



June 30, 2022

Nicole Light Densberger, Marine Strategies Section  
Elizabeth Melgoza, Marine Strategies Section  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814  
Via Electronic submittal

**RE: CARB's OGV At Berth Interim Evaluation Report**

Dear Ms. Densberger and Ms. Melgoza,

We would like to thank the California Air Resources Board for soliciting stakeholder input on the CARB's OGV At Berth Interim Evaluation Report.

Pacific Environment is a global environmental organization that protects communities and wildlife of the Pacific Rim. We support community leaders to fight climate change, protect the oceans, build just societies, and move away from fossil fuels toward a green economy. Pacific Environment is headquartered in California and has earned rare permanent consultative status at the International Maritime Organization (IMO), the United Nations' entity that sets international shipping law. We are co-founders and leaders of a burgeoning new global coalition of environmental, environmental justice, and ocean organizations working to rapidly accelerate the shipping industry's zero-emission transition on a 1.5C-aligned timeline.

**COVID impacts**

Diesel exhausts from ships carrying goods at ports are known to cause severe illnesses from aggravated asthma, lung cancer, heart disease and neurological disorders, and premature deaths. According to a recent study from the Harvard T.H. Chan School of Public Health, communities that have long exposure to fine particulate air pollution such as PM 2.5 are linked to substantially higher death rates from the coronavirus.<sup>1</sup>

CARB's own [emissions analysis](#) report found that fossil fuel pollution from 2021 cargo ship congestion at San Pedro ports has caused an increase in NOx emissions equivalent to 5.8 million passenger cars in South Coast, and an increase in particulate matter (PM) emissions equivalent to \*100,000 big rig trucks (or "Class 8 diesel trucks") \*per day\*. **This highlights the need to take**

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<sup>1</sup> Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. <https://projects.iq.harvard.edu/covid-pm>

**all regulatory actions possible to regulate this industry, protect public health and combat climate change.**

**Feasibility of control requirements for bulk and general cargo vessels**

We urge CARB to add bulk carrier vessels and general cargo vessels into existing At-Berth emissions regulations. While bulk carrier vessels account for only 9% and 7% of DPM and NOx Ocean Going Vessels (OGVs) [emissions in California](#), respectively, these vessels comprise the majority of ship calls to smaller ports, which are often located adjacent to communities that already bear the brunt of air pollution.

The Ports of Stockton and Richmond, for example, see much of their annual throughput in dry and liquid bulk, which is transported by bulk carrier ships. At the Port of Stockton, over 50% of [shipping throughput in 2020](#) comprised of dry and liquid bulk cargo. Portside communities in Stockton and Richmond, furthermore, reside in CalEnviroScreen 92<sup>nd</sup> and 98<sup>th</sup> percentiles for air pollution burden in the state, respectively. It is critical for CARB to recognize that, by excluding bulk carrier vessels from At-Berth requirements, the state is failing to address the major DPM, NOx, and PM pollution concerns of some of California’s most pollution-burdened communities.

There are a number of zero emission bulk and general cargo vessels on the water or currently being developed.

2017	Newbuild	TBN	Bulk carriers
2020	Retrofit	Paolo Topic	Bulk carriers
2017	Newbuild	Invotis IX	Bulk carriers
2022	Newbuild	Misje Verde	Bulk carriers
2022	Newbuild	Misje Viola	Bulk carriers
2022	Newbuild	Misje Vita	Bulk carriers
2022	Newbuild	unknown	Bulk carriers
2022	Newbuild	Aasfjell	Bulk carriers
2022	Newbuild	Aasfoss	Bulk carriers
2020	Newbuild	Invotis 10	Bulk carriers
2022	Newbuild	TBA	Bulk carriers
2016	Retrofit	Star Laguna	General cargo ships
		Hagland	
2019	Retrofit	Captain	General cargo ships

*source: DNV Data on Battery operated ships, accessed 1.26.22*

**Feasibility of vessels at anchor**

The electrification for marine vessels has now been considered as a proven technology contributing to a decarbonized sustainable maritime sector. We are witnessing a fast-evolving climate friendly global technological shift that requires more integrated approaches entailing

alternative fuels, wind and solar energy, renewable hydrogen, fuel-cell technologies, zero emission dockyards many more to overcome the evidence based expected ecological catastrophe.

While ocean going vessels may not make the transatlantic trip fully zero emission (yet), hybrid ocean going vessels can switch to battery technology or green hydrogen on a dual fuel engine when they are at anchor.

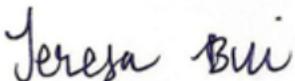
A 2013 study by the Sandia National Lab shows that power barge for ships at anchor is technically feasible<sup>2</sup>. In addition, there are companies that are developing battery-swapping technology that could be applicable for ships at anchor. The International Council on Clean Transportation will be coming out with a study on zero at berth/at anchor technology options in the fall. For all these reasons, we urge CARB to expand the existing At-Berth emissions to include At Anchor.

### **Tanker vessels**

We urge CARB to accelerate the implementation of tanker vessels to take effect in 2024, not the 2025 and 2027 implementation schedule, given the outsize impact it has in Richmond, Stockton and Long Beach ports. According to CARB's own data, tanker represents 50% of statewide at berth PM 2.5 emissions in 2020 and 70% of visits to Richmond Port. We are starting to see the development of zero emission tankers: Asahi Tanker announced that it would build [two of the world's first zero-emission electric propulsion tankers](#)<sup>3</sup>, that are expected to be completed consecutively from March 2022 to March 2023. As we wait for that market to mature, in the meantime, tankers should be forced to use shorepower by 2024 to achieve earlier health and environmental benefits.

Thank you for your consideration of these comments.

Sincerely,



Teresa Bui  
State Climate Policy Director

cc:

Angela Csondes, Manager, Marine Strategies Section, CARB  
Bonnie Soriano, Chief, Freight Activity Branch, CARB

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<sup>2</sup> Vessel Cold-Ironing Using a Barge Mounted PEM Fuel Cell. Sandia National Lab.

<sup>3</sup> [The World's First Zero-Emission Electric Tankers In Japan \(intelligentliving.co\)](#)