



December 2, 2019

Angela Csondes  
Manager, Marine Strategies Section  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812-2815  
Submitted Via Electronic Comment Log

**Subject: Comments on October 15, 2019, Draft Proposed Control Measure for Ocean-Going Vessels At Berth and Supporting Documents**

Dear Ms. Csondes:

The Port of Oakland (“Port”) appreciates the opportunity to comment on the rulemaking materials posted October 15, 2019, for the Proposed Control Measure for Ocean-Going Vessels At Berth (“Proposed Control Measure”). The Port understands that the California Air Resources Board (“CARB”) plans to replace the current Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port (the current “At-Berth Regulation”) with the Proposed Control Measure, with the goal of taking the Proposed Control Measure to the CARB Governing Board on December 5, 2019 at a special meeting to be held in West Oakland. The Port understands that the CARB Governing Board will not vote on the Proposed Control Measure on December 5, 2019, and that comments are due December 9, 2019.

The Port fully supports CARB’s efforts to reduce emissions from ocean-going vessels at berth and is working diligently to maximize the number of vessel visits using shore power. Port staff work collaboratively with shipping lines to provide education and resources about the shore power program. Port staff track shore power usage in real time, collecting detailed information from marine terminal operators. The Port regularly posts up-to-date shore power usage statistics, reasons for vessels not plugging in, and cost information on the Port’s shore power website: <https://www.oaklandseaport.com/development-programs/shore-power/>.

In 2018, 75% of all vessel calls at the Port of Oakland drew shore power (the number for all vessel calls includes steamships and “infrequent callers” which are both exempt from the current At-Berth Regulation), which surpassed the regulatory requirement of 70% compliance. The plug-in rates at the Port of Oakland continue to increase. For example, in October 2019, 100% of vessels

that were equipped with shore power plugged in and 83% of all vessel calls plugged in. This was the third time in 2019 and the second consecutive month where shore power plug-in rates were above 80%. For 2019, the year-to-date average, including October 2019, was 76%.

The Port has commented on previous drafts of the Proposed Control Measure and various supporting documents, and those previous comment letters are enclosed with this comment letter. The Port appreciates CARB's consideration of its past comments and sets forth its new and continuing comments and concerns below.

### **Comments on Emissions Inventory**

The Port has reviewed Appendix H: 2019 Update to Inventory for Ocean-Going Vessels at Berth: Methodology and Results. This inventory is extremely important, as it lays the foundation for the need for, and cost-effectiveness of, the Proposed Control Measure.

The Port appreciates all the hard work that went into the inventory, and the willingness of CARB staff to attempt to explain their methodology. At the same time, Port staff (along with other public seaport authorities and shipping partners that operate in the State) have struggled to understand the inventory results and implications for both Oakland and the State as a whole. Based on the collective feedback that has been received from stakeholders, CARB staff continues to revisit the baseline and forecasted emissions assumptions with updated calculations and results even as this Proposed Control Measure is being put before the CARB Governing Board. In other words, the methodology and analysis upon which the Proposed Control Measure is based, are still in flux.

To highlight just one particularly notable example, the 2020 estimated total hours at berth divided by typical call durations by vessel size indicate that there will be 2,580 calls for the Port of Oakland in 2020, which is a dramatic departure and increase (a deviation of over 40%) from observed operational realities and shipping trends. For context, the Port of Oakland had 1,175 calls in the first 10 months of 2019, 1,543 calls in 2018, and 1,598 calls in 2017. The same calculation applied to CARB values for the Ports of Los Angeles and Long Beach predicts 2,405 calls in 2020, which means Oakland would see 175 more calls than the Ports of Los Angeles and Long Beach combined. Such an order of magnitude difference has implications for evaluating the effectiveness and potential impact of the Proposed Control Measure and any marginal benefits that could be achieved by it.

Port staff compared the 2016 baseline values used by CARB in the inventory to 2016 actual values recorded at the Port. It appears that CARB's 2016 values for total time at berth are about 8% higher than actual, and that CARB's estimates for average power by ship size (which were derived from values at the ports of Los Angeles and Long Beach) are about 9% higher than actual for Oakland. Additionally, it seems that CARB has underestimated the total activity for the regulated fleet in 2016 by about 11%, which makes it appear that the Proposed Control Measure overestimates projected reductions. These over- and under-estimates do not balance out. In fact, they lead to further discrepancies which are compounded by CARB's assumed 21.5% growth rate which is applied equally across all vessel size bins. The Port understands that this growth rate was

developed from the Federal Highway Administration’s Freight Analysis Framework and requests that CARB explain how this growth rate applies to hours at berth, cargo volumes, emissions, ship calls, and cost.

The Port appreciates CARB staff’s recent acknowledgment that the cargo growth rate for Oakland needs to be adjusted. Port staff and CARB staff have had multiple discussions about the growth rate issue, and the Port understands that CARB will consider instead the Oakland-specific cargo forecast commissioned by the Bay Conservation and Development Commission (“BCDC”)<sup>1</sup>. This will lower the forecasted annual growth rate for Oakland from ~4.6% to a more realistic, but still high, forecast of 2.2%. For reference, the Port’s historical compounded annual growth rate from fiscal year 2008 to fiscal year 2018 was 0.4%.<sup>2</sup>

We look forward to evaluating the results and implications of these revised forecasts when the technical work is presented at a future date by CARB staff. The Port seeks assurance that no CARB vote will proceed until the emission reduction estimates reflect more realistic growth rates, for example as provided in the BCDC report.

The Port appreciates CARB staff’s willingness to apply an “efficiency factor” that acknowledges efficiency gains produced by moving more cargo on fewer, larger ships. One point of caution is that the layering of percentages makes it extremely difficult to follow the logic and relate CARB’s forecasted activity and emissions to any real-world metrics. Small errors and invalid assumptions with an initial set of data points can be magnified as these results are extrapolated into later forecast years, which lead to unrealistic and unreliable conclusions. The Port understands the complexity of the task, but a regulation as important and expensive as the one being proposed needs to be based on data that can be fact-checked, and must include forecasts that are grounded in factual operational data.

As an alternative, the Port of Oakland prefers and requests that CARB re-evaluate the inventory using 2016 baseline values provided by the Port and a Port-specific growth forecast. The Port further requests that the forecast activity levels be related to ship calls, which can be readily understood by all ports, regulatory agency staff as well as by the public. This would be consistent with how the Port tracks shore power usage and compliance. Lastly, and most importantly, the Port asks that these changes be made and the inventory fully peer-reviewed before the CARB Governing Board contemplates further action on the Proposed Control Measure.

### **Broad Concerns about the Proposed Control Measure**

The Port is extremely concerned that the Proposed Control Measure adds a substantial additional regulatory burden and cost to carriers and terminals that are already achieving high levels of plug-ins and emissions reductions. As the Port has discussed with CARB previously along with other California seaports, CARB could achieve more cost-effective emissions reductions from other source categories. In fact, during a conference call with CARB staff on Friday, November 22,

---

<sup>1</sup> BCDC is currently amending its Seaport Plan for the San Francisco Bay Area.

<sup>2</sup> From Budget and Finance report at May 23, 2019 Port Board Meeting (File ID 098-19), slide 6.

2019, the Port joined its sister ports in proposing potentially preferred emissions reductions project alternatives based upon readily available specific equipment replacements, which will result in a significant reduction of emissions.

A second broad concern is that the Port of Oakland would be disadvantaged under the Proposed Control Measure because it does not have the option of a CARB approved emission control strategy (“CAECS”) other than shore power. As CARB itself found, the Port of Oakland cannot use a barge-based capture and control (“C+C”) method at three of its four terminals “due to concerns expressed from SF Bar Pilots about wave interaction from passing vessels and channel space and navigational constraints.” (See Appendix E: *Berth Analysis*.) The three terminals cited in CARB’s Appendix E (Everport, Matson, and OICT) account for over 83% of the Port’s call volume.

To elaborate, the potential negative impact to the Port and its carriers, tenants, and the community from the Proposed Control Measure is foreseeable. It is well established that almost every vessel calling Oakland also calls the ports of Los Angeles and Long Beach. Unlike Oakland, the ports of Los Angeles and Long Beach can use a barge-based C+C strategy. What will happen if carriers rely on a barge for compliance at the ports of Los Angeles and Long Beach, and then come to Oakland where a barge is not possible? The Port is very concerned that carriers may bypass Oakland if the Proposed Control Measure is enacted as currently written. Oakland has no feasible C+C alternative<sup>3</sup>, which could put the Port of Oakland at a serious competitive disadvantage.

To address the fact that a barge-based C+C will not work in Oakland, the Port requests that CARB grant Oakland exemptions corresponding to the number of calls that rely on barge-based C+C in Southern California.

As a third concern, the Port understands that the Proposed Control Measure anticipates other emission control strategies such as a land-based C+C system. However, the Port is concerned that landside emissions control approaches were never contemplated for use in the container fleets, have not been analyzed by CARB staff for use in the container shipping trades, and by CARB’s own analysis can result in an increase in greenhouse gas emissions<sup>4</sup>, which would seem to be an unacceptable outcome given the purpose and intent of this rulemaking.

The Port’s fourth concern is the introduction of shared responsibility which potentially creates conflict among vessels, terminals, and ports (see Table 5 of Proposed Control Measure) where none now exists. Upon the adoption of the initial At-Berth Regulation, CARB rightly acknowledged that in a global shipping environment it was not reasonable to expect that every vessel in every fleet would be equipped to receive shore power, hence the creation of fleet compliance averages and an exemption for infrequent callers. The Port has seen that its diligent involvement with carriers and terminals has resulted in a continuous positive trajectory in shore power usage.

---

<sup>3</sup> Appendix E of the ISOR, page 12

<sup>4</sup> Appendix C-1 of the SRIA, page 15

The Proposed Control Measure continues the acknowledgement that there will be instances when ships cannot plug in, due to circumstances on the vessel or at the terminal, hence the inclusion of alternative compliance options and a complex regime of Terminal Incident Events (“TIEs”) and Vessel Incident Events (“VIEs”). The Port understands the goal of the TIE and VIE regime, but it creates more problems such as record-keeping and dispute resolution, than it solves. The Proposed Control Measure has no clear grievance or dispute resolution process when conflicts arise

### **Specific Comments on Proposed Control Measure**

1. Regarding the Terminal and Port Plans required for Container terminals in Section 93130.14, the deadline of July 1, 2021 is confusing because the Compliance Start Date listed in Section 93130.7(b) is shown as January 1, 2021. Shouldn’t the Plans and associated 90-day review window be completed prior to requiring compliance?

Port staff object to the text in Section 93130.14(a) that “[a]s an alternative, Ports may submit plans for their terminal operators.” Ports should not be expected to submit plans for terminal operators. In addition, the statement in Section 93130.14(b)(1) that “Ports should use terminal plans as [the] basis for developing port plans” seems to indicate that the deadline for Port Plans should be adjusted to come after the deadline for Terminal Plans.

2. The definition of “Fleet” in Section 93130.2(b)(29) does not explain how fleets will be established. What will CARB require at the beginning of each compliance year to establish fleets? How will this work?

The proposed regulation does not address how or whether VIEs will be granted for new fleets entering the California market, or for fleets that expand. New entrants should be allowed to estimate their annual ship calls and be granted the associated number of VIEs for the coming year. Otherwise, this is a barrier to entry for new fleets because they will be granted zero VIEs in their very first year of operation. This puts California ports at a competitive disadvantage compared to ports in Oregon, Washington, Canada, Mexico, and on the U.S. Gulf and East Coast.

The definition of Fleet and the requirements for VIEs also need to be responsive to changes in the shipping industry, for example when businesses merge or alliances change. It is not clear whether VIEs will be granted on a port-specific or State-wide basis. It is also not clear how disagreements will be resolved on whether a specific instance should use a TIE or a VIE. Will CARB adjudicate these?

3. The Port is glad to see that Vessel Commissioning is specifically exempt from the rule, as listed in visit exception Section 93130.8(c). However, the Port notes that it should not be limited to only the first visit, and should not matter whether the commissioning was successful. What happens if the commissioning was not successful? The Port of Oakland requires that vessels be re-commissioned if they have not been in Oakland for over a year. Further, the same vessel might need commissioning on both port side and starboard side. For these reasons, the same ship might require multiple commissioning trips.

Port staff request that vessel commissioning events that do not successfully connect to shore power as discussed in Section 93130.8(c) be eligible for exceptions under the regulation without the use of a VIE. The commissioning attempt shows that the goal was to reduce emissions through shore power and as such should be an exception in this situation. Port staff conduct each vessel commissioning (with the exception of those at Berths 61-6<sup>5</sup> to ensure the safety of the vessel, terminal, and workforce. Vessel commissioning is an invaluable safety procedure and should not be penalized under the Proposed Control Measure.

The Port requests that the definition of “Vessel Commissioning” in Section 93130.2(b)(76) of the Proposed Control Measure be expanded to include the port authority as the commissioning agent, as is the case at the Port of Oakland. The same language is found in Section 93130.7(e)(2) (“Ensure the vessel is commissioned as required by terminal operator”), Section 93130.8(c)(2) (“The terminal requires that the vessel be recommissioned”), and Section 93130.9(a)(2) “The terminal operator is responsible for commissioning vessels equipped with shore power.”). The commissioning requirement should be determined by the port authority or the terminal operator.

4. The Port requests that the definition of “Ready to Work” in Section 93130.2(b)(55) be expanded to include “Auxiliary Marine Power (AMP) container has been loaded on the ship and is in position, if applicable.” This is crucial for the requirement in Section 93130.9(d)(2)(D) that the vessel be plugged in “within 1 hour of vessel “Ready to Work”.” Many of the ships that call at the Port of Oakland rely on an AMP container to connect to shore power. The AMP container is often domiciled at the terminal and needs to be loaded onto the vessel by a ship-to-shore crane prior to plugging in. Some of the major carriers calling in Oakland rely on an AMP container to use shore power [MOL, NYK, K-Line (the ONE Alliance), Hyundai, and APL]. A vessel is not ready to plug in until the AMP container is in position.

Likewise, the Port requests that the disconnection requirement in Section 93130.9(d)(2)(E) be re-written to accommodate certain situations where the AMP container has been removed from the ship prior to the pilot boarding.

5. The Port appreciates the increase in TIEs to 15% for the first four years of the regulation as listed in Table 3 of Section 93130.11. The Port requests that the number of TIEs and VIEs be rounded *up* to the nearest whole number instead of rounding to the nearest whole number for instances where the number of TIEs or VIEs is calculated at a fraction of ship call as stated in Section 9310.11(a)(2). Any fractional call should be counted as a whole call. For example, if a carrier made 49 calls to a California port in 2019, the VIE calculation

---

<sup>5</sup> The Port does not commission vessels at the Matson Terminal because these shore power vaults were installed by the former tenant, APL. The current terminal operator has assumed responsibility for these vaults.

would award 2.45 VIEs at the 5% level. This should be rounded up to three, not down to two.

6. Regarding the Remediation Fund described in Section 93130.15 of the Proposed Control Measure, what is the procedure and timeline for CARB to approve a public entity to manage the funds generated at the Port? What happens if no Remediation Fund administrator is established per Section 93130.15(a)? Does that mean the Remediation Fund would not be an option?
7. Port staff request further information from CARB on when and where the Remediation Fund will be deployed. Given that CARB anticipates zero-emissions regulation on trucks, transport refrigeration units, forklifts, and cargo-handling equipment in the time frame of enhanced usage of the Remediation Fund, would those categories be ineligible for incentive-funded emissions reductions?
8. Port staff note that the power meter readings required in Section 93130.9(d)(2)(C) and (F) and Section 93130.9(d)(3)(I) are not available until the close of each calendar month. This means that it will often not be possible to report the power usage within seven calendar days of a vessel's departure, as required in the Proposed Control Measure.
9. In Section 93130.1 of the Proposed Control Measure, the stated intent of the Proposed Control Measure is "to reduce oxides of nitrogen (NO<sub>x</sub>), reactive organic gases (ROG), particulate matter (PM), diesel particulate matter (DPM), and greenhouse gas (GHG) emissions from ocean-going vessels while docked at berth at California ports." How will CARB monitor GHG emissions after implementation of the Proposed Control Measure? What is the GHG emissions baseline?
10. The Port requests that maintenance events of landside shore power equipment be included in Section 93130.9(f) along with "construction or repair" so that maintenance events also have the option of using a TIE.
11. The Port requests that the Proposed Control Measure include an exemption for liquefied natural gas (LNG) powered vessels. This would have the desired effect of incentivizing cleaner ships, which would provide significant emission reductions throughout the ship's voyage, not just the small fraction of time while the ship is at berth in California.

## **Conclusion**

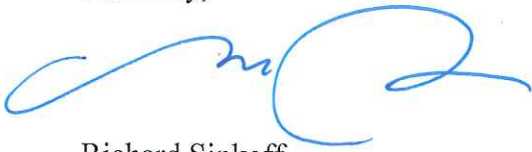
In conclusion, the Port of Oakland is fully committed to reducing emissions, and is proud of the results achieved with its industry and regulatory partners. In fact, the Port is unaware of any other port authority in the world that plugs in as many container vessels on an annual basis as the Port of Oakland. The partnership and collaboration with CARB, the Bay Area Air Quality Management District, and the Port's shipping and marine terminal customers have been a key to the success of

this program. The Port believes that these efforts can be used a model for other states and nations who might seek to reduce localized emission from ships at berth.

Port staff appreciate the opportunity to review and comment on the Proposed Control Measure and attend the public workshop on December 5, 2019. We look forward to continuing to work with CARB towards improving shore power effectiveness, emissions inventories, and associated analyses and to collaborate together to achieve cost-effective and feasible air quality improvements to protect public health.

Please contact Ms. Tracy Fidell, P.E., Port Associate Environmental Planner/Scientist at [tfidell@portoakland.com](mailto:tfidell@portoakland.com) with any follow-up questions.

Sincerely,



Richard Sinkoff  
Director of Environmental Programs and Planning

Enclosures:

- 1) June 10, 2019 Port letter to ARB re: Comments on May 10, 2019, Draft Proposed Control Measure for Ocean-Going Vessels At Berth and Supporting Documents
- 2) February 15, 2019 Port letter to ARB re: Comments on Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor
- 3) January 31, 2019 Port letter to ARB re: Comments on Preliminary Draft Health Risk Assessment (“HRA”) for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor

CC:

Danny Wan, Executive Director  
Michele Heffes, Acting Port Attorney  
Matt Davis, Director of Government Affairs  
Delphine Prevost, Manager Maritime Administration and Finance  
Diane Heinze, Environmental Assessment Supervisor





June 10, 2019

Angela Csondes  
Manager, Marine Strategies Section  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812-2815  
Submitted Via Electronic Comment Log

Subject: Comments on May 10, 2019, Draft Proposed Control Measure for Ocean-Going Vessels At Berth and Supporting Documents

Dear Ms. Csondes:

The Port of Oakland (“Port”) appreciates the opportunity to comment on the rulemaking materials posted May 10, 2019, for the Proposed Control Measure for Ocean-Going Vessels At Berth (“Proposed Control Measure”). The Port understands that the California Air Resources Board (“CARB”) is planning for the Proposed Control Measure to replace the current Airborne Toxic Control Measure (“ATCM”) for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port (the “At-Berth Regulation”), with the goal of taking the Proposed Control Measure to the CARB Governing Board in December 2019. On May 10, 2019, CARB posted the revised text of the Proposed Control Measure, and provided, as supporting documents, the presentation from the May 14 and May 16, 2019 public workshops, Cost Inputs and Assumptions in PDF format, and Cost Estimates in Excel format.

The Port supports CARB’s ongoing efforts to reduce emissions from ocean-going vessels (“OGVs”) at berth and is working diligently to maximize the number of vessel visits using shore power. Port staff work collaboratively with shipping lines to provide education and resources about the shore power program. Port staff also track shore power usage in real time, collecting detailed information from marine terminal operators. The Port posts shore power usage statistics, reasons for equipped vessels not plugging in, and cost information on our shore power website: <https://www.oaklandseaport.com/development-programs/shore-power/>. In 2018, 75% of all calls to the Port drew shore power.

Public comments on the Proposed Control Measure are due to CARB June 10, 2019. Port staff understand CARB will then finalize the regulatory language and prepare an Initial Statement of

Reasons (“ISOR”) to release on October 18, 2019, with public comment on the ISOR closing on December 2, 2019. The CARB Governing Board is scheduled to hear the Proposed Control Measure on December 5, 2019. Do CARB staff intend to respond to public comment on the ISOR? Three days does not leave time for meaningful CARB response to public comment or public review of subsequent changes to the Proposed Control Measure. Port staff suggest a minimum of 14 days for CARB staff to review and respond to public comment, and for the public to review any changes, before the Proposed Control Measure can be heard.

The Proposed Control Measure includes the concept of an Incident Exemption, which is new since CARB published its draft Proposed Control Measure in August 2018. Vessel fleets would be granted Vessel Incident Exemptions (VIEs) and terminals would be granted Terminal Incident Exemptions (TIEs). Starting in 2021 for container ships and terminals, VIEs and TIEs would be granted at levels of 5% of the previous calendar year’s calls. CARB stated at the May 14, 2019, public workshop that the expected plug-in level for the container fleet is 90% in 2021.

Port staff submit the following comments and questions, divided into the topic areas of the draft regulatory text of the Proposed Control Measure, the presentation from the May 14, 2019 and May 16, 2019 public workshops, and the Cost Inputs and Assumptions in PDF format.

### **Comments and Questions on the Draft Regulatory Text of the Proposed Control Measure**

1. Port staff request clarification on the definition of “necessary infrastructure...that will enable a terminal to comply with this Control Measure” in Section 93130.10(b) of the Proposed Control Measure and what, in this context, “subject to verification by [CARB] enforcement staff” means. From Table XI Berth and Terminal Counts, Anticipated Infrastructure Needs, and Unique Vessels of the CARB Cost Inputs and Assumptions in PDF format, it appears that CARB believes that three new shore power vaults “would be installed in response to the Draft Regulation [Proposed Control Measure]...” at the Port. Accordingly Port staff request documentation supporting CARB staff’s berth-by-berth infrastructure analysis and determination that three new shore power vaults would be required at the Port in response to the Proposed Control Measure.
2. Regarding the Terminal and Port Plans required for Container terminals in Section 93130.11 of the Proposed Control Measure, the deadline of June 1, 2020 does not allow for sufficient time after the anticipated adoption of the Proposed Control Measure for ports and terminals to submit plans. Port staff object to the text in Section 93130.11(a) that “[a]s an alternative, Ports may submit plans for their terminal operators.” Ports should not be expected to submit plans for terminal operators. In addition, the statement in Section 93130.10(b) of the Proposed Control Measure that “Ports should use terminal plans as [the] basis for developing port plans” seems to indicate that the deadline for Port Plans should be adjusted to come after the deadline for Terminal Plans.
3. The definition of “Fleet” in Section 93130.2(b)(22) of the Proposed Control Measure does not explain how fleets will be established. What will CARB require at the beginning

of each compliance year to establish fleets? Will this be part of the online Freight Regulations Reporting System (“FRRS”) mentioned in the presentation from the May 14, 2019 and May 16, 2019 public workshops?

Port staff request an initial accommodation for new fleets entering the California market. New entrants should be given an opportunity to estimate the coming year’s ship calls and estimate the number of VIEs to be awarded for the coming year.

The definition of Fleet and the requirements for VIEs also need to be responsive to changes in the shipping industry, for example when businesses merge or alliances change. Likewise, CARB should clarify what provisions will accommodate changes in the terminal industry, such as new terminals or changes in ownership, in the allocation of TIEs.

4. Port staff have two comments regarding vessel commissioning. Port staff request that vessel commissioning events that do not successfully connect to shore power as discussed in Section 93130.7(f)(2) of the Proposed Control Measure be considered eligible for exceptions under the regulation. The commissioning attempt shows that the goal was to reduce emissions through shore power and as such an Exception should be available to operators in this situation. Port staff conduct each vessel commissioning (with the exception of those at the Matson Terminal) to ensure the safety of the vessel, terminal, and workforce. Vessel commissioning is an invaluable safety procedure and should not be penalized under the Proposed Control Measure.

Port staff request that the definition of “Vessel Commissioning” in Section 93130.2(b)(61) of the Proposed Control Measure be expanded to include the case in which the port authority is the commissioning agent, as is the case at the Port of Oakland. Likewise, in Section 93130.7(d)(1) (“If applicable, commission vessel as required by terminal operator”), Section 93130.8(a)(4) (“It is the terminal operator’s responsibility to commission vessels equipped with shore power”), and Section 93130.8(d)(1) (“If applicable, commission vessel for use of shore power”), the commissioning requirement should be determined by the port authority or the terminal operator.

5. The reduction in VIEs and TIEs for Container, Reefer, and Passenger vessels from 5% each to 3% each discussed in Sections 93130.7(g)(1)(A)(ii) and 93130.8(h)(1)(A)(ii) of the Proposed Control Measure serves to increase the usage of the Remediation Fund [Section 93130.12(a)] in and after 2023. Port staff request further information from CARB on when and where the Remediation Fund will be deployed, given that CARB anticipates zero-emissions regulation on trucks, transport refrigeration units, forklifts, and cargo-handling equipment in the time frame of enhanced usage of the Remediation Fund, making those categories ineligible for incentive-funded emissions reductions.

6. The allotted VIEs and TIEs for vessels other than Container, Reefer, and Passenger vessels in Sections 93130.7(g)(1)(A) and 93130.8(h)(1)(A) of the Proposed Control Measure reduce from 5% to 3% after only one year. Port staff note that at the advent of the ATCM, the requirement was 50% of all calls in the first year. An initial expectation of 90% usage does not accommodate the fact that the Proposed Control Measure is the first-of-its-kind requirement for Ro-Ro and Tanker vessels in the world, and the technologies and equipment required do not exist at this time and have not been tested.
7. Regarding the Remediation Fund described in Section 93130.12 of the Proposed Control Measure, what is the procedure and timeline for CARB to approve a public entity to manage the funds generated at the Port?
8. Port staff request clarification from CARB of what constitutes a failure to achieve “full emission reductions” as referenced in Section 93130.12(a)(3) of the Proposed Control Measure, regarding when the Remediation Fund may be used.
9. In response to the suggestion in Section 93130.8(a)(2) of the Proposed Control Measure that a terminal operator should be responsible to interrupt a vessel call to shift the vessel to a berth with shore power if no berth was previously available, Port staff request CARB prepare and share an analysis of harbor craft emissions associated with such a shift at each port. Second to OGV, harbor craft are the second-highest emitting sources of emissions in the Port’s 2017 Emissions Inventory. Given the short duration of the average vessel call to the Port, the suggestion to call additional harbor craft to reduce the remaining hours of an OGV call’s auxiliary emissions could lead to increased overall emissions.
10. Likewise, Port staff question if the suggestion in Section 93130.8(a)(3) of the Proposed Control Measure that a terminal operator should be responsible to provide an alternative CARB-approved emission control strategy if a commissioned shore power vessel is berthed such that it cannot connect to shore power is necessary. CARB’s own analysis in the Cost Inputs and Assumptions in PDF format, Table XI, declares that no barge-based capture and control system is anticipated for the Port.
11. Port staff note that the “power meter readings at the time of shore power connection and disconnection” requested in Section 93130.8(e)(2)(C) of the Proposed Control Measure are typically not available within 7 calendar days of a vessel’s departure, as anticipated by CARB. Power meter readings at the Port are typically available at the close of the calendar month and not sooner.
12. In Section 93130.1 of the Proposed Control Measure, the stated intent of the Proposed Control Measure is “to ensure that operators of ocean-going vessels reduce emissions using a California Air Resources Board (CARB) approved emission control strategy to reduce PM, NOx, and ROG emissions at berth without increasing overall GHG emissions from this Control Measure...” How will CARB monitor GHG emissions after

implementation of the Proposed Control Measure and what is the GHG emissions baseline?

### **Comments and Questions on the presentation from the May 14, 2019 and May 16, 2019 public workshops**

13. On Slide 4 of the presentation for the May 14, 2019 and May 16, 2019, public workshops, CARB staff show OGV at-berth emissions for the entire state. Port staff request to see these emissions totals further tabulated both by port or marine terminal and by vessel type. This is especially important as, per Section 93130.7(g)(2) of the Proposed Control Measure, VIEs are specific to the Fleet-Port pairing they are granted to.
14. On Slides 5 and 29 of the presentation for the May 14, 2019 and May 16, 2019 public workshops, CARB staff show a table of cost effectiveness for this rulemaking. The Port provides specific comments on the cost estimates below. Port staff request to see the total cost estimates and cost effectiveness estimates further tabulated both by port and by vessel type.

### **Comments and Questions on the Cost Inputs and Assumptions in PDF format**

15. In Table V. Auxiliary Engine Effective Power Values, CARB states that it is relying on “the same power values cited in Table 7 of the emission inventory methodology <https://ww3.arb.ca.gov/msei/ordiesel/draft2019ogvinv.pdf>. Values used in cost analysis for container/reefer and tanker vessels are calculated as one kW-average per vessel type, weighted by average vessel kW at each port/terminal and vessel visits to each port/terminal.”

As noted in the Port’s February 15, 2019 letter to CARB regarding the emissions inventory, the emissions inventory relies on the assumption that container vessel effective power is a function of vessel size bin. Will this assumption in the emissions inventory be modified to align with the cost estimate?

16. In Table VI. Duration of Emission Control at Berth, CARB shows that it is estimating statewide emissions reductions based on average duration of emission control at berth per vessel visit. The Port requests an emissions and cost analysis specific to each port or marine terminal and each vessel type. The stated average Container/Reefer duration of emission control at berth of 38.8 hours is about twice the average time for shore power connections at the Port. The difference between Port data and the average shows that the statewide average is not meaningful for the Port, and the conclusions of the averaging analysis may not apply to the Port.
17. Table VIII. Electricity and Fuel Cost Inputs and the associated Cost Estimates in Excel format show that CARB expects 100% of any Low Carbon Fuel Standard (“LCFS”) credits would be reinvested into shore power. It is not guaranteed that the credits would

all be reinvested into shore power. What assumptions did CARB staff make in projecting the LCFS credit value through 2032?

18. Related to the duration of emission control at berth in Table VI, Port staff would like to reiterate that shore power usage at the Port is billed based on hours of use, not kWh drawn. This affects the assumptions in Table VIII. Electricity and Fuel Cost Inputs, as well. While the cost of Pacific Gas & Electric electricity is relevant to the Matson Terminal and the overall discussion of electricity costs, the Port is the utility serving shore power at all but the Matson Terminal.
19. The growth assumptions in Table IX. Growth Factors overestimate actual TEU growth for the Port between 2016 and 2018 and continue to use a 3.9% compound annual TEU growth rate between 2018 and 2032. Port staff request that in addition to this high estimate of TEU growth, CARB prepare an estimate of emissions using a realistic growth estimate. For reference, the Port's CAGR between 2008 and 2018 was 0.4%. Port staff understand that the growth estimates CARB is using for emissions and costs for the Port will align with the vessel fleet projections (such as larger vessels each year) that are being used for the Ports of Long Beach and Los Angeles.
20. Port staff note that the cost of compliance with the existing At-Berth Regulation is high and requires frequent vessel retrofits. In 2018, the Port commissioned or re-commissioned nearly 100 vessels, or about 25% of the ever-commissioned vessel list. The ongoing costs of retrofitting vessels when the line rotation changes, maintaining vessel equipment, and commissioning vessels with the current At-Berth Regulation apply equally to comply with the Proposed Control Measure and should be included in the cost estimates as they are real and necessary costs of compliance with the Proposed Control Measure. The Proposed Control Measure is not additive and incremental to the At-Berth Regulation, but rather a replacement and as such the entire cost to comply with the Proposed Control Measure needs to be factored into the cost effectiveness.

## **Closing**

Port staff appreciate the opportunity to review the Proposed Control Measure and attend the public workshop on May 14, 2019. We look forward to working with CARB on refinements to improve the Proposed Control Measure, emissions inventory, and associated analyses.

Please contact Catherine Mukai, P.E., Port Associate Environmental Planner/Scientist at [cmukai@portoakland.com](mailto:cmukai@portoakland.com) with any follow-up questions.

Sincerely,



Colleen Liang, Port Environmental Supervisor, for

**Richard Sinkoff**

Director of Environmental Programs and Planning

Enclosures: January 15, 2019 Port letter to ARB re: Comments on Preliminary Draft Health Risk Assessment (“HRA”) for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor

February 15, 2019 Port letter to ARB re: Comments on *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor



February 15, 2019

Angela Csondes  
Manager, Marine Strategies Section  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812-2815  
Submitted Via Electronic Comment Log

Subject: Comments on *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor

Dear Ms. Csondes:

The Port of Oakland (“Port”) appreciates the opportunity to comment on the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* posted January 15, 2019, for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor (“Proposed Control Measure”). The Port understands that the California Air Resources Board (“CARB”) is planning for the Proposed Control Measure to replace the current Airborne Toxic Control Measure (“ATCM”) for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port (the “At-Berth Regulation”), with the goal of taking the Proposed Control Measure to the CARB Governing Board in December 2019. CARB posted the text of the Proposed Control Measure on August 31, 2018. The *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* was prepared in support of the Proposed Control Measure.

The Port supports CARB’s ongoing efforts to reduce emissions from ocean-going vessels (“OGVs”) at berth and is working diligently to maximize the number of vessel visits using shore power. Port staff work collaboratively with shipping lines to provide education and resources about the shore power program. Port staff also track shore power usage in real time, collecting detailed information from marine terminal operators and posting that information on the Port’s website for public information purposes.<sup>1</sup>

---

<sup>1</sup> <https://www.oaklandseaport.com/development-programs/shore-power/>



The *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* document includes emissions from California ports and CARB-defined Marine Terminal Complexes (“MTCs”). The emissions for 2016 are tabulated in Appendix B, while emissions for other years are only represented graphically in figures in the document and in tables published by CARB on November 9, 2018.

Comments on the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* are due to CARB February 15, 2019. CARB will then host a public workshop to discuss the emissions on February 26, 2019. After that, Port staff anticipate the need for a revised emissions inventory for the Proposed Control Measure that responds to public comments. The Port provides wharfinger information to CARB annually as required by grant funding obligations. In addition, Port staff request that CARB staff work with the Port to refine assumptions made in the emissions estimates.

Given the scheduling of the public workshop after the public comment period has closed, this letter includes comments and questions that may best be addressed in the workshop. Thus, the Port is providing a list of comments and questions on the draft emissions inventory and topics for discussion at the February 26 public workshop.

**Comments and Questions on the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results***

1. Why was 2016 selected as the baseline calendar year for the emissions inventory? Does CARB plan to conduct in-depth emissions inventories for 2017 and 2018?
2. Table 4 of the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* shows vessel visit counts to California ports and MTCs in 2016 only. However, current trends are for fewer calls by larger vessels for a given amount of containerized cargo. The discussion on page 25 of the draft clarifies that “vessel practice changes” are not considered, even as the total number of calls is dropping in real time. Since 2013, total annual calls to the Port have been decreasing. Container cargo throughput is thus decoupled from vessel call activity. CARB should expand the vessel growth forecasting for the baseline scenario to include the effects of larger vessels and fewer calls for the same amount of containerized cargo.
3. Table 7 of the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* relies on the assumption that for all ports and MTCs, container vessel effective power will match that of the Ports of Los Angeles and Long Beach in 2016. The effective power does not appear to be a function of vessel size bin, so the level of detail with which the effective power is classified by CARB-defined size bin is not appropriate. In addition, given the variation between data from the Port of Los Angeles and the Port of Long Beach within the same CARB-defined size bin, the data may not be meaningful when averaged by CARB-defined size bin. CARB should use an average effective power for container vessels regardless of size.

4. The growth rates in the Freight Analysis Framework (“FAF”) for ports and MTCs outside of the San Pedro Bay are at odds with current trends. The FAF assumption for container cargo at the Port of Oakland is a 5% year-over-year growth rate between 2016 and 2020. Actual growth rates between 2016 and 2018 have not kept pace, with current Oakland planning documents estimating about half the FAF compound annual growth rate.<sup>2</sup> CARB should adjust the FAF growth forecasting for the baseline scenario to align with actual trends.
5. Page 27 of the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* discusses statistical significance in the context of the emission forecasting. If CARB staff have conducted an uncertainties analysis, it should be included in the methodology and results document.
6. Table 15 of the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* does not treat all ports and vessel types equally when assuming “Projected 2020 and Later Time on Shorepower,” without justifying the differences. For instance, CARB assumes container vessels at the Port of Hueneme spend 80% of their time on shore power after 2020, while CARB assumes at the Ports of Los Angeles and Long Beach container vessels spend only 65% of their time on shore power. Impossibly, CARB-defined size bins 7, 9, and 12 container vessels at the Port of Oakland are assumed to spend 100% of their time at berth on shore power.<sup>3</sup> Port staff request further justification for and synchronization of the assumptions for “Projected 2020 and Later Time on Shorepower.”
7. In the discussion of the “static age distribution model” versus a survival and turnover model, CARB staff do not consider the abnormally high number of OGV keels laid in 2015. How did CARB decide that the spike in keels laid in 2015 was not material to estimating NOx emissions through 2050?
8. CARB should revise its assumption that sulfur content in fuel is 0.1% based on the results of enforcement analyses of in-use fuel sulfur. The sulfur content of in-use fuel as sampled by the CARB enforcement team in calendar years 2017 and 2018 is lower than 0.1% by 30% and almost 50%, respectively, presenting information that actual emissions are lower than those estimated by CARB. (As stated on page 12, information from CARB’s enforcement team is already used to determine reduced emissions from reduced engine activity time.)

---

<sup>2</sup> <https://www.portfoakland.com/community/environmental-stewardship/maritime-air-quality-improvement-plan/>

<sup>3</sup> Vessels arriving at berth need time to tie lines and lower gangways before they can connect shore power and likewise vessels need time to disconnect from shore power when leaving the berth. With these bookends on each vessel call, a vessel cannot be plugged into shore power for 100% of the time at berth.

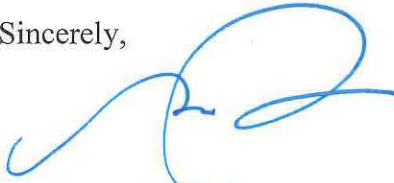
9. CARB should elaborate in the text on the Particulate Matter (“PM”) emission factor for Marine Gas Oil (“MGO”) at 0.1% sulfur. The 2007 Initial Statement of Reasons for At-Berth Regulation rulemaking used a value of 0.25 g/kW-hr for 0.1% S MGO. The *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* uses a PM emission factor of 0.18 g/kW-hr for the same fuel. The root source for OGV auxiliary engine emission factors is stated in both cases as the 2002 Entec study, with no description of why two different values of PM emission factors are used for the same fuel.
10. Please add References to the Table of Contents and to the document (Sources of emission factor information are only included at the end of Appendix A).
11. On page 42, should the last sentence read “it excludes emissions from boilers,” not “it excludes emissions from auxiliary engines”?

### Closing

Port staff look forward to working with CARB to support the updated emissions inventories referred to in the *Draft 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results* after the workshop on February 26.

Please contact Catherine Mukai, P.E., Port Associate Environmental Planner/Scientist at [cmukai@portoakland.com](mailto:cmukai@portoakland.com) with any follow-up questions.

Sincerely,



Richard Sinkoff  
Director of Environmental Programs and Planning



January 31, 2019

Angela Csondes  
Manager, Marine Strategies Section  
California Air Resources Board  
P.O. Box 2815  
Sacramento, CA 95812-2815  
Submitted Via Electronic Comment Log

Subject: Comments on Preliminary Draft Health Risk Assessment (“HRA”) for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor

Dear Ms. Csondes:

The Port of Oakland (“Port”) appreciates the opportunity to comment on the Preliminary Draft HRA posted November 5, 2018, for the Proposed Control Measure for Ocean-Going Vessels At Berth and At Anchor (“Proposed Control Measure”). The Port understands that the California Air Resources Board (“CARB”) is planning for the Proposed Control Measure to replace the current Airborne Toxic Control Measure (“ATCM”) for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port (the “At-Berth Regulation”), with the goal of taking the Proposed Control Measure to the CARB Governing Board in December 2019. CARB posted the text of the Proposed Control Measure on August 31, 2018. The November 5, 2018, Preliminary Draft HRA and associated air dispersion modeling files that CARB released December 14, 2018, were prepared in support of the Proposed Control Measure.

The Preliminary Health Analyses document contains two types of assessment, 1) an HRA using air dispersion modeling and impacts estimation guidance from the California Environmental Protection Agency Office of Environmental Health Hazard Assessment (“OEHHA”) and 2) an Incidents per Ton (“IPT”) analysis.

The Port supports CARB’s ongoing efforts to reduce emissions from ocean-going vessels (“OGV”) at berth and is working diligently to maximize the number of vessel visits using shore power. Port staff work collaboratively with shipping lines to provide education and resources about the shore power program. Port staff also track shore power usage in real time, collecting

detailed information from marine terminal operators and posting that information on the Port's web site for public information purposes.<sup>1</sup>

**The key input to the Preliminary Draft HRA is the estimated emissions from vessels at berth, which are not yet final. Emissions estimates need to be final and the Preliminary Draft HRA updated before the Preliminary Draft HRA results can be used.**

CARB conducted two HRAs addressing only the Ports of Long Beach and Los Angeles together and the Richmond Complex. CARB's use of AERMOD and the 2015 OEHHA Risk Assessment Guidelines for HRAs represents current best practices. However, the robustness of the findings is limited by the emissions estimates. Emissions estimates are typically completed before the HRA but in this case are open for public comment and discussion through the end of February 2019, at which point they may be refined.

The air dispersion model AERMOD, which CARB selected for the Preliminary Draft HRA is the preferred model from the US Environmental Protection Agency. Required inputs to AERMOD include meteorological data, emissions information for each pollutant considered, and exhaust parameters for release points. Of these inputs, the estimated emissions are key, since emissions have a direct linear relationship with the estimated ambient concentrations and health impacts from each source.

On November 5, 2018, CARB posted the Preliminary Draft HRA. CARB then posted a hard-coded spreadsheet of "Draft At Berth Emissions Estimates" used in the Preliminary Draft HRA on November 9, 2018, and air dispersion modeling files in mid-December with a public comment period for the Preliminary Draft HRA closing January 31, 2019.

CARB also posted the "Draft: 2018/2019 Update to Inventory for Ocean-Going Vessels: Methodology and Results"—for the emissions that were entered into the Preliminary Draft HRA—on January 16, 2019, with a separate public comment period for the emissions methodology and results closing February 16, 2019.

Without greater understanding of the emissions used as data inputs to the air dispersion model and risk estimation calculations, the utility of the Preliminary Draft HRA is limited. Port staff are reviewing the emissions methodology released on January 16, 2019, and are comparing it with the spreadsheet posted November 9, 2018. Port staff look forward to discussing the emissions with CARB staff at the public workshop CARB scheduled for February 26, 2019. After that, Port staff anticipate the need for a revised HRA for the Proposed Control Measure that relies on emissions that have been reviewed and understood by all parties.

The AERMOD input and output files and risk estimation databases CARB provided on December 14, 2018, appear to carry out the methodology discussed in the Draft Preliminary HRA, but further review is not warranted until emissions are finalized. In addition to the

---

<sup>1</sup> <https://www.oaklandseaport.com/development-programs/shore-power/>

wharfinger information provided by the Port to CARB annually as required by grant funding obligations, Port staff are happy to work with CARB staff to refine assumptions made in the emissions estimates.

**The role of the Preliminary Draft HRA posted November 5, 2018, in rulemaking for the Proposed Control Measure is not clear.**

The Proposed Control Measure is not an ATCM, in fact its stated purpose is to reduce NO<sub>x</sub>, PM, and GHG but not the toxic air contaminant DPM—which is the focus of the Preliminary Draft HRA. The inclusion of an HRA for any of the ports in California is therefore not a fundamental driver of the Proposed Control Measure (leaving the CARB Governing Board direction, Mobile Source Strategy, and Sustainable Freight Action Plan as drivers). Thus, any reductions in risk shown in the Preliminary Draft HRA are purely informational. Indeed, CARB’s elimination of the At-Berth Regulation ATCM by focusing on a Proposed Control Measure for NO<sub>x</sub> and PM but not DPM seems to imply that no further risk reductions are required.

The Preliminary Health Analyses report announces that the risk reductions of the Proposed Control Measure are “significant,” a term defined in the California Environmental Quality Act (“CEQA”) and used in CARB’s Certified Regulatory Program, but not defined in the CARB rulemaking process. While CARB staff present the percentage of reduction in risk of the Proposed Control Measure over the current At-Berth Regulation, the total residual risk should be compared to that of other source categories to prioritize the need for the Proposed Control Measure.

**Health impacts from Criteria Air Pollutants are managed through SIP Planning, which does not require a new Proposed Control Measure for the container fleet.**

PM<sub>2.5</sub> is a criteria air pollutant, not a toxic air contaminant, and the California Ambient Air Quality Standards (“CAAQS”) and National Ambient Air Quality Standards (“NAAQS”) are the appropriate health-protective standards for PM<sub>2.5</sub>. Regional ambient air concentrations of PM<sub>2.5</sub> are managed to levels below the CAAQS and NAAQS through SIP planning. Even so, CARB’s Mobile Source Strategy calls for an evaluation of emissions reductions from currently unregulated fleets, not the already regulated container fleet which calls Oakland. Thus, SIP planning for PM<sub>2.5</sub> attainment does not mandate an amended At-Berth Regulation to reduce statewide emissions through an “every vessel, every visit” control strategy like CARB staff have proposed.

**The Incidents Per Ton (“IPT”) methodology presented for PM<sub>2.5</sub>, a criteria air pollutant, is not a cost effectiveness metric.**

The IPT methodology provides information on health effects assuming ambient PM<sub>2.5</sub> concentration is the sole contributor to adverse health effects, with a direct linear relationship. The IPT methodology is not, however, part of a cost-effectiveness evaluation. CARB released a “Preliminary Cost Information” document in August 2018 as part of this rulemaking effort,



which relies on the same assumptions as the emissions inventory (which, as discussed above, may need refinement). The preliminary costs data evaluated total costs of the Proposed Control Measure, but not cost effectiveness of proposed measures calculated in terms of cost per ton of emissions removed. CARB has also not yet prepared a socio-economic impact analysis of the proposed rule.

### **Closing**

Port staff are interested in working with CARB to improve the current ATCM focused on DPM to allow for 100% compliance. We look forward to seeing enhanced supporting documentation for the CARB emissions estimates and a revised HRA and cost effectiveness analysis once the emissions are updated.

Please contact Catherine Mukai, P.E., Port Associate Environmental Planner/Scientist at [cmukai@portoakland.com](mailto:cmukai@portoakland.com) with any follow-up questions.

Sincerely,



Richard Sinkoff  
Director of Environmental Programs and Planning