAAP went beyond existing regulatory requirements or accelerated the implementation of current IMO, U.S. EPA, or CARB rules include emissions reductions from ocean-going vessels through lowering vessel speeds, accelerating the introduction of 2007/2010 on-road heavy-duty drayage trucks, maximizing the use of shore-side power for ocean-going vessels while at berth, early use of low-sulfur fuel in ocean-going vessels, and the restriction of high-emitting locomotives on port property. Each of these strategies is highlighted below.

HDVI – Performance Standards for On-Road Heavy-Duty Vehicles (Clean Truck Program)

This control measure requires that all on-road trucks entering the ports comply with the

Clean Truck Program. Several milestones occurred early in the program implementation, but the current requirement bans all trucks not meeting the 2007 on-road heavy-duty truck emission standards from port property. This program has the effect of accelerating the introduction of clean trucks sooner than would have occurred under the state-wide drayage truck regulation framework.

OGVI –Vessel Speed Reduction Program (VSRP): Under this voluntary program, the Port requested that ships coming into the Ports reduce their speed to 12 knots or less within 20nm of the Point Fermin Lighthouse. The program started in May 2001. The Ports expanded the program out to 40 nm from the Point Fermin Lighthouse in 2010.

OGV3/OGV4 – Low Sulfur Fuel for Auxiliary Engines, Auxiliary Boilers and Main Engines: OGV3 reduces emissions for auxiliary engines and auxiliary boilers of OGVs during their approach and departure from the ports, including hoteling, by switching to MGO or MDO with a fuel sulfur content of 0.2 percent or less within 40 nm from Point Fermin. OGV4 Control measure reduces emissions from main engines during their approach and departure from the ports. OGV3 and OVV4 are implemented as terminal leases are renewed.

RL-3 – New and Redeveloped Near-Dock Rail Yards: The Ports have committed to support the goal of accelerating the natural turnover of line-haul locomotive fleet to at least 95 percent Tier 4 by 2020. In addition, this control measure establishes the minimum standard goal that the Class 1 (UP and BNSF) locomotive fleet associated with new and redeveloped near-dock rail yards use 15-minute idle restrictors and ULSD or alternative fuels, and as part of the environmental review process for upcoming rail projects, 40% of line-haul locomotives accessing port property will meet a Tier 3 emission standard and 50% will meet Tier 4.

PROPOSED METHOD OF CONTROL

The goal of this measure is to ensure that NO_x, SO_x and PM_{2.5} emissions reductions from port-related sources are sufficient to attain the 24-hr federal PM_{2.5} ambient air quality standard. This measure would establish targets for NO_x, SO_x, and PM_{2.5} for 2014 that are based on emission reductions resulting from adopted rules and other measures such as railroad MOUs and vessel speed reduction that have been adopted and are being implemented. These emissions from port-related sources are included in the “baseline” emissions assumed in this plan to attain the 24-hour PM_{2.5} standard. Based on current and future emission inventory projections these rules and measures will be sufficient to achieve attainment of the 24-hr federal PM_{2.5} ambient air quality standard. Requirements adopted pursuant to this measure will become effective only if emission levels exceed the above targets. Once triggered, the Ports will be required to develop and implement a plan to reduce emissions from port-related sources to meet the emission targets over a time period. The time period to achieve and maintain emission targets will be established pursuant to procedures and criteria developed during rulemaking and specified in the rule.

This control measure will be implemented through a District rule. Through the rule development process the AQMD staff will establish a working group, hold a series of working group meetings, and hold public workshops. The purpose of the rule development process is to allow the AQMD staff to work with a variety of stakeholders such as the Ports, potentially

affected industries, other agencies, and environmental and community groups. The rule development process will discuss the terms of the proposed backstop rule and, through an iterative public process, develop proposed rule language. In addition, the emissions inventory and targets will be reviewed and may be refined if necessary. This control measure applies to the Port of Los Angeles and the Port of Long Beach, acting through their respective Boards of Harbor Commissioners. The ports may have the option to comply separately or jointly with provisions of the backstop rule.

Elements of Backstop Rule

Summary: This control measure will establish enforceable nonattainment pollutant emission reduction targets for the ports in order to ensure implementation of the 24-hr PM_{2.5} attainment strategy in the 2012 AQMP. The “backstop” rule will go into effect if aggregate emissions from port-related sources exceed specified emissions targets. If emissions do not exceed such targets, the Ports will have no control obligations under this control measure.

Emissions Targets: The emissions inventories projected for the port-related sources in the 2012 AQMP are an integral part of the 24-hr PM_{2.5} attainment demonstration for 2014 and its maintenance of attainment in subsequent years. These emissions serve as emission targets for meeting the 24-hr PM_{2.5} standard.

Scope of Emissions Included: Emissions from all sources associated with each port, including equipment on port property, marine vessels traveling to and from the port while in California Coastal Waters, locomotives and trucks traveling to and from port-owned property while within the South Coast Air Basin. This measure will make use of the Port’s annual emission inventory, either jointly or individually, as the basis for the emission targets. The inventory methodology to estimate these emissions is consistent with the CAAP methodology. Other sources—i.e. sources that are unrelated to the ports—would not in any way be subject to emission reductions under this measure (including through funding of emission reduction measures, or purchase of emission credits, by the ports or port tenants).

Circumstances Causing Backstop Rule Regulatory Requirements to Come Into Effect: The “backstop” requirements will be triggered if the reported aggregate emissions for 2014 for all port-related sources exceed the 2014 emissions targets. The rule may also provide that it will come into effect if the target is met in 2014 but exceeded in a subsequent year. If the target is not exceeded, the Ports would have no obligations under this measure.

Requirements If Backstop Rule Goes Into Effect: If the “backstop” rule goes into effect, the Ports would submit an Emission Control Plan to the District. The plan would include measures sufficient to bring the Ports back into compliance with the 2014 emission targets. The Ports may choose which sources would be subject to additional emission controls, and may choose any number of implementation tools that can achieve the necessary reduction. These may include clean technology funding programs, lease provisions, port tariffs, or incentives/disincentives to implement measures. As described below, the Ports would have no obligation under this measure to implement measures which are not cost-effective and feasible, or where the Ports lack the authority to adopt an implementation mechanism. The District would approve the plan if it met the requirements of the rule.

RULE COMPLIANCE AND TEST METHODS

Compliance with this control measure will depend on the type of control strategy implemented. Compliance will be verified through compliance plans, and enforced through submittal and review of records, reports, and emission inventories. Enforcement provisions will be discussed as part of the rule development process.

COST EFFECTIVENESS AND FEASIBILITY

The cost effectiveness of this measure will be based on the control option selected. A maximum cost-effectiveness threshold will be established for each pollutant during rule development. The rule will not require any additional control strategy to be implemented which exceeds the threshold, or which is not feasible. In addition, the rule would not require any strategy to be implemented if the Ports lack authority to implement such strategy. If sufficient cost-effective and feasible measures with implementation authority are not available to achieve the emissions targets by the applicable date, the District will issue an extension of time to achieve the target. It is the District's intent that during such extension, the Ports and regulatory agencies would work collaboratively to develop technologies and implementation mechanisms to achieve the target at the earliest date feasible.

IMPLEMENTING AGENCY

The District has authority to adopt regulations to reduce or mitigate emissions from indirect sources, i.e. facilities such as ports that attract on- and off-road mobile sources, and has certain authorities to control emissions from off-road mobile sources themselves. These authorities include the following:

Indirect Source Controls. State law provides the District authority to adopt rules to control emissions from "indirect sources." The Clean Air Act defines an indirect source as a "facility, building, structure, installation, real property, road or highway which attracts, or may attract, mobile sources of pollution." 42 U.S.C. § 7410(a)(5)(C); CAA § 110(a)(5)(C). Districts are authorized to adopt rules to "reduce or mitigate emissions from indirect sources" of pollution. (Health & Safety Code § 40716(a)(1)). The South Coast District is also required to adopt indirect source rules for areas where there are "high-level, localized concentrations of pollutants or with respect to any new source that will have a significant impact on air quality in the South Coast Air Basin." (Health & Safety Code § 40440(b)(3)). The federal Court of Appeals has held that an indirect source rule is not a preempted "emission standard." *National Association of Home Builders v. San Joaquin Valley Unified Air Pollution Control District*, 627 F.3d. 730 (9th Cir. 2010)

Nonvehicular (Off-Road) Source Emissions Standards. Under California law "local and regional authorities," including the Ports and the District, have primary responsibility for the control of air pollution from all sources other than motor vehicles. (Health & Safety Code § 40000). Such "nonvehicular" sources include marine vessels, locomotives and other non-road equipment. CARB has concurrent authority under state law to regulate these sources. The federal Clean Air Act preempts states and local governments from adopting emission standards and other requirements for new locomotives (Clean Air Act § 209(e); 42 U.S.C. § 7543(e)),

but California may establish and enforce standards for other non-road sources upon receiving authorization from EPA (*Id.*). No such federal authorization is required for state or local fuel, operational, or mass emission limits for marine vessels, locomotives or other non-road equipment. (40 CFR Pt. 89, Subpt. A, App.A; *Engine Manufacturers Assn. v. Environmental Protection Agency*, 88 F.3d. 1075 (DC Cir. 1996)).

Fuel Sulfur Limits. With respect to non-road engines, including marine vessels and locomotives, the District and CARB have concurrent authority to establish fuel limits, such as those on sulfur content. As was noted above, fuel regulations for non-road equipment are not preempted by the Clean Air Act and do not require U.S. EPA authorization.

Operational Limits. The District has authority under state law to establish operational limits for nonvehicular sources such as marine vessels, locomotives, and cargo handling equipment (to the extent cargo handling equipment is “nonvehicular”). As was discussed above, operational limits for non-road equipment are not preempted by the Clean Air Act. In addition, the District may adopt operational limits for motor vehicles such as indirect source controls and transportation controls without receiving an authorization or waiver from U.S. EPA.

REFERENCES

San Pedro Bay Ports Clean Air Action Plan, 2010 Update, October 2010

Southern California International Gateway Project Draft Environmental Impact Report, Port of Los Angeles, September 2011

SCAQMD, 2007 Air Quality Management Plan, Appendix IV-A, June 2007