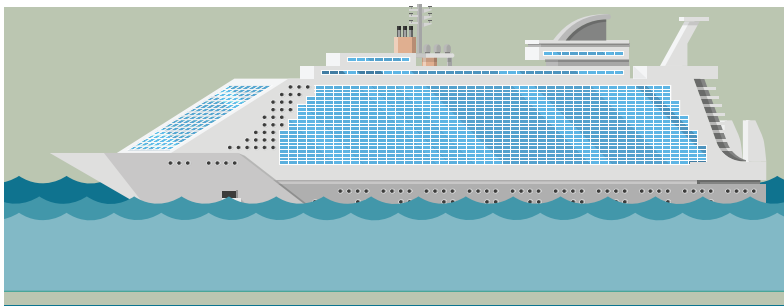
ENVIRONMENTAL SUSTAINABILITY

Although cruise ships comprise less than 1% of the global maritime community, the cruise industry is at the forefront of the development of innovative technologies and practices to reduce emissions and protect the environment.

- **The cruise industry has widely adopted a number of technologies and practices that significantly reduce air emissions and environmental impact, such as:**
  - **Exhaust Gas Cleaning Systems (EGCS),** which process emissions from ships to virtually strip sulfur content out of exhaust fumes and significantly reduce particulate matter
  - **Liquified Natural Gas (LNG) as fuel for primary propulsion,** which has virtually zero sulfur emissions
  - **Shoreside power,** enabling ships to "plug in" when available at ports of call
  - **Special paint coatings for ship hulls,** which reduce drag and improve fuel efficiency
  - **Advanced wastewater treatment systems,** which utilize advanced treatment technologies that rival the best shoreside treatment plants
  - **Onboard recycling practices** that are superior to those of many cities around the world.
- **CLIA ocean-going cruise lines meet—and often exceed—stringent national and international environmental laws and regulations.**
  - All CLIA cruise lines members are required to follow more stringent air emissions requirements when operating in Emission Control Areas (ECAs) in and around North America and the Caribbean, the North Sea and the Baltic Sea.
  - When ships operate outside of ECAs, CLIA cruise lines must meet the 2020 Global Sulfur Limit, commonly referred to as IMO 2020, which reduces the amount of allowable sulfur content in ship emissions from 3.5% to 0.5% (an 85.7% reduction), which the IMO says should have major health and environmental benefits for the world.
  - CLIA cruise line members are looking well beyond IMO 2020 by committing significant resources and funding to sail into a cleaner future.
  - As a condition of membership within CLIA, oceangoing cruise line members must agree to CLIA's Environmental Policy, which is incorporated into each ship's Safety Management System (SMS) and, accordingly, subject to third-party and internal auditing.
  - CLIA ocean-going cruise lines continue to invest in research and development to find new technologies that do not yet exist today in order to reduce carbon emissions across the global maritime fleet and meet the IMO's target of zero emissions.



The cruise industry is a pioneer in maritime environmental protection and continues to make tremendous progress towards reducing its environmental impact.

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Cruise ships are subject to a robust system of oversight and inspection to ensure compliance and transparency with environmental policies.

- **CLIA ocean-going cruise lines are committed to reducing carbon emissions across the global maritime fleet, and, ultimately, achieve the IMO's target of zero emissions.**
  - Worldwide, the cruise industry has invested more than $26 billion in ships with new technologies and cleaner fuels to reduce air emissions and achieve greater efficiency.
  - The cruise industry was the first maritime sector to publicly commit, in December 2018, to reduce the rate of carbon emissions by 40% by 2030 compared to 2008.
  - CLIA and its member cruise lines voluntarily joined other maritime associations in December 2019 to initiate a proposal to the IMO for the establishment of the world's first collaborative shipping Greenhouse R&D Board to generate an estimated $5 billion over a 10-year period to pursue zero-carbon fuels and propulsion technologies that do not yet exist.
- **Cruise ships are subject to a robust system of oversight and inspection to ensure compliance and transparency with environmental policies.**
  - Each cruise ship receives dozens of inspections each year from the ports they visit, countries where they are registered and other independent agencies— including checks of equipment and practices for waste management and emission reduction.
  - In fact, cruise ships are among the most scrutinized vessels at sea. With oversight beginning at design and construction, the International Maritime Organization (IMO), flag and port state authorities, and classification societies provide strict safety standards and oversight throughout a ship's operations.
  - In U.S. waters, the Environmental Protection Agency (EPA) and the U.S. Coast Guard enforce rigorous requirements on air, water, power, and waste, including provisions of the Clean Water Act.
  - The cruise industry also participates in International Maritime Organization (IMO) working groups and committees to develop global regulations to protect the environment.
  - Environmental performance information is widely available on government websites, and CLIA member cruise lines routinely post online sustainability reports with environmental performance and goals.

OXFORD ECONOMICS

CLIA

AUGUST 2020 CLIA HIGHLIGHTS

ENVIRONMENTAL COMMITMENT, INNOVATION AND RESULTS OF THE CRUISE INDUSTRY

$23.5 BILLION
Invested in new ships with energy efficiency technologies and cleaner fuels

40% TARGET
Reduction in rate of carbon emissions by 2030 (compared to 2008)

ADVANCED WASTEWATER TREATMENT SYSTEMS (AWTS)

AWTS systems utilize advanced tertiary-level treatment to generate effluent discharges often equivalent to best shoreside treatment plants and, consistent with CUA policy, well beyond international requirements.

99% NEW CAPACITY
on order specified to have these systems (bringing global capacity to 78.5%)

70% GLOBAL CAPACITY
is served by advanced wastewater systems (5% increase in global capacity over 2019)

LIQUIFIED NATURAL GAS (LNG)

LNG has virtually zero sulfur emissions, a 95% to 100% reduction in particulate emissions, an 85% reduction in NOx emissions, and up to 20% reduction in greenhouse gas emissions.

25 LNG-POWERED
ships currently ordered or under construction

49% NEW CAPACITY
committed to rely on LNG for primary propulsion (51% increase in future global capacity over 2018)

EXHAUST GAS CLEANING SYSTEMS (EGCS)

EGCS reduces sulfur oxide levels by as much as 98%, a typical total particulate matter reduction of 50% or more, including elemental and organic carbon and black carbon, and nitrogen oxides by up to 12%.

69% GLOBAL CAPACITY
utilizes EGCS to meet or exceed air emissions requirements (up 25% over 2018)

96% NEW CAPACITY
not relying on LNG will have EGCS installed (up 21% over 2019)

SHORE-SIDE POWER CAPABILITY

Cruise ships may operate on shore-side electricity at 14 ports worldwide, reducing overall emissions while at port.

32% GLOBAL CAPACITY
are fitted to operate on shore-side electricity (up 13% over 2019)

25% TO BE RETROFITTED
with shore-side electricity systems (capacity up 47% over 2019)

50% NEW SHIPS
on order will be fitted with shore-side electricity systems (27% increase over 2019)