

Ship It Zero Report Card Methodology

Retail and ocean shipping companies were evaluated across three areas, in line with the Ship It Zero campaign demands: End Port Pollution Now, Abandon Dirty Ships, and Put Zero at the Helm. These capture companies' efforts to reduce the health-harming impacts of ship and port operations on neighborhoods; efforts to immediately move away from the dirtiest shipping fuels and practices; and steps taken to catalyze the expansion of zero emission vessel infrastructure and newbuilds.

Each of the three categories considered (End Port Pollution Now, Abandon Dirty Ships, and Put Zero at the Helm) were broken down into four criteria areas for consideration. These were: Commitments; Implementation; Advocacy; and Transparency.

Companies were given a grade for each category, and an overall grade for their performance across all three.

- *Retailers*
 - Researchers reviewed retailers' Corporate Social Responsibility reports, Environmental, Social, and Governance reports, Climate Disclosure Project reports, and press releases to track decarbonization and air pollution reduction commitments and emissions disclosures.

Retailers were given credit for Scope 1, 2 & 3 targets. Stronger commitments received higher scores. The baseline year, target dates, benchmarks, and absolute emissions reduction targets across each scope were considered in awarding climate commitment points. Additional specific credit was awarded for transport- and shipping-specific commitments, disclosures, and initiatives. Extra weight was given to companies joining industry groups entailing distinct shipping decarbonization commitments.

Points were deducted for either upstream transportation emissions increases or a failure to disclose transportation emissions. Points were also deducted for support for or use of liquefied natural gas (LNG) and compressed natural gas (CNG).¹ Finally, points were deducted for reliance on carbon offsets.

¹ Liquefied natural gas (LNG) and compressed natural gas (CNG) are fossil fuels that are primarily methane, a potent greenhouse gas that has over 80 times more heat-trapping power on a 20-year timescale compared to CO₂. A 2020 comparative analysis showed that [LNG powered ocean vessels emit 70-82% more climate-disrupting lifecycle greenhouse gases](#) than business-as-usual.

Non-fossil methane gas, so-called "biomethane" or "renewable natural gas" is at times touted by the fossil fuel and shipping industries as a future "clean" maritime fuel. However, once produced, it is still methane and presents the same climate-warming emissions profile in ship engines as its fossil fuel counterpart.

Companies that reported absolute transportation emission reductions were given extra credit.

Retail brands were given credit for membership in business-led decarbonization initiatives, with the greatest number of points awarded to those that had joined more ambitious maritime-specific efforts. These included Cargo Owners for Zero Emission Vessels (coZEV) and the Zero Emission Maritime Buyers Alliance (ZEMBA).

Retailers were sent an initial questionnaire and invited to respond with information that may not be readily available for inclusion in the report card. Companies were again invited to weigh in on their scores after the research of publicly available sources and review of any additional information the company had provided was complete. Brands had an opportunity to review their proposed grade and were given the opportunity to respond.

It is important to note that this 2023 report card weighted commitments from retailers more heavily than the campaign otherwise would. This was due to a recognition that maritime climate and air pollution are new issue areas for many retail companies. Future report cards will place greater weight on implementation and advocacy.

- *Carriers*

- Researchers reviewed carriers' Corporate Social Responsibility reports, Environmental, Social, and Governance reports, and press releases to track decarbonization and air pollution reduction commitments and emissions disclosures.

Carriers had more specific benchmarks to meet to receive credit because of their greater relative power to advance shipping decarbonization and port air pollution reduction initiatives. Companies were given credit for Scope 1, 2 & 3 targets. Stronger commitments received higher scores. The baseline year, target dates,

The shipping and fossil fuel industries often point to lower emissions of some air pollutants (NO_x, SO_x, and particulate matter) as benefits of the use of LNG. While these particular pollutants may be reduced, they are not eliminated. Further, [the methane releases are a precursor to ground level ozone when the gas reacts with sunlight and other atmospheric gases, contributing to smog and causing damage to the human respiratory system](#). Children are the most vulnerable to its health impacts.

While LNG is primarily methane (CH₄), the concentrations vary from between 70-99% depending on the feedstock. Other hydrocarbons commonly found in LNG are ethane, butane, and propane. [Butane and propane are both categorized as Very Volatile Organic Compounds \(VVOOC\)](#) by the United States Environmental Protection Agency, readily reacting with sunlight and nitrogen oxides (NO_x) to form [ground level ozone](#).

In addition, the [incomplete combustion of both methane and propane have been shown to produce benzene, carbon monoxide, and formaldehyde](#). While these pollutants are all hazardous to human health, benzene raises significant concerns as it is a known human carcinogen. There is no known safe level for human exposure to benzene.

benchmarks, and absolute emissions reduction targets across each scope were considered in awarding climate commitment points.

Container shipping companies were also given credit for joining business and government decarbonization initiatives, such as the First Mover's Coalition or the Getting to Zero coalition.

Carriers were given extra credit for absolute emissions reductions. Companies were also credited for green fuel contracts and zero emission vessel (ZEV) newbuild orders. Ocean carriers were awarded points for investments in port electrification, shore power and efficiency retrofits for existing vessels, and benchmarks for achieving a 100% shore power-ready fleet.

Efforts to provide lower-carbon ocean shipping for customers were also rewarded with points.

Points were deducted for emissions increases and reliance on false solutions like liquefied natural gas (LNG), and Exhaust Gas Cleaning Systems² (i.e., scrubbers), and carbon offsets.

Carriers were credited for regulatory and policy advocacy for increased levels of decarbonization ambition for the ocean shipping sector. In addition, companies were credited for partnerships with ports to reduce emissions and to support the

² Scrubbers are installed on vessels to reduce sulfur air emissions resulting from the use of high-sulfur fuel oil. Most vessels are equipped with scrubbers in order to allow ship operators to continue to use one of the dirtiest fossil fuels on earth, heavy fuel oil (HFO).

This is a thick, tar-like waste product from the world's oil refineries. It would need to be disposed of as hazardous waste on land, but ships may use it in international waters as long as there is a scrubber installed. Thus, the world's international shipping fleet has been operating as effectively mobile hazardous waste incinerators for the world's oil refiners for decades. HFO is not only high in sulfur, but also in other dangerous contaminants such as heavy metals.

Scrubbers use seawater to "wash" sulfur from the exhaust plume. When sulfur reacts with water, it forms sulfuric acid (this is the reason sulfur oxides air emissions cause acid rain). The scrubber wastewater is acidic, toxin-laden, thermal pollution. It is an entirely voluntary wastestream, as ship operators can choose cleaner, low-sulfur distillate fuel which comply with air emission standards and do not produce water pollution.

Scrubbers either continuously discharge the wastewater directly into the oceans (open-loop) or can hold most of the wastewater onboard (closed-loop). Closed loop systems still discharge waste, referred to as bleed-off. Bleed-off is smaller in volume than the wastewater from open loop operation, but more highly concentrated in toxins. Closed loop systems can be operated in zero-discharge mode, but there is little evidence that ship operators choose this option unless required by law.

The hybrid systems can operate in either closed-loop or open-loop mode. These are more flexible, allowing the company to comply as increasing numbers of countries and ports around the world ban the discharge of scrubber wastes. However, holding wastes onboard and offloading for treatment onshore is expensive and would require massive holding tanks onboard. It is thus reasonable to assume that hybrid systems are primarily operated in open-loop mode.

The use of scrubbers also requires energy, increasing fuel demand and potentially greenhouse gas emissions. The California Air Resources Board also found that the use of scrubbers increases the amount of particulate matter emitted by vessels, after extensively studying ships operating the systems as compared to ships using lower sulfur fuels. It is for this reason the state, also the 5th largest economy in the world, [disallowed the use of scrubbers as an air pollution compliance mechanism](#) within 24 nautical miles of its coastline. It has also mandated the use of [cleaner, low-sulfur marine fuels](#).

buildout of ZEV infrastructure as well as public support for green shipping corridors.

Carriers were sent an initial questionnaire and invited to respond with information that may not be readily available for inclusion in the report card. Companies were again invited to weigh in on their scores after the research of publicly available sources and review of any additional information the company had provided was complete. Carriers had an opportunity to review their proposed grade and were given the opportunity to respond.