



California Council for Environmental and Economic Balance

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February 15, 2019

Sam Pournazeri
California Air Resources Board
1001 I Street
Sacramento, CA 95814
Submitted electronically via <https://www.arb.ca.gov>

Re: Regulatory Concepts for Amendments to the ARB At-Berth Regulation

Dear Dr. Pournazeri,

We submit the following comments on behalf of the California Council for Environmental and Economic Balance (CCEEB) to the California Air Resources Board's (ARB). CCEEB is a nonpartisan, nonprofit coalition of business, labor, and public leaders that advances strategies for a healthy environment and sound economy.

We appreciate the opportunity to comment on ARB's Preliminary Health Analyses and Draft OGV Inventory Methodology documents related to the proposed amendments to ARB's At-Berth (Shore Power) regulation. In summary, we believe that:

- **Provide background and context for the Preliminary Health Analyses.** Additional background is needed for the public to be able to understand all of the elements of the Preliminary Health Analyses (PRA). CCEEB further recommends that the results of the PRA be properly placed into context with respect to changes in risk assessment techniques, existing risk management guidance, and exposures experienced daily by residents of California. Uncertainties in the calculations should also be discussed in more detail.
- **Revisit PRA to provide consistency in assumptions.** The assessment of reduced health outcomes, and associated monetized benefits, should be revisited, as we believe they reflect internal inconsistencies.
- **Lack of understanding of data sources.** The emissions inventory should be clarified as to allow stakeholders to validate data and assumptions. ARB should work with stakeholders to make data from

private pay services publicly available or provide alternative data sources to validate growth assumptions, while maintaining business confidential information from stakeholders. By clarifying data, ARB will allow the public to better understand projected growth rates, some of which currently appear to be unrealistic and unsustainable.

- **Rule concepts must be technological feasibility and cost effective.** Proposed control measures must be technologically feasible and cost effective. We do not believe this has been demonstrated for the proposed rule amendments.
- **Who are the responsible parties?** Greater clarity is needed to help identify responsible parties under the proposed rule amendments.
- **Work with stakeholders to refine and validate assumption and data.** CCEEB strongly encourages ARB to continue discussions with California ports and stakeholders to validate assumptions used in ARB's analyses, including health analyses, technology assessments, and cost-effectiveness estimates that underly the basis for the proposed rule amendments.

Following are our initial comments on the Preliminary Health Analyses and Draft OGV Inventory Methodology documents. We may have additional comments on both documents as we continue our review.

Preliminary Health Analyses

1. **Further background is needed for the Preliminary Health Analyses.** As other stakeholders have commented, much of the background data used for ARB's health analyses are missing or incomplete. CCEEB asks that this data be released for public review. Furthermore, CCEEB notes that the Health Analyses document is not a standard health risk assessment (HRA); while this document includes an HRA, the risk management criteria applied in the document are not consistent with the 2015 ARB/CAPCOA *Risk Management Guidance for Stationary Sources of Air Toxics*. For example, the primary health-based conclusions are based on a novel approach for estimating health impacts, and not on the results of the HRA. CCEEB asks staff to elaborate on why the ARB/CAPCOA Risk Management Guidance was not used.
2. **The results of the Preliminary Health Analyses should be properly placed into context.** In ARB's 2015 Risk Management Guidance, ARB warns that changes to risk assessment methodologies have resulted in

increased calculated risk values, even though a facility has not changed its operations in a way that negatively affects public health.

“One significant area of focus is how best to communicate what impact these methodology changes will have on health risk estimates, what those new risk estimates mean, and how best to manage sources and programs in a reasonable and health protective manner. The procedures in the new OEHHA Manual will typically result in a higher estimated cancer risk from a facility even though they [the facility] use control technology and are actually maintaining or reducing its emissions. As a result, it is a challenge to communicate the new information in a way that ensures the public’s right to know but does not imply that the facility has changed its operations or emissions in a way that negatively affects public health.”¹

The Health Analyses document does not present this background information to help the public understand the implications of the calculated risk values.

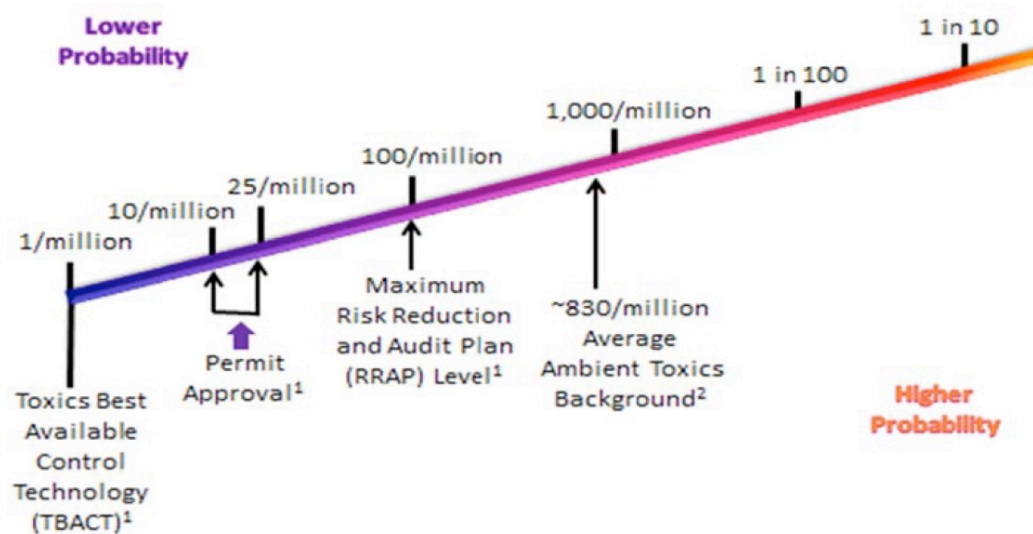
In contrast to the 2015 Risk Management Guidance, in the Executive Summary of the PRA document, ARB concludes that “Emissions from ocean-going vessels operating at berth and at anchor are a significant and growing contributor to community air pollution and the associated health impacts.” However, nowhere does ARB compare the emissions, or potential health impacts, attributable to ocean-going vessels (OGVs) at-berth with other sources of criteria air pollutants or toxic air contaminants that Californians are exposed to each day. For example, the PRA indicates that baseline (2016) maximum exposed individual incremental cancer risk (MEIR) attributable to ships at-berth is 62-in-a-million at the Ports of Los Angeles and Long Beach (POLA and POLB), and 22-in-a-million at the Richmond Complex (the Port of Richmond and the Chevron refinery berths). While these incremental risks apply to individuals living within a relatively small distance from these two port complexes, ARB estimates that the average individual living in California is exposed to an incremental cancer risk attributable to diesel particulate matter (DPM) of approximately 520-in-a-million, and an incremental risk of 830-in-a-million due to all toxic air contaminants.² CCEEB asks for a discussion of how ARB came to its conclusion that an incremental cancer risk of 22-in-a-million represents a “significant and growing” contributor to community air pollution within this context.

¹ *Risk Management Guidance for Stationary Sources of Air Toxics*, ARB and CAPCOA. July 23, 2015. pp. 2-3. <https://www.arb.ca.gov/toxics/rma/rmgssat.pdf>

² <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>. Accessed 2/5/2019. Also see 2015 *Risk Management Guidance*

Furthermore, as the following graphic (from ARB's 2015 Risk Management Guidance) shows, ARB recommends development of a risk reduction plan if calculated risk levels exceed 100-in-a-million. The PRA seems to stray from these guidelines, in that, in effect, it could impose a risk reduction plan to a *collection* of sources (such as a port complex) at much lower levels, when such a plan would not be required for an *individual* stationary source with the same calculated risk level.

Figure II-2: Health Risk – A Relative Perspective



3. **The assessment of reduced health outcomes, and associated monetized benefits should be revisited.** The PRA ascribes a statewide benefit of approximately \$1.4 billion to the reduced health outcomes attributable to the proposed regulatory program. 99.9 percent of this benefit is associated with avoided premature deaths, and 88 percent of the reduction in avoided premature deaths is associated with reductions in oxides of nitrogen (NO_x) emissions. These avoided premature deaths attributable to NO_x reductions are, in turn, attributed to the formation of particulate ammonium nitrate in a photochemical reaction that ARB acknowledges occurs well downwind of the emission source – and hence not in the communities nearest the ports, and only after the concentrations have been substantially reduced due to dispersion.

CCEEB requests that ARB provide additional information to explain how they determined the health benefits attributable to NO_x reductions from the rule. More specifically, ARB states “IPT results for NO_x were not multiplied by an

attenuation factor because ammonium nitrate forms downwind from the source. Hence, NO_x emissions are assumed to produce health impacts over a wide area extending several kilometers from the source.”³ This suggests that ARB attributes the health benefits of avoided premature mortality for NO_x emissions without regard to dispersion or ambient concentration – while for PM_{2.5} emissions, ARB took the opposite approach: “However, pollutants from vessels at berth are emitted tens of meters above ground and 1 km or more from residential neighborhoods, and are attenuated by loss and dispersion before reaching places where people live.” Since ARB is attributing the same health benefits to reductions in ambient PM_{2.5} concentrations as it does to ambient ammonium nitrate concentrations, the PRA should then include an attenuation factor for NO_x in its calculations. Due to the transport distances involved, one would logically expect the attenuation factor to be greater (numerically smaller) for NO_x than for direct PM_{2.5} emissions.

4. **Explain uncertainties in greater detail.** In Section III, Part F, on pages 46-48, ARB discusses the uncertainty of the HRA projections. ARB should examine this in more detail with the goal of quantifying in the report the probable magnitude of benefit variation the regulation may provide. It is unclear what confidence level the data is throughout the analyses, and how ARB has minimized the effects of compounding uncertainty when quantifying the benefit.
5. **Rationale for 2016 Baseline.** ARB’s calculations are based on a 2016 baseline year for all port complexes evaluated. CCEEB requests that ARB explain in the PRA document why the 2016 baseline was chosen relative to other years, including an assessment of 3-5 years of recent vessel activity, to ensure that the selection of the single year 2016 is consistent with a typical or average baseline of activity level. This is particularly important because ARB is using this baseline year to project cumulative benefits more than 10 years into the future.

Update to Inventory for Ocean-Going Vessels

1. **Information and data sources should allow stakeholders to validate growth assumptions.** CCEEB requests that ARB work with stakeholders to understand the data used to form the basis of the emissions inventory. The use of the IHS-Markit and Marine Exchange, which are private pay services, does not allow for peer review and comment. Additionally, the simplified, aggregated information provided in the OGV Update report does not accommodate the public review process. CCEEB understands that ARB

³ Preliminary Health Analyses, p. 51.

must protect data shared by ports or other stakeholders to validate assumptions, technology assessments, and cost effectiveness as business confidential information, but use of private pay data services does not allow for public review and hinders transparency.

2. Please explain how vessels were selected for inclusion in the inventory.

The OGV Update report indicates that only diesel motor ships were included in the inventory, but not steam ships. Since the principal health impacts discussed in the PRA document relate to DPM, PM_{2.5} and NOx emissions from auxiliary engines and boilers, we ask staff to explain why steam ships were excluded.

3. Emissions Inventory projections should be realistic and based on publicly available information.

CCEEB believes that some of the growth projections do not align to other analysis in separate but related ARB projections. The annual growth rates shown in Table 12 for various vessel types and regions range from 1.5 percent-per-year to 5.1 percent-per-year, and are applied out to calendar year 2050. As an example, the 4.6 percent-per-year growth rate shown for container ships in the San Francisco region suggests that there will be 4.6 times as many container ships calling in that region in 2050 as there were in 2016. However, there is no evidence that the infrastructure to support such an increase in container ship traffic is feasible or likely to occur.

Similarly, ARB's data suggest a 45 percent increase in tanker traffic in the San Francisco region by 2050. This value should be compared with ARB's forecast of fossil fuel use for mobile sources under its various programs to reduce the carbon content of transportation fuels and encourage the use of electricity for transportation sources. Specifically, the At-Berth analysis projects growth in port visits by tankers carrying crude oil for refining, yet in other programs, ARB predicts and even mandates a steady reduction in the demand for petroleum products.

CCEEB asks that staff explain the methodology used to define the growth rates for each of the vessel types described in the analysis. This information is needed to help stakeholders assess and validate the legitimacy of these factors, including how it was determined that the number of tankers are expected to increase while other ARB programs project decreases, and even mandate reductions in petroleum products. This is particularly the case for bulk oil, as the myriad of programs aimed at reducing fossil fuel consumption in California may affect bulk oil vessel activity at the ports. This seems at odds with assumptions being made in the At-Berth regulation. CCEEB suggests ensuring projections of fossil fuel consumption and imports are at least consistent with the goals in the 2017 Scoping Plan.

In addition, CCEEB requests that ARB provide the growth rates used for the Ports of Los Angeles and Long Beach in the same manner as those presented for the other regions of California.

- 4. Please re-review Tier 3 availability.** The OGV Update report states that “based on an analysis conducted by Starcrest for the Ports of LA/LB, the introduction of Tier 3 in the OGV inventory forecast has been delayed from 2030 to 2040.” That statement is not correct; the report cited by ARB indicates that Tier 3 OGVs are anticipated to start appearing in the fleet called at POLA/POLB as early as 2028, depending on the vessel category. Table 13 in ARB’s report is more consistent with dates shown in the Starcrest report. CCEEB requests that ARB confirm that it is using assumptions consistent with the Starcrest report, applied by vessel type, in its forecasts.

Technologically Feasible and Cost Effective Control Options

- 1. Control measures must be technologically feasible and cost effective.** State law requires that air pollution control regulations adopted by ARB be cost effective.⁴ CCEEB supports technologically feasible and cost effective emissions reduction programs and believes that the most successful rules provide clear pathways for compliance. However, the documents released by ARB to date do not present an assessment of the cost effectiveness of the proposed At-Berth regulation, or a discussion of the cost effectiveness of the proposed rule in comparison to the cost effectiveness of other rules adopted by ARB to achieve similar emission reduction goals.

The assessment of cost and cost effectiveness becomes more challenging when rules are meant to accelerate the deployment of advanced technologies (i.e., technologies that are still under development or not yet commercially viable). In these instances, control options must be based on comprehensive analysis with public review, since greater uncertainties will be in play. The At-Berth regulation faces these challenges.

Unfortunately, the targets set forth in the proposed At-Berth regulation were set using a top-down approach with little or no technological review done beforehand. Indeed, the air board adopted a 100 percent compliance goal at its March 23, 2017 meeting, directing staff, in effect, to go back and figure out how this could be done. CCEEB is concerned that this puts the “cart before the horse” and bypasses the important step of technological review.

⁴ See, e.g., H&SC 38561 (greenhouse gases), H&SC 40922 (criteria pollutants), and H&SC 44391.2 (toxic air contaminants).

2. More clarity is needed to help identify responsible parties. The rule concepts are not sufficiently clear about who the responsible parties are throughout implementation of the rule, particularly when compliance problems arise. Particularly troublesome are situations in which a vessel calling at a wharf is not equipped for shore power connections, although the wharf is capable; a vessel calling at a wharf is equipped for shore power but the wharf cannot provide shore power at the time the vessel berths; and when a berth operator has little or no control over the ships that call at the berth. CCEEB asks staff to work with stakeholders to provide more structure to the rule to help provide clarity.

Finally, CCEEB asks ARB to continue discussions with California ports and stakeholders to validate assumptions, technology assessments, and cost-effectiveness calculations used in ARB analyses. This applies to the health analyses, emissions inventory, and cost analyses, as well as the proposed control scenarios being explored by staff.

We appreciate the opportunity to provide these comments and look forward to engagement with staff. In the meantime, should you have any questions or wish to discuss our comments further, please contact me at janetw@cceeb.org or 415-512-7890 ext. 111.

Sincerely,



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cc: Bill Quinn, CCEEB
Kendra Daijogo, The Gualco Group, Inc. and CCEEB Air Project Manager
Devin Richards, CCEEB
CCEEB Air Project Members