

PIONEERING LIQUEFIED NATURAL GAS (LNG)

Reflecting on our commitment to sustainability, we are continuing to pioneer the use of liquefied natural gas (LNG), the world's cleanest fossil fuel, and are expanding our LNG investment.

We began the implementation of our LNG vision by using LNG in port. In 2015, *AIDAsol* was the first cruise ship in the world to be supplied with power by an LNG Hybrid barge while in Hamburg, Germany. The LNG Hybrid Barge, a unique pilot project with Becker Marine Systems, was designed, constructed and commissioned in three years. Since then, we have expanded our LNG capabilities to supply LNG directly to two ships, each with a dual-fuel powered engine (*AIDAprima* and *AIDAperla*). These ships use LNG while in port drawing fuel directly from trucks alongside the ship.

In 2018, we made history with the launch of *AIDAnova*, the first cruise ship in the world powered by LNG both at sea and in port. Leading the cruise industry's use of LNG to power cruise ships, we have a further 10 sister vessels due for delivery between 2019 and 2025 for Costa Cruises, AIDA Cruises, P&O Cruises UK, Carnival Cruise Line and Princess Cruises.

FIRST CRUISE SHIP POWERED BY LNG AT SEA AND IN PORT

We began construction on *AIDAnova* in 2016 and the history-making ship joined the fleet in late 2018. The largest cruise ship ever built at a German shipyard, *AIDAnova* also marks an exciting new generation of "green" cruise ships that will be powered at sea and in port by LNG. In December 2018, *AIDAnova* made its maiden call in the Canary Islands at the Santa Cruz de Tenerife Terminal, a concession operated by Carnival Corporation that can accommodate next-generation "green" cruise ships powered by LNG. The first LNG supply for *AIDAnova* at the port took place upon its arrival and was made possible through our partnership with Shell.

SWITCHING FROM MARINE DIESEL TO LNG

0
Sulfur Dioxide Emissions

95-100%
Reduction in Particulate Matter

85%
Reduction in Nitrogen Oxides

Up to 20%
Reduction in Carbon Emissions



STRENGTHENING OUR LNG SUPPLY CHAIN

In 2017, we expanded our partnership with Shell to fuel North America's first next-generation LNG-powered cruise ships - the first of which, the *Mardi Gras*, will arrive in October 2020. As part of the agreement, the two ships, built with a next-generation "green cruising" ship design, will be fueled through Shell's Partner Quality LNG transport (Q-LNG) Bunker Barge (LBB) - a project that is part of Shell's strategic plan to develop a global LNG bunkering network. The ocean-going LBB, which is designed to support growing cruise line demand for LNG as a marine fuel, will be the first of its kind in the U.S. and will allow these ships to refuel with LNG at ports along the southern U.S. East Coast.

We are proud to be on the forefront of advancing LNG as a fuel source for the cruise industry. One of the keys to establishing LNG as a standard for powering cruise ships is building out an extensive, safe and reliable infrastructure across the globe for this clean burning fossil fuel. We are looking forward to working closely with Shell as they help to bring LNG to North America in what we hope will be the first step in building a strong foundation for the future of LNG fuel supply for cruise ships in the region.

EXPANDING OUR LNG SHIP ORDERS TO 2025

Looking to 2019, we have 10 next-generation cruise ships on order that will be the first in the industry to be powered by LNG at sea and in port. We began construction on *Costa Smeralda* in 2017. The new Costa Cruises ship will be the brand's first ship powered by LNG and is expected to join the fleet in late 2019. *Costa Smeralda* will be the world's first LNG-powered ship to be broadly marketed to consumers from multiple countries, including Italy, France, Spain, Germany and Switzerland. A second Costa LNG ship is scheduled for delivery in 2021. P&O Cruises UK will launch *Iona* in 2020 as the brand's first LNG ship. *Iona* will also debut as the largest cruise ship ever built for the British market. P&O's second LNG ship is scheduled for delivery in 2022. Carnival Cruise Line's *Mardi Gras* will debut in 2020 as the first cruise ship in North America powered by LNG and will be the largest Carnival Cruise Line ship ever constructed. The brand's second LNG ship is scheduled for delivery in 2022. Our Princess Cruises brand also has two LNG ships on order with expected delivery dates in 2023 and 2025. In addition to the new *AIDAnova*, our AIDA Cruises brand has two additional LNG ships on order due in 2021 and 2023.

LNG PROGRAM TIMELINE

