CHANTIERS DE L'ATLANTIQUE

MSC

PRESS RELEASE

SUSTAINABLE CRUISING: THE CRUISE DIVISION OF MSC GROUP AND CHANTIERS DE L'ATLANTIQUE MARK A MAJOR STEP FORWARD WITH THE DELIVERY OF MSC WORLD EUROPA

- ***Delivery ceremony of MSC Cruises' newest flagship took place today at Chantiers de l'Atlantique in Saint-Nazaire;***
- ***MSC World Europa represents the most environmentally high-performing cruise ship to date, thanks to a range of technologies and solutions that minimise her impact on the air and marine environment;***
- ***Vessel also incorporates fuel cell technology that has the potential to deliver significant CO_2 emission reductions;***
- ***Today the two Companies also cut the first steel and named the second World Class ship, MSC World America, destined for the North American market when the ship comes into service.***

Saint-Nazaire, 24 October 2022 – The Cruise Division of MSC Group and Chantiers de l'Atlantique celebrated today the delivery of *MSC World Europa*, the world's largest LNG-powered cruise ship and one of the first to incorporate fuel cell technology. The ceremony marked the next step in a long-term and successful partnership between the two companies, which has resulted in the building of the most innovative and environmentally advanced cruise ship to date for the MSC Cruises fleet. On top of immediate ground-breaking advances in terms of reduction of emissions and energy efficiency, *MSC World Europa* also paves the way towards the uptake of carbon-neutral synthetic and other alternative fuels as soon as they are available at scale.

A joint contribution to the future of cruising

MSC World Europa is the first from the trail-blazing World Class ships from MSC Cruises. She is an ultramodern urban metropolis at sea that represents the future of cruising and offers a world of different experiences pushing the boundaries of what is possible at sea - setting a new standard for the cruise industry.

Pierfrancesco Vago, Executive Chairman of the Cruise Division of MSC Group, said: "*We are proud to welcome to our fleet MSC World Europa, our 20th ship and the first to be LNG-powered. This groundbreaking vessel represents the next phase in our journey toward net zero and sustainable cruising and a symbol of our unwavering commitment to both.*

"MSC World Europa represents a major step forward for our Cruise Division, the entire MSC Group, and our industry, with a range of unprecedented innovations in terms of environmental and marine technologies, design and guest-centric features. This is the result of more than four years of work between us, builders Chantiers de l'Atlantique and numerous leading providers of next-generation environmental and maritime technologies and solutions as well as many thousands of hours of training for those onboard and at ports."

Mr Vago concluded: "Now more than ever we need closer cooperation from suppliers, Governments and others to complement our continued investments and take further steps towards the zero emissions future we all desire. The innovative technologies we create here to use on our vessels can benefit all of society not just the cruise industry or the shipping sector overall."

Laurent Castaing, General Manager of Chantiers de l'Atlantique, said: "*We have reached a new stage in the cruise industry with MSC World Europa, the largest ship ever built for a European shipowner. She is equipped with all the latest technologies to offer the passengers an unprecedented cruising experience. From a technological standpoint MSC World Europa, which is equipped with a Liquefied Natural Gas (LNG) propulsion system, present a new level of performance and efficiency of the cruise industry. This represents a major milestone in minimizing emissions as MSC World Europa is the least emitting ship of the entire cruise industry*[1]."

The first cruise ship to feature fuel cell technology powered by LNG

MSC World Europa is the world's first contemporary cruise ship to feature brand new solid oxide fuel cell (SOFC) technology powered by liquefied natural gas (LNG). The ship will include a 150-kilowatt SOFC demonstrator that will use LNG to produce electricity and heat on board in a highly efficient way by means of an electrochemical reaction. It will be a testbed to accelerate the development of fuel cell technology for contemporary cruise ships and offers a potential to enable hybrid propulsion solutions in the future.

"We anticipate SOFC will reduce emissions of greenhouse gases substantially compared with conventional LNG engine without producing emissions of nitrogen oxides, sulphur oxides or fine particles. It also has the advantage of not only being compatible with LNG, but also with low and zero carbon fuels such as green methanol, ammonia, and hydrogen. We could also in the future transition to synthetic LNG or other alternative non-carbon fuels," said Linden Coppell, Vice President of Sustainability & ESG at MSC Cruises.

LNG: a transitional fuel and the cleanest currently available at scale

"We chose LNG for the very clear reason that it is the cleanest marine fuel currently available at scale, a transitional fuel as we look ahead to source and use synthetic LNG or other alternative non-carbon fuels as soon as they become available at scale", said Pierfrancesco Vago.

Compared to standard marine fuels, LNG nearly eliminates air pollutant emissions, including sulphur oxides and fine particles, greatly reduces nitrogen oxides, and already achieves a CO_2 reduction of up to 25%. LNG will also enable the development of low-carbon fuels and solutions such as green hydrogen, synthetic-LNG, and fuel cells.

Energy efficiency at its core

In partnership with the shipyard, *MSC World Europa* has been designed with an innovative hull shape to minimise resistance through the water.
MSC World Europa also incorporates a wide range of equipment to optimise energy use throughout the ship. These include smart ventilation and advanced air conditioning systems, with automated energy recovery loops, allowing effective distribution of heat and cold across the ship. The ship uses LED lighting throughout the ship, controlled by smart management systems to further enhance the energy saving profile.

It will also be fitted with enhanced automatic data collection systems for remote energy monitoring and advanced analysis, allowing real-time shoreside support to optimise operational efficiency onboard.

[1] Based on EEDI index in grams of CO_2 per nautical miles and gross tonnage.

These efficiency advances, and the use of LNG, will enable an operational performance far higher that the IMO-required energy design criteria for new ships. *MSC World Europa* is designed to perform 47% better than its Energy Efficiency Design Index (EEDI) required by regulation.

Advanced water treatment and waste management systems, and other innovative features

MSC World Europa is equipped with an advanced wastewater treatment system (AWTS) that meets the world's highest regulatory requirements, including the so-called Baltic standard. It treats all wastewater produced onboard to close to tap water standards. The ship also includes a state-of-the-art ballast water treatment system that prevents the introduction of invasive species in the marine environment through ballast water discharges, in compliance with IMO's Ballast Water Management Convention.

"We have an entire team of crew dedicated to implement strict waste management protocols which separate all wastes into seven distinct types, for example, glass, aluminum and paper, with specialised equipment to crush or bundle these waste types in the ship's waste management facility," said Linden Coppell.

In addition, *MSC World Europa* features a selective catalytic reduction (SCR) system that reduces NOx emissions by 90% when LNG is not available, and the ship must run on marine gas oil. As LNG fuel achieves a similar reduction, *MSC World Europa* will always be ready to meet the International Maritime Organization's (IMO's) Tier III NOx emissions standards. Like all MSC Cruises' new builds, the ship is fitted with shore power capability, which allows for us to minimise engine use at ports where the required infrastructure is available.

MSC World Europa's hull and engine room have been designed to minimise acoustic underwater sound impact, reducing the potential impact on marine mammals in the surrounding waters.

Next-generation cruise experience

Boasting future-proof marine and onboard hospitality technologies, *MSC World Europa* will redefine the cruise experience with a variety of never-before-seen concepts and creative areas unlike anything at sea today. The ground-breaking design features a Y-shaped aft structure that leads to the impressive 104-metre-long half-open half-covered Europa Promenade with breath-taking ocean views. Brand new balcony cabins overlook the stunning promenade, which features a striking architectural centrepiece in the form of *The Venom Drop @ The Spiral*, an 11-deck-high slide, the longest at sea.

MSC World Europa's 'firsts' include a micro-brewery, gin bar, healthy juice bar, coffee emporium and tea-house. The ship has 13 different dining options including two new specialty restaurants, La Pescaderia that will offer fresh seafood and Chef's Garden Kitchen will dish up seasonal farm-to-ocean cooking.

Steel cutting ceremony of MSC World America

The name of the second World Class ship was revealed today during the steel cutting ceremony and MSC Cruises announced that MSC World America is destined for North America when she comes into service in 2025. This is further proof of the line's commitment to deploy its newest ships to this important cruise market and to provide U.S guests with a ship and guest experience that is tailored to them. MSC World America will become the fourth new flagship to be deployed in this region.

ENDS

MSC World Europa's features and environmental technologies:

Key figures:

- Gross Tonnage – 215,863
- Length – 333.3m
- Width – 47m
- Height – 68m
- Passenger cabins – 2,626
- Passenger Capacity – 6,762

Engines and fuels:

- 5 Wärtsilä 14V 46DF engines dual-fuel engines, that can run on liquefied natural gas (LNG) and on low-sulphur marine gasoil (MGO)
- 150-kW solid oxide fuel cell demonstrator

Air Emissions:

- Selective catalytic reduction system that reduces NOx emissions by 90% when the ship runs on MGO (LNG offers a similar NOx reduction); MSC World Europa is capable of meeting IMO's Tier III standards regardless of the fuel it uses
- Shore-to-ship power connectivity, allowing the ship to switch off engines at ports where shore-to-ship power infrastructure is available

Wastewater treatment:

- Advanced wastewater treatment system complying with the most stringent standards on IMO's MEPC 227(64) Resolution (the so-called Baltic Standard)
- Ballast water treatment system with UV treatment to prevent the introduction of invasive species in the marine environment through ballast water discharges, in compliance with IMO's Ballast Water Management Convention

Underwater radiated noise management system with hull and engine room designs that minimises acoustic sound impact, reducing their potential effects on marine fauna, most particularly on marine mammals in the surrounding waters.

Energy Efficiency: All MSC Cruises' newbuilds incorporate a wide range of energy efficient equipment that help reduce and optimise engine use. These include smart ventilation and advanced air conditioning systems with automated energy recovery loops that redistribute heat and cold to reduce demand. The ships use LED lighting throughout the ship controlled by smart management systems to enhance further the energy saving profile. In partnership with the shipyard, MSC World Europa has been designed with an innovative hull shape to minimize resistance through the water and it will be fitted with automatic data collection systems for remote energy monitoring and advanced analysis, allowing real-time shoreside support to optimise operational efficiency onboard.

About the Cruise Division of MSC Group

The Cruise Division of MSC Group, the leading privately held Swiss-based shipping and logistics conglomerate with over 300 years of maritime heritage, is headquartered in Geneva, Switzerland, and has two distinct brands within its structure - the contemporary and luxury brands.

MSC Cruises, the contemporary brand, is the world's third largest cruise brand as well as the leader in Europe, South America, the Middle East and Southern Africa with more market share in addition to deployed capacity than any other player. It is also the fastest growing global cruise brand with a strong presence in the Caribbean, North America and the Far East markets.

Its fleet comprises 19 modern vessels combined with a sizeable future global investment portfolio of new vessels and is projected to grow to 23 cruise ships by 2025 with options for six more vessel orders in place through 2030.

MSC Cruises offers its guests an enriching, immersive and safe cruise experience inspired by the Company's European heritage, where they can enjoy international dining, world-class entertainment, award-winning family programmes and the very latest user-friendly technology on board. To learn more about contemporary brand's itineraries and experience on board its ships please see here.

Meanwhile the luxury brand, Explora Journeys, is set to start operating in 2023 with a fleet with the latest and most advanced environmental and maritime technologies available. The first of which will have a gross tonnage of 63,900 GT and feature 461 of the largest suites at sea, all with ocean front terraces. These luxury ships will introduce to the luxury segment a broad range of new guest experiences and other activities as well as generous ratios of public spaces, in addition to showcasing highly innovative design. For further information about Explora Journeys please see here.

MSC's number one priority across all its operations has always been the health and safety of its guests and crew, as well as the communities at the destinations its ships serve. In August 2020, MSC Cruises implemented a new comprehensive and robust health and safety protocol to become the first major line to return to sea. To learn more about MSC Cruises' health & safety protocol please see here.

MSC has long been committed to environmental stewardship with a long-term goal to achieve net zero emissions for its operations by 2050. The Company is also a significant investor in next-generation environmental marine technologies, with the objective to support their accelerated development and availability industry-wide. To learn more about the Company's environmental commitment please see here.

Finally, to learn more about the MSC Foundation, MSC Group's own vehicle to lead, focus and advance its conservation, humanitarian and cultural commitments please see here.

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About Chantiers de l'Atlantique

Thanks to the expertise of its teams and its network of subcontractors, associated with its first-rate industrial facilities, Chantiers de l'Atlantique is a key leader in the fields of design, integration, testing and turnkey delivery of cruise ships, naval vessels, electrical substations for offshore wind farms and services to the fleets. The company is at the core of the challenges of tomorrow, designing and building today ships whose environmental performance exceeds the most drastic standards, as well as equipment for offshore wind power that make it a major player in the energy transition.
www.chantiers-atlantique.com

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