PMSA
PACIFIC MERCHANT SHIPPING ASSOCIATION

February 28, 2018

Cynthia Marvin, Division Chief
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California Air Resources Board
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Re: Advanced Materials "Update on Concepts to Minimize the Community Health Impacts from Large Freight Facilities"

Dear Ms. Marvin:

On behalf of the members of the Pacific Merchant Shipping Association (PMSA), we are pleased to submit these comments regarding the Advanced Materials released for discussion at February 2018 Public Meetings entitled "Update on Concepts to Minimize the Community Health Impacts from Large Freight Facilities." Specifically, PMSA has serious concerns regarding the "Cargo Handling Equipment Regulation Amendments" (CHE) Concept as described, and would respectfully propose an Alternative Concept.

The staff Concept would amend our existing BACT regulations for CHE – which have been tremendously successful at reducing significant emissions in a cost-effective manner – and replace them with unknown rules, uncertain technology, and unrealistic initial timelines at a cost of untold billions of dollars with high prospects for non-cost-effective outcomes. In addition, these CHE Amendments could realistically produce only marginal improvements in air quality in the short-term when compared to existing DPM reductions, with little demonstrated likelihood of improvements in public health or community impacts, negligible improvements in state GHGs, and no significant contribution towards Clean Air Act attainment in impacted regions of the state.

Instead, PMSA proposes that CARB embrace a transition to Zero-Emissions CHE as soon as economically and technologically feasible and in a manner which utilizes current mature technology, and which can be accelerated by the state if the state commits public funding and financing to that end. PMSA's Alternative Concept (attached) achieves the CHE "win-win" consistent with the goals embraced by Governor Brown's Executive Order B-32-15 and the Sustainable Freight Action Plan, by planning for investments in Zero-Emissions (ZE) technology and infrastructure to complement improvements in economic competitiveness and supply chain efficiency. The Alternative Concept is consistent with the CARB 2017 Climate Change Scoping Plan Update, the CARB Mobile Source Strategy, and the State Implementation Plan.

At this formative point in time it is imperative to avoid primarily wedding ourselves to a regulatory path which may frustrate the policies, actions, and port investment in new technology, equipment and infrastructure necessary to achieve our goals. Likewise, the existing proposal timelines of 2022-2031 are not realistic for a regulatory enactment given the challenges of technology development, infrastructure improvement, planning and permitting, environmental clearance, equipment availability, total costs of compliance, and financial feasibility. In addition, with uncertainty continuing to surround present and potential future legislative restrictions on the utilization of incentives for deployment of the only existing, mature, automatable zero-emissions CHE technology, the proposed timetables cannot be supplemented with additional action on surplus emissions. In short, proceeding with the regulatory approach detailed in the Concept, with timelines which are seemingly arbitrary at best and infeasible at worst, will not improve the funding and financing needed for a transition to ZE.

Emissions from Cargo Handling Equipment at seaports and intermodal rail yards are already controlled, and significantly reduced, under existing CARB regulation which establishes Best Available Control Technology for new and in-use CHE. The "Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards" (13 CCR §2479) is applicable to all diesel-fueled equipment used at a California port or intermodal rail yard to lift or move containers, bulk or liquid cargo, or to perform routine or predictable maintenance and repair activities. Equipment that handles cargo containers includes yard trucks, top handlers, side handlers, reach stackers, forklifts, and rubber-tired gantry (RTG) cranes. Equipment that is used to handle bulk cargo includes dozers, excavators, loaders, and railcar movers. Forklifts, aerial lifts, and other types of equipment used in maintenance operations at ports and intermodal rail yards are also considered CHE for the purposes of this regulation.

PMSA supported the adoption of the current CHE regulation when it was enacted. Industry agreed that a BACT rule which was fleet-based, relied on the development of new engine technology and standards, could be phased in incrementally over time, and respected investments by avoiding unnecessary stranded costs, would produce the best results in a cost-effective manner.

PMSA would caution against amending the current rule to pursue a Concept which, at this point in time, can promise none of these outcomes or conditions. In short, the transition to ZE CHE will be much more complex, expensive, and infrastructure-dependent than the BACT fleet roll-over compliance model which has worked so well to produce the existing significant CHE improvements.

This means that a successful transition to ZE will not be a simple new set of BACT amendments. Instead, this transition will require coordinated planning for investments

in both new equipment and infrastructure to support this equipment. In addition, the current staff proposed Concept impliedly places the onus for technology development on the user, not the OEM. This would upend decades of successful regulation to reduce emissions which focused on new engine standards to be implemented by OEMs and in-use standards, when necessary, to accelerate the turnover to equipment using the newest technology. The proposed approach would inappropriately absolve OEMs of the responsibility of conducting technology development across all off-road equipment and will potentially force equipment users to rely on under-capitalized technology ventures that have no experience delivering robust equipment solutions.

Under the current BACT rule for intermodal CHE, emissions reductions have been significant, fast, and lasting. The latest Port of Los Angeles 2016 Air Quality Report Card shows that when compared to 2005, CHE emissions reductions are as follows:

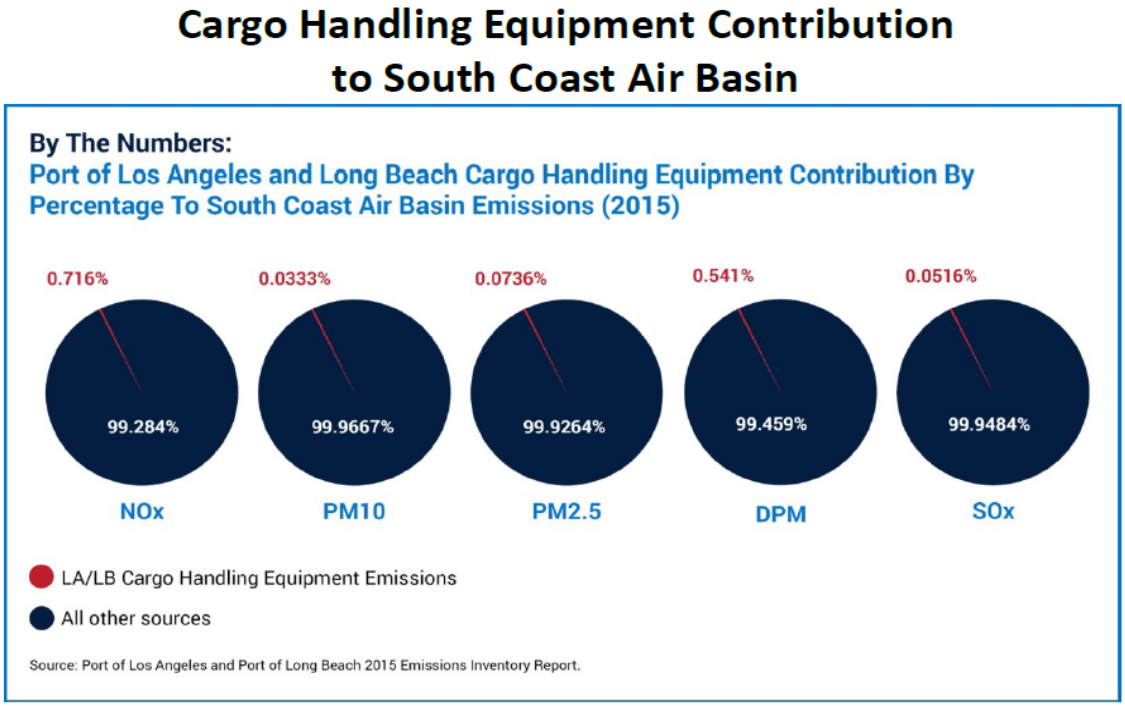
CARGO HANDLING EQUIPMENT EMISSIONS REDUCTION

Pollutant	CY 2005-2016 %	tons
DPM	91%	48
$PM_{2.5}$	88%	43
PM_{10}	88%	47
NO_x	72%	1,139
SO_x	82%	8

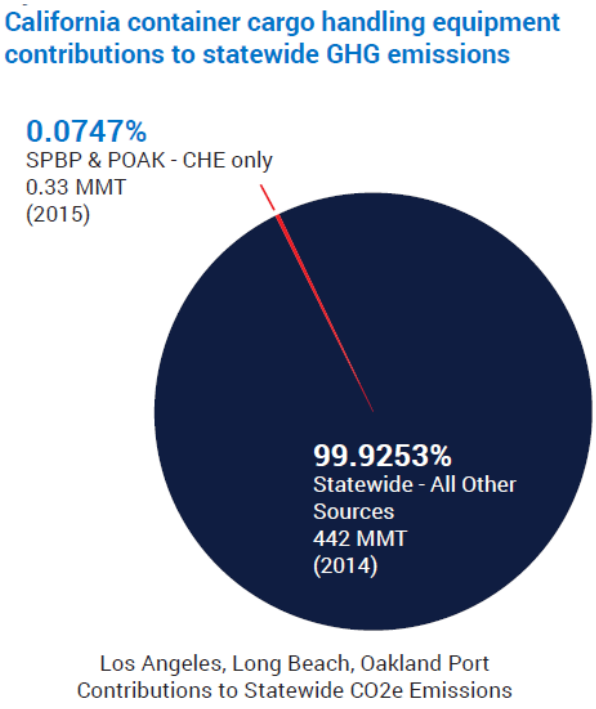
These reductions are significant both with respect to improving localized community and public health impacts of air toxics (Diesel PM reductions of 91%) and with respect to regional criteria pollutants (NOx down 72% and SOx down 82%).

Ports, the maritime industry, and our supply chain partners operating at California's seaports have made tremendous investments to achieve results such as these at ports up and down the California coast and we are proud of the emissions reductions that we have been able to achieve through investments, incentives, and regulatory compliance.

After these reductions, the combined CHE emissions from the Ports of Los Angeles and Long Beach – the largest port complex in the country - are now marginal contributors to criteria pollutants in the South Coast Air Basin:



Likewise, when all major container Ports (LA, LB and Oakland) have their cumulative intermodal CHE emissions compared to statewide GHG totals, their contributions are also minimal:



The billions of dollars in costs of transition to Zero-Emissions CHE in new equipment and supporting infrastructure are substantial when compared to the incremental benefits to be achieved. The investments necessary to move to Zero-Emissions are substantial and will require payback periods over decades. **High costs do not necessarily mean that ZE investments should not be made, rather, high costs make it imperative for ZE investments to be made well.**

The only comprehensive study of the costs of transitioning California's ports to a CHE Zero-Emissions operating environment was conducted by the engineering firm of Moffat & Nichol at the request of PMSA in 2015. CARB staff was briefed on the findings of this study and its methodology in 2016 during the development of the Sustainable Freight Action Plan.

The Moffat & Nichol study found that by using mature, available technologies (such as those currently in operation at LBCT in the Port of Long Beach and at TraPac in the Port of Los Angeles), that the total costs associated with a transition to ZE over 3 decades to be approximately $49 billion (Capital Expenses totaling an additional $28 billion and total increased Operating Expenses reaching an additional $21 billion):

Table 2: Equipment Modes and OPEX Costs

Equipment Mode	OPEX (Labor, Energy & Maintenance Costs)	OPEX/TEU Annual Capacity
Conventional	$239 billion	$9,700
All Electric eRTG	$284 billion	$10,400
All Electric High-Density	$260 billion	$7,100

Total capital and operating expenditures for the three study equipment operating modes for the 30 year planning horizon with respect to their respective throughput capacities is summarized in the table below.

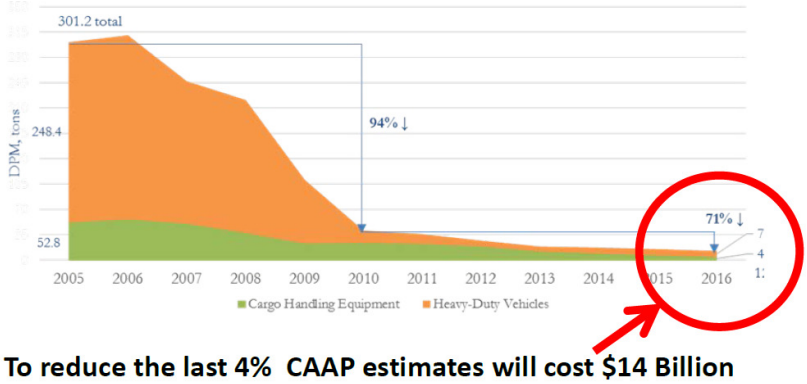
Total CAPEX and OPEX Costs (2015-2045)			
	Conventional	eRTG	Elec. High-Density
CAPEX	$7 Billion	$23 Billion	$35 Billion
OPEX	$239 Billion	$284 Billion	$260 Billion
Capacity (TEU/yr)	24,563,000	27,155,000	36,802,000
CAPEX and OPEX per Capacity ($/TEU/yr)	$10,000	$11,300	$8,000

Utilizing alternative technologies could be even more costly to the industry. Using a more conventional operating model than that embraced by the newest terminals in San Pedro Bay, the study identified a transition to ZE that would cost approximately $61 billion (Capital Expenses totaling an additional $16 billion and total increased Operating Expenses reaching an additional $45 billion). Moreover, total marine terminal costs would increase markedly by some 13% per unit.

The study highlights the tremendous infrastructure and equipment cost variables, operating cost impacts, and potential efficiency improvements or opportunities missed which will affect the multiple possible successful transition paths to Zero Emission operations for CHE at Ports for decades. At this stage in time, and without further study, a regulatory path should not be relied on as a principle pathway to facilitating the types of investments necessary. Instead, all possible options (including future regulatory amendments) should remain on the table, and extensive planning should commence to assist the ports and industry with compliance and infrastructure development options and timelines on how to move forward.

The scale of the capital investments identified in the Moffat & Nichol study was confirmed the Ports of LA and Long Beach 2017 Clean Air Action Plan Update, which included a preliminary estimate of potential capital costs of transitioning both intermodal port CHE and drayage trucks to a Zero-Emission environment by 2030-2035. This estimate required analysis of costs, prices, performance, and availability of equipment that does not yet exist, cannot but roughly delineate the potential for additional infrastructure to support the equipment, and did not include an evaluation of additional future operating expenses. The ports' Update estimate was also only for one lifecycle of equipment investments (between now and 2030) as opposed to the expanded Moffat & Nichol planning horizon of 2015-2045 and presumes a one-for-one equipment replacement ratio (which is also not supported by any currently available technology). Nevertheless, the CAAP Update estimate for the transition to ZE for CHE and drayage trucks would still be approximately $14 billion at those two ports alone.

96% DPM reductions for Heavy Duty Trucks and Cargo Handling Equipment



To reduce the last 4% CAAP estimates will cost $14 Billion

Since the current CHE regulation has been effective and in place, AB 32, SB 32, AB 197, and Executive Orders B-30-15 and B-32-15 have all been passed, enacted, and implemented, and none have imposed, directed, identified or suggested any amendments to intermodal CHE rules. As adopted and detailed through the 2020 and 2030, the GHG emissions targets set statewide and as planned to be implemented through CARB's Climate Change Scoping Plans, including the 2017 Update, do not propose any additional direction regarding intermodal CHE. Likewise, freight-specific plans including the CARB Mobile Source Strategy, SIP Strategy, AQMP, and Sustainable Freight Action Plan do not set specific short-term goals for ports or intermodal CHE with respect to transition to Zero-Emissions. Therefore, as neither CARB nor the Legislature has ever identified CHE as a high-priority short-term target for additional regulation beyond BACT, it would be inconsistent with those policies to do so now.

Similarly, as confirmed in the CARB Discussion Paper of September 6, 2017 (regarding Implementation of March 2017 Board Direction), Board Resolution Addenda 17-7 and 17-8 did not establish new CARB policy, did not establish new enforceable requirements in the SIP, and are not a basis for action by CARB staff, other than to perform the near-term evaluation and study of the potential for additional priorities beyond the SIP which are now described in the current Concept.

Introduction of costly regulations too fast or too soon at seaports, which results in further loss of marketshare and diversion of cargo to other North American gateways, will also result in increased emissions of GHGs and erode the cost-effectiveness of current investments in clean technology in California. The only comprehensive study of the potential GHG leakage effects of California's ports loss of business, cargo volumes, and marketshare to other competitors was completed by Starcrest at the request of PMSA in 2017. CARB staff was consulted on study methodology during its development and has been presented with the final results. Starcrest found that, on average, cargo diversion away from the West Coast resulted in an average increase in GHGs of 22% across multiple vessel size, port call, destination, and origination scenarios.

As we committed during the development of the Sustainable Freight Action Plan, PMSA believes that the state must find the most cost-effective and economically competitive path forward to investment in our ports in order to achieve the successful transition to zero-emissions port operations. We respectfully submit the Alternative Concept here as the basis for development of a comprehensive, realistic, and sustainable path towards a "win-win" on the introduction of zero-emissions CHE.

Please do not hesitate to contact me or Thomas Jelenic in our Long Beach office with any questions, comments or concerns regarding this or any other matter.

Sincerely,

Mike Jacob
Vice President & General Counsel

enclosure

Alternative Concept for Cargo Handling Equipment at Seaports and Rail Yards

CARB Action: Cargo Handling Equipment Transition to Zero-Emission Planning

Timeframe for Board consideration: 2021-2023

Description of Approach: Develop plans to transition Cargo Handling Equipment at Seaports and Rail Yards to zero-emission operation. Goals for transition to zero-emission would be to maximize investment in, and utilization of, all operationally feasible zero-emission technology at seaports and rail yards while also achieving improvements in marine terminal efficiency and port economic competitiveness. Staff to assess the availability and performance of all zero-emission technology as an alternative to all combustion-powered cargo equipment, the financial feasibility of the utilization of all zero-emission technology, the infrastructure necessary to support all zero-emission technology, and to propose a plan for the potential use of incentives, regulations (rule amendments and/or development of new rules), subsidies or other tools necessary to facilitate the transition. CARB staff will promulgate a plan consistent with the CARB 2017 Climate Change Scoping Plan Update for reduction of greenhouse gases, the Sustainable Freight Action Plan, and the Mobile Source SIP Strategy. CARB staff would also consider the opportunities to prioritize the earliest implementation in or adjacent to the communities most impacted by air pollution. CARB's existing Cargo Handling Equipment regulation sets Best Available Control Technology in-use requirements for diesel cargo handling equipment at ports and rail yards, including but not limited to: yard trucks, hostlers, rubber-tired gantry cranes, container handlers, and forklifts. In this potential action, including amendments to the current regulation and any other proposal, all equipment at ports and rail yards would be subject to staff assessment of transition to zero-emission technology, including but not limited to: diesel, gasoline, natural gas, and propane-fueled equipment.

Potential Impacts: The transition to ZE CHE at ports will require substantial amounts of public and private investment in infrastructure and equipment prior to, during, and for several decades post plan implementation, totaling tens of billions of dollars. CARB must specifically study and plan for this transition, which could potentially achieve emission reductions of criteria pollutants, air toxics, and greenhouse gases upon implementation of transition to zero-emission operations, to be done successfully. Greenhouse gas emissions reductions goals would be set consistent with Executive Order B-30-15 in order to achieve levels 80% below 1990 levels by 2050. These reductions would provide progress towards greenhouse gas targets, contributions to fulfillment of State Implementation Plan commitments to attain federal air quality standards, and potential benefits to reduce community health risk.