



WORLD SHIPPING COUNCIL
PARTNERS IN TRADE

World Shipping Council Comments
to the
California Air Resources Board (CARB)
on the
Proposed 15-Day Changes to the Control Measure
for Ocean Going Vessels at Berth

1 May 2020

The World Shipping Council (WSC) is a non-profit trade association that represents the liner shipping industry, which is comprised primarily of operators of containerships, vehicle carriers, and roll-on/roll-off (ro-ro) vessels. Together, WSC's members operate approximately 90% of the world's liner vessel services. Vessels operated by WSC members make frequent calls in California ports, and WSC's members would be directly and substantially affected by the proposed rule.¹

On 9 December 2019, WSC filed lengthy comments, with specific and practical recommendations to address each comment, with CARB on its proposed control measure for ocean going vessels at berth. We appreciate that CARB has incorporated several of our recommendations into its package of 15-day changes to the proposed rule. We are concerned, however, that CARB has not addressed a number of important policy recommendations that would help ensure California's updated at-berth regulations are practicable, provide a fair and reasonable compliance pathway for regulated vessels, and achieve the state's emissions reduction goals.

Before turning to our detailed comments on the 15-day changes, we first wish to comment on two critical issues: 1) the impact of the COVID-19 pandemic on the regulated community's ability to implement the rule according to the planned implementation schedule, should the rule be adopted by the Board, and 2) the rule's planned expansion to new classes of vessels, namely ro-ro vessels, on an accelerated timeline, despite the lack of compliance options for these vessels and no detailed cost-benefit analysis supporting this move.

¹ A full description of the Council and a list of its members are available at www.worldshipping.org.

Impact of COVID-19 Pandemic: The world is grappling with arguably the worst pandemic in more than a century. To prevent the spread of COVID-19, citizens and companies around the world are living and working under severe restrictions. The resulting global economic contraction is deepening and causing tremendous uncertainty for consumers and the shipping industry that supplies and feeds them. Shipping companies and many other businesses are struggling to remain in business as demand has plummeted. Shipping industry efforts are focused on maintaining services, keeping crews safe and transporting relief supplies.

While CARB has been working for the past several years in collaboration with the regulated community on amendments to its at-berth regulations, no one could have predicted that the COVID-19 outbreak would occur just as the proposed rule was being finalized. The rule will require a range of substantial changes that are operational, procedural and infrastructure-related. While we understand the motivations to take the proposed rule forward to the Board for approval, we have serious concerns about the ability of liner vessel operators and the parties that they must rely on to comply with the rule (ports, terminals and emissions capture system operators, etc..) to implement the rule by 1 January 2021. **We therefore respectfully recommend that CARB delay formal action and implementation of the rule until after the COVID-19 outbreak is under control and the regulated community can properly implement the rule's requirements.**

Expansion to Ro-Ro Vessels: We continue to have major concerns with CARB's proposal to expand, and now accelerate, the applicability of the at berth regulations to ro-ro vessels (including vehicle carriers), which comprise a large number of discrete vessels, only a small percentage of which make infrequent and very short port calls in California. **No evidence has been presented by CARB that demonstrates that a cost-effective and practicable pathway exists for controlling ro-ro vessels' auxiliary emissions. CARB's analyses also fail to address the major operational, safety and cost issues the proposed emissions capture systems pose for ro-ro vessels or to account for the emissions generated by these control systems and the tug boats need to maneuver them to and from the vessels.** In short, there has been no compelling data presented that supports or concludes that the emissions generated at berth by these ships is significant or that the cost per ton of emissions reduced warrants the extensive investments that regulation here would require.

WSC's comments and recommendation on CARB's 15-day Changes the Proposed Regulation Order follow for your consideration. Questions on these comments should be directed to Doug Schneider of the WSC staff at dschneider@worldshipping.org.

1. Definitions (Section 93130.2 (b)):

- a. Ready to Work: CARB proposes to replace the references to the U.S. Coast Guard and U.S. Customs and Border Protection with "*all government authorities with jurisdiction over the vessel visit*". We support this change as it addresses the fact that "Ready to Work" should not occur until any government entities that has jurisdiction over the vessel visit has cleared the vessel. **While the above described change is helpful, we recommend that**

CARB insert in the amended definition the following after “*netting down*” and before “*all*”: “, the ramp is down and secure (if applicable), required shore side labor technicians are present, and”. These changes to the “Ready to Work” definition are needed to accommodate vessels equipped with ramps (which would not therefore use a gangway) and to note the presence of labor technicians that are essential to hooking the vessel up to shore power or to an alternative compliance method.

- b. Visit: CARB proposes to add language to this definition that states that “a vessel move from one berth to another is considered a new visit at each subsequent berth”. **We recommend that the words “at a different marine terminal” be inserted after the word “another”** so shifts within a single marine terminal, which occur infrequently but may be done when an operational problem is encountered at the initial berth, would not constitute a new vessel visit. To correspond to the above change, the words “at a different marine terminal” must also be inserted after the word “berth” in Section 93130.7(e)(4)(I).

2. CARB Approved Emissions Control Strategy (CAECS) Operators (Section 93130.5):

- a. Executive Order (Section 93130.5 (a)): We support CARB’s proposed amendments to this section, as they make clear that emissions control strategy operators must be approved by CARB and eliminate confusion about the Executive Order’s applicability to emissions control strategies that are deployed not from the terminal or port property, but from a barge.
- b. Requirements for CARB Approval (Section 93130.5 (d)): Under current CARB at-berth regulations, LNG-fired auxiliary engines are treated as an approved control option. The proposed rule would, however, require time-consuming and costly testing of LNG-fired auxiliary engines before they may apply for CARB approval. This will discourage investments in a promising alternative to oil fired auxiliaries. We therefore recommend that CARB retain the provisions in the current at-berth regulations that designate LNG-fired auxiliaries as an approved control option.

3. Vessel Operator Requirements (Section 93130.7):

- a. General Requirement (Section 93130.7): Section 93130.7 contains checklist items that a commissioned shore power equipped ship will **not** be able to complete unless the terminal/port and/or CAECS operator completes their obligations under the rule. Section 93130.7’s statement that “Any failure to perform any specific items in this section shall constitute a separate violation...” could thus be used to penalize a shore power equipped ship that **cannot** complete all of the vessel checklist items in 93130.7(e) because the terminal/port or CAECS operator failed to meet its rule obligations.

To correct this issue, we recommend that the second sentence in the opening paragraph of Section 93130.7 be replaced with:

“Any failure to perform any specific items in this section shall constitute a separate violation for each calendar day that the failure occurs, except to the extent a vessel operator cannot perform any requirement due to (1) a terminal and/or port’s failure to comply with the portions of this Control Measure that impose requirements upon terminals and/or ports, and/or (2) a CARB Approved Emission Control Strategy Operator’s failure to comply with the portions of this Control Measure that impose requirements upon CARB Approved Emission Control Strategy Operators.”

- b. Shore Power Requirements (Section 93130.7 (a)): CARB proposes to replace the words “compatible shore power berth” with language that requires vessels to be plugged into shore power on visits to terminals where the port or terminal has commissioned the vessel’s shore power equipment or deemed the vessel to be compatible based on the vessel’s previous commissioning to another berth. While CARB’s intent with these changes may be to eliminate confusion with respect to the meaning of the term “compatible”, further changes are needed to make it clear that the port or terminal may not use this provision to dictate to vessels on which side they must be able to plug in to shore power. **We therefore recommend that 93130.7 (a) be replaced with the following:**

“(a) Shore power requirements for at berth emissions reductions.

Vessel operators with shore power vessels that have been commissioned by the terminal (or port) at which the vessel will call (or deemed compatible based on a previous commissioning) shall plug in to shore power on each visit to the terminal. Commissioning of vessel shore power equipment should be based on the following technical standards: IEC/ISO/IEEE 80005-1/80005-2 and IEC 62613-1.”

- c. Compliance Dates and Applicability to Ro-Ro Vessels (Section 93130.7(b)): As noted in the introduction of these comments, the proposed rule and supporting analyses have failed to provide an adequate rationale and analyses of the costs and benefits of regulating ro-ro auxiliary emissions. CARB is now proposing in Table 1 to advance the compliance date for ro-ro vessels one year to require compliance starting 1 January 2024.

CARB has estimated that the control cost per ton of emissions reduced for ro-ro vessels is \$53,600. Even using that cost estimate, which we believe is low², it is worth noting for comparison that CARB estimated that the control cost per ton of emissions reduced for containerhips is \$13,500. When asked what cost-benefit threshold was used to decide which classes of vessels to regulate and which not to regulate, CARB staff reported that there is no threshold and that the decision to regulate ro-ro emissions was

² Starcrest Consulting Group, LLC, published in December 2019 a ro-ro cost analysis study for PMSA and the Ports of Los Angeles and Long Beach. The study estimated that the costs to control ro-ro auxiliary emissions ranges from approximately \$115,000 to \$200,000 per weighted ton of emissions. A copy of this study may be found in the CARB at-berth docket at: <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ogvatberth2019>.

based simply on aggregate emissions. There has been no considered analysis of the costs and benefits of regulating ro-ro auxiliary emissions versus the operational realities associated with regulating this class of vessels, which is comprised of a large number of discrete vessels, only a small percentage of which make infrequent and very short port calls (on average 14 hours and short as 8 hours) in California. We also note that ro-ro auxiliary emissions occur in distinctly different geographic locations, where their impacts and the related cost-benefit analyses for controlling those emissions may be quite different.

Furthermore, shore power infrastructure for ro-ro vessels is not emerging in California ports or in any other U.S. or international ports where ro-ros call. This is because: ro-ros operate less like liner vessels and more like tramp vessels (without scheduled, recurring calls to defined port calls³), making shore-side power infrastructure difficult to set up; ro-ros would need to go through expensive electrical system retrofits because container-based shore power units (e.g. AMP's) are not a realistic option; and ro-ros don't typically carry dedicated electricians that container vessels have (because ro-ros don't carry refrigerated containers).

CARB is predicating its regulation of ro-ros on the premise that barge or land-based emissions capture and control technologies will become a viable and practicable emissions control option. Experience to date with the two-existing barge-based capture and control service providers has demonstrated that those services are often unreliable, are exceedingly costly, and would pose substantial operational and safety problems for ro-ros. For example, that systems cannot be used in windy weather, cannot always reach ro-ro stacks (which may be 40 meters laterally and 40 meters above the waterline), and often prevent simultaneous alongside bunkering operations. If ro-ros cannot bunker in port, they may be forced to bunker at anchorages, which would generate auxiliary emissions as well as primary engine emissions from tugboats used to move bunkering barges to and from the anchorage.

We also note that barge-based capture and control systems need to be moved into position, by tugboats after the ro-ro has been secured to the pier. This consumes a substantial amount of time, which increases the cost of control per hour of emissions because ro-ro calls are already very short. A related factor that has not been adequately considered is the tug emissions generated to move the barge-based capture and control system to and from the ro-ro vessels and other vessels that may require barge-based emissions control strategies. As a result, emissions from tugboat operations can significantly offset the emissions reductions gained by requiring ro-ro to use capture and control systems during their vessel calls. The capture and control systems also use

³ Within the ro-ro industry, the term "semi-liner" is used to describe ro-ro operations. It is often the case that ro-ros that call California do so as part of "round the world" (RTW) services, which means, by definition, the vessels in those services are infrequent visitors to California. A typical RTW service takes about 4 months, so vessels operating in those services may only make 2-3 calls to California per year.

generators for power that need to be factored into the total impact analysis for regulating ro-ro auxiliary emissions.

Shore-based capture and control systems also pose problems for controlling ro-ro emissions. While one land-based system is being trialed (and we do not know if it is being trialed for use with container ships or ro-ros, which is an important operational distinction), no commissioned land-based systems exist today. We understand that land-based systems would not be a practicable control option at many existing California ro-ro terminals because the piers on which the shore-based control systems would sit could not support the weight of the systems. Furthermore, such systems could only serve one vessel at a time and would obstruct cargo operations as ro-ro stacks are located near the stern where the ramp is located. Ro-ro operators need to be able to stage, maneuver and park cargo all along the already space-constrained quay side. Even if this technology could be built and deployed, the limitations related to use of the systems in windy weather remain as does the need to factor in the generator GHG emissions the control systems would produce.

For the reasons discussed above, we recommend that CARB not proceed with plans to regulate ro-ro auxiliary emissions in 2024 and instead monitor ro-ro emissions and the ongoing development of technologies that may in the future provide a viable and economically achievable compliance option for these vessels.

d. Vessel Compliance Checklists (Section 93130.7 (e)):

- Shore Power Connection Time: While we appreciate that CARB proposes to modify § (3) (A) to require vessels to begin using shore power or another CAECS within two hours after “Ready to Work”, we still have concerns that a substantial number of arriving vessels would be unable to meet this requirement. As we have previously noted, establishing shore power connections must be done safely by longshore technicians, who may not be immediately available given their other extensive responsibilities. Unreasonably short time limits for connecting high-voltage systems could pose safety risks to workers, result in unnecessary damage to the equipment, and subject a substantial percentage of compliant vessel calls to noncompliance for tasks the vessel cannot control.

One of our Member lines that has large number of shore power compatible vessels calling at terminals in California computed how the proposed connection time would affect that company’s compliance rate. Using data for 265 vessel calls in 3 ports from 2019-2020, the company found that under the proposed requirement to connect within two hours after “Ready to Work”, between 14 and 18% of vessel calls would fail to comply. A two-hour connection deadline remains unacceptable and would subject a large percentage of otherwise compliant vessels to penalties. **We therefore recommend that vessels be required to begin using shore power or another CAECS within three hours after “Ready to Work”.**

- Shore Power Disconnection Time: § (3) (B) would require vessels to cease using shore power no sooner than one hour before “Pilot on Board”. There will be situations in which this is not a practicable disconnection deadline for ocean carriers because of delayed vessel departures due to weather or vessel traffic or if labor unplugs the vessels early due to their own shift schedules. Using data for 265 vessel calls in 3 ports from 2019-2020, a WSC member line that has substantial operations in California found that under the proposed requirement to disconnect no sooner than one hour before “Pilot on Board”, between 9 and 11% of vessel calls would fail to comply. **We therefore recommend that the shore power disconnection time be no sooner than two hours before “Pilot on Board”.**
 - Post-Visit Reporting: CARB proposes in § (4) to require reporting of information for each visit to a California terminal within 30 days of vessel departure instead of the previously proposed 7 days of vessel departure. While we support the proposed modification as it is an improvement over the previous proposal, **we recommend that CARB consider allowing vessel operating companies to submit batched visit information for all of their vessels that call California on a monthly or quarterly basis. We also recommend that CARB develop an online system/dashboard into which each vessel (and terminal) operator would upload its post-visit reports. The dashboard should provide each operator with an updated snapshot of its compliance as well as VIE/TIE allowances versus usage and other relevant metrics for the designated fleet.**
4. Vessel Visit Exceptions (Section 93130.8): We continue to support CARB’s inclusion in this section of all vessel visit exceptions, including those for safety and emergency events, vessel commissioning, research, previously unregulated vessels, vessels visiting low activity terminals, vessel incident events (VIE) and terminal incident events (TIE), remediation fees, and innovative concepts. We also support CARB’s inclusion of a procedure for dealing with situations in which a vessel is unable to complete an at-berth system commissioning visit in a single call to the terminal.
5. Terminal Operator Requirements (Section 93130.9):
- a. General Requirement: We continue to support CARB’s decision to include in the proposed rule clear and appropriate obligations for marine terminals and ports to, among other things, provide the shore side infrastructure to connect ships to at-berth power and to connect commissioned ships in a timely manner when they call. These are functions that commercial ships cannot themselves perform and lack commercial power to require. Including these requirements in the regulation will establish balanced obligations for ships and the terminals they call and will set clear expectations regarding what ports and marine terminals will need to do to fulfill their obligations under the rule.

- b. Commissioning (Section 93130.9 (a)(2)): While we do not believe it was CARB's intent, the proposed amendment could be read as allowing ports or terminal operators to dictate on which side vessels seeking to have their installed shore power systems commissioned must connect. This is unacceptable. Vessel operating companies have spent billions of dollars to retrofit vessels to be able to connect to shore power pursuant to CARB's regulations. Vessel shore power equipment is designed to enable the vessel to connect to shore power on one, but not both, sides and the vessel has no ability to quickly switch the equipment to the other side. We see no reason why this section needs to include a reference to the location on which the shore power equipment is installed. **We therefore strongly recommend that this provision be replaced with the following: "(2) The port or terminal is responsible for commissioning vessels fitted with installed shore power equipment."**
6. VIEs and TIEs (Section 93130.11):
- a. Exclusion of Innovative Concept Visits in VIE and TIE Allocations (Section 93130.11 (a)): We support the allocation of VIEs based on company vessel fleets and support CARB's proposal to exclude from the annual VIE allocations visits made under an innovative concept covered under Section 93130.17 of the rule.
- b. VIE and TIE Rates (Section 93130.11 (b)): The table on page A-39 of the proposed rule indicates that all vessels would be granted VIEs for 5% of their previous year vessel calls. Terminals would initially be granted TIEs for 15% of the terminal's annual vessel visits. That allocation would fall to 5% in 2025. We think that the VIE percentage needs to be increased to account for the fact that this proposed rule will require all containerships and refrigerated cargo vessels to use at-berth power when the rule becomes effective. While many of the issues that have previously prevented commissioned vessels from connecting to at-berth power have been shore side infrastructure-related, we anticipate, based on historical compliance data, that more than 5% of vessel fleets will be unable to comply due to onboard equipment problems, the need to rotate vessels into and out of California services for required surveys and dry-dockings, and due to unpredictable commercial demands that may require shipping companies to deploy or phase-in non-commissioned vessels to meet U.S. import and export trade needs. Furthermore, there are only two CAECS currently in operation and they offer services only in the Ports of Los Angeles and Long Beach. The lack of available CAECS (e.g. in ports such as Oakland) reinforces the need to temporarily increase the VIE percentage. **With the above considerations in mind, we recommend that CARB temporarily increase the VIE allocation for 2021-2024 to 10 percent per year.**
- c. Requests for Additional VIEs and TIEs (Section 93130.11 (c)): We support CARB's proposed process through which a vessel operating company may request additional VIEs to accommodate either a new fleet or growth in the number of visits for an existing fleet. **Since vessel operators may encounter situations that warrant additional VIEs that could not be anticipated by 1 December, we recommend that CARB modify 93130.11 (c) by**

inserting the following after the third full sentence: *“(Note: CARB staff will consider, and respond within 60 calendar days, to written requests for additional VIE and TIEs submitted at any time during the year)”*.

- d. VIE and TIE Expiration (Section 93130.11 (d)): The proposed rule states that VIEs and TIEs would expire on January 31 of the year after they are granted. To address consistently challenging market conditions during the winter months, **we recommend that CARB allow companies to carry over any unused TIEs or VIE until June 30 of the year after they were granted.**
7. CAECS Operator Requirements (Section 93130.12): We commend CARB for including in this proposed rule responsibilities and requirements for CAECS operators. Since these operators will provide essential emissions control services, it is logical that the operators themselves will be subject to checklist obligations and penalties for failing to meet their obligations under the rule. This is particularly important given the historical problems vessel operators have encountered with CAECS operators who, despite having a confirmed booking and contract with a vessel operator, may not show up on time, may cancel a booking on short notice or may breakdown during control operations. When a vessel or marine terminal contracts for CAECS services, the vessel or marine terminal cannot control whether and when the CAECS operator shows up or provides proper control services.

We therefore recommend that, when a CAECS operator fails to provide contracted emissions control services to a vessel or marine terminal, the compliance burden and any penalties for noncompliance be initiated solely against the CAECS operator. We also recommend that CARB amend the visit reporting deadline for CAECS operators consistent with our recommendations for vessel visit reporting (discussed above in part 5.c.iii of these comments).

WSC also believes, as we have communicated in earlier meetings and comments, that it is important to discourage or restrict the use of alternative control emission control technologies in container ports where the clear objective of the existing rule was to facilitate connections to shore-side power. **Encouraging or facilitating further expansion of alternative emission control technologies in container terminals undermines the investments made in retrofitting the container fleet and could lead to an absurd and unfavorable outcome in which shore-power equipped container ships are expected to use alternative emission control technologies that are inefficient, often unreliable, and only available at high cost.** In short, expansion of emission capture systems in container terminals and ports undermines existing carrier investments and undermines the rules effectiveness in delivering emission reductions that are achieved through the most cost-effective and efficient pathway.

8. Terminal and Port Plan Requirements (Section 93130.14): WSC supports the provisions that require CARB approval of shore-side infrastructure plans applicable to ports and terminals. How well these obligations are implemented will have a significant impact on the

future program and whether the rule delivers the expected air quality benefits. We note that the port and terminal plan submission deadlines occur, for container, refrigerated cargo and passenger terminals, six months *after* the vessels that call those ports and terminals must comply with the rules. **We strongly encourage CARB not to initiate penalties against vessels that encounter compliance difficulties at ports and terminals where the shore power infrastructure is not yet fully in place.**

WSC also believes that there would be value in explicitly articulating in the revised rule that port and terminal plans should include, among other things: a) appropriate changes to existing infrastructure design (e.g., inadequate electrical sub-station/electrical vault configurations); b) expansion of existing electrical infrastructure in container ports to accommodate future rule requirements to enable 95% of all shore power equipped container ship calls to be accommodated through shore-side power; and c) that approved plans include a realistic timeframe for design and construction consistent with the final regulatory dates promulgated in the final rule.

9. Interim Evaluation of New Control Technologies (Section 93130.14 (d)): Should CARB proceed with plans to regulate ro-ro auxiliary emissions, the interim (now 2022) evaluation of control technologies and landside infrastructure will be essential in determining if operationally-practicable controls of ro-ro emissions are commercially available and cost-effective. **If CARB's interim evaluation determines that such control technologies are not practicable and commercially available at the terminals used by ro-ro vessels, then CARB will need to push back the compliance deadline. We also recommend that CARB include in its interim evaluation a detailed cost-benefit analyses for controlling ro-ro auxiliary emissions using available control technologies.**
10. Remediation Fund Users (Section 93130.15): **We recommend that CARB expand the list of circumstances in which vessel operators may use the remediation fund to include vessels that make infrequent calls to California ports (e.g. less than 3 calls per year).** This is a logical regulatory approach for addressing infrequent calling vessels (e.g. vessels rotated in to California to address increased demand or "extra loaders" brought in to ease port congestion) because it would enable the vessels to have a compliance option if CAECS operators, which have limited operations, are not available or operational for a particular visit. **We also request that CARB confirm that if a vessel's request to use the remediation fund for a particular visit is denied by CARB, the vessel may use a VIE for that visit instead of being subject to penalty action.**
11. Innovative Concept Compliance Option (Section 93130.17): WSC supports in general CARB's proposal to include the use of innovative concepts as compliance options for regulated parties to reduce emissions. We are concerned, however, that some of the conditions for approval of an innovative concept are unreasonable and may make it impossible or at least highly improbable for an innovative concept to be approved. **We therefore recommend the following changes to Section 93130.17:**

- Delete § (a) (3), which would unrealistically require reductions “in excess of any other state, federal or international rule, regulation, statute or any other legal requirement...”;
- Amend § (a) (4) by replacing “three” with “ten” in the last sentence. This change would allow for emissions reductions up to ten miles away from the port or marine terminal called by the vessel;
- Amend § (a) (7) by increasing the length of the compliance period to five years, which is more reasonable given the amount of analysis and effort needed to prepare and obtain approval of an innovative compliance option;

12. Summary of Responsibilities (Section 93130.17): We offer the following comments on Table 6:

- We support the inclusion of “CAECS operator” as a responsible party for circumstances in which there are delays, but emissions reductions occur.
- The last row suggests that in the case of a CAECS failure, the vessel, terminal and the CAECS operator would be held responsible. We note that nowhere else in the matrix is a party held responsible for a circumstance completely outside of its ability to control. An arriving vessel has absolutely no ability to control whether a CAECS system will work properly. The proper function and maintenance of a CAECS is up the CAECS operator. **We therefore recommend that “vessel” be removed from the list of responsible parties when a CAECS has a failure.**

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