



PIONEERING LIQUEFIED NATURAL GAS

The company has **10 LNG powered ships** in its fleet and **six more** on order for delivery through 2033.

SWITCHING FROM MARINE DIESEL TO LNG ↓

Up to **20%**
reduction in tank-to-waste
carbon emissions

95-100%
reduction in
particulate matter

85%
reduction in
nitrogen oxides

0
sulfur
dioxides

LNG PROGRAM TIMELINE

2018 AIDAnova

1st LNG powered ship for the company, 1st for AIDA

2019 Costa Smeralda

2nd LNG powered ship for the company, 1st for Costa Cruises

2020 IONA:

3rd LNG powered ship for the company, 1st for P&O Cruises

2020 Mardi Gras

4th LNG powered ship for the company, 1st for Carnival Cruise Line

2021 AIDAcosma

5th LNG powered ship for the company, 2nd for AIDA

2021 Costa Toscana:

6th LNG powered ship for the company, 2nd for Costa

2022 Carnival Celebration

7th LNG powered ship for the company, 2nd for Carnival Cruise Line

2022 Arvia:

8th LNG powered ship for the company, 2nd for P&O Cruises

2023 Carnival Jubilee

9th LNG powered ship for the company, 3rd for Carnival Cruise Line

2024 Sun Princess

10th LNG powered ship for the company, 1st for Princess Cruises

2025 Star Princess:

11th LNG powered ship for the company, 2nd for Princess Cruises

2027 Carnival Cruise Line

12th LNG powered ship for the company, 4th for Carnival Cruise Line

2028 Carnival Cruise Line

13th LNG powered ship for the company, 5th for Carnival Cruise Line

2029 Carnival Cruise Line:

14th LNG powered ship for the company, 6th for Carnival Cruise Line

2031 Carnival Cruise Line

15th LNG powered ship for the company, 7th for Carnival Cruise Line

2033 Carnival Cruise Line

16th LNG powered ship for the company, 8th for Carnival Cruise Line

WHAT IS LNG?

Liquefied Natural Gas, or LNG, is the world's cleanest burning fossil fuel. LNG not only burns more cleanly than traditional marine fuel, but it is also much less impactful to the atmosphere. As the name suggests, it is made from natural gas that has been cleaned, cooled and compressed until it becomes a liquid (at -259°F). This makes it easy to store in tanks and to carry as our fuel-source for generating power and propulsion. Due to the way it is liquefied and stored, it only burns in the right conditions as fuel when we want it to.

LNG is a fossil fuel and generates carbon emissions. Its direct CO2 emissions are lower than those of conventional fuels and emits effectively zero sulfur oxides, reducing nitrogen oxides by 85% and particulate matter by 95%-100%. The types of engines that we use are subject to small amounts of methane slip (the passage of un-combusted methane through the engine). We are working closely with our engine manufacturers and other technology providers to further mitigate methane slip and have recently joined the Methane Abatement in Maritime (MAM) Innovation Initiative, where we will partner with other major maritime players to seek solutions for this challenge. [Click here to learn more.](#)

BRINGING LNG TO NORTH AMERICA

With its arrival in Port Canaveral in 2020, *Mardi Gras* became the first cruise ship in North America to be powered by LNG. Carnival Corporation & plc has worked closely with the Meyer Turku Shipyard in Finland, its energy and technology partner, Shell, the team at Port Canaveral and a host of other parties. Facilities at Port Miami to support LNG fuel operations were finalized in 2022 to welcome *Celebration*.