



Carnival Corporation's AIDA Cruises Partners with Corvus Energy to Introduce Use of Battery Power in Cruising

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Lithium-ion battery storage systems among industry-leading advancements in corporation's "green cruising" strategy

MIAMI, Aug. 26, 2019 /PRNewswire/ -- [Carnival Corporation & plc](#) (NYSE/LSE: CCL; NYSE: CUK), the world's largest leisure travel company, today announced that its popular German brand AIDA Cruises has signed an agreement with Corvus Energy, the world's leading marine battery supplier. The agreement, signed August 20, is another significant step in Carnival Corporation's leadership in environmentally friendly ship design and operations.

The installation and operation of lithium-ion battery storage systems onboard the AIDA Cruises fleet begins with the electrification of the first AIDA ship in 2020. The goal of the partnership is to – for the first time – allow for the practical use of electrical energy from battery storage systems onboard large cruise ships.

AIDA's pilot program in electrification will test the system's use of stored battery power for emission-free ship operation for an extended period as well as to meet onboard energy needs. Following the pilot electrification program aboard an AIDA vessel, the effort will expand to Carnival Corporation's popular Italian brand, Costa Cruises.

Michael Thamm, CEO of Costa Group and Carnival Asia, said of the partnership, "Our goal is to reach emission-neutral ship operation. The electrification of our ships is another important step on this path. Thanks to the cooperation with Corvus Energy, in just a few months AIDA Cruises will for the first time launch this innovative technology on a large cruise ship."

One of the most renowned suppliers of marine batteries, Norwegian-Canadian company Corvus Energy is a pioneer in the development of maritime energy storage systems. The introduction of battery power to ships is the latest in a series of innovations that supports Carnival Corporation's "green cruising" strategy, which includes the introduction of new technologies, approaches and investments in sustainable cruising.

In December 2018, AIDA Cruises made history with the introduction of the world's first cruise ship capable of being powered in port and at sea by liquefied natural gas (LNG), the world's cleanest burning fossil fuel. The introduction of LNG to power cruise ships is a major achievement in green cruising that supports the company's environmental goals with the virtual total elimination of sulfur dioxide emissions (zero emissions) and particulate matter (95% to 100% reduction). The use of LNG will also substantially reduce emissions of nitrogen oxides and carbon dioxide.

In total, Carnival Corporation has an additional 10 next-generation "green" cruise ships on order, including Costa Smeralda, which will be the second of the corporation's ships to be powered by LNG when it joins the Costa Cruises fleet in October.

The company is also pioneering the use of Advanced Air Quality Systems, often referred to as exhaust gas cleaning systems, or "scrubbers." As of July 2019, Advanced Air Quality Systems have been installed on 77 of the more than 100 ships in the Carnival Corporation fleet. The systems remove almost all of sulfur oxide emissions, 75% of all particulate matter and reduce nitrogen oxide emissions.

AIDA Cruises' newest ship, AIDAnova, was recently named the first-ever cruise ship to be awarded the Blue Angel certification by Germany's Federal Ministry for the Environment for its environmentally friendly ship design. Since 2000, every ship built for AIDA Cruises has "cold ironing" or shore power capabilities, which allow for connecting directly into the land-based electrical grid while in port where the infrastructure is available. With "cold ironing," the air emissions are managed and regulated under the emission control requirements at the power plant supplying the port. By the end of 2020, 12 of AIDA's 14 ships will be able to use shore power where available.

In addition, AIDA is also exploring the use of CO₂-free production of liquefied gas from renewable sources through its "Power to Gas" project. The brand also plans to test its first onboard fuel cell in 2021, in cooperation with the Meyer Werft shipyard and other partners. By the end of 2023, 94% of all AIDA guests will travel on ships that can be fully powered by low-emission LNG or shore power where possible.

AIDA Cruises was named "Germany's Most Trustworthy Cruise Company" in the 2019 Reader's Digest Trusted Brands Survey and received 2019 MedCruise awards for "greatest sustainability program" and "greatest investment and commitment to the environment and sustainability."

About Carnival Corporation & plc

Carnival Corporation & plc is the world's largest leisure travel company and among the most profitable and financially strong in the cruise and vacation industries, with a portfolio of nine of the world's leading cruise lines. With operations in North America, Australia, Europe and Asia, its portfolio features Carnival Cruise Line, Princess Cruises, Holland America Line, Seabourn, P&O Cruises (Australia), Costa Cruises, AIDA Cruises, P&O Cruises (UK) and Cunard.

Together, the corporation's cruise lines operate 102 ships with 241,000 lower berths visiting over 700 ports around the world, with 19 new ships scheduled to be delivered through 2025. Carnival Corporation & plc also operates Holland America Princess Alaska Tours, the leading tour company in Alaska and the Canadian Yukon. Traded on both the New York and London Stock Exchanges, Carnival Corporation & plc is the only group in the world to be included in both the S&P 500 and the FTSE 100 indices.

With a long history of innovation and providing guests with extraordinary vacation experiences, Carnival Corporation has received thousands of industry awards – including recognition by the Consumer Technology Association™ as a CES® 2019 Innovation Awards Honoree for the

OceanMedallion™. A revolutionary wearable device that contains a proprietary blend of communication technologies, the OceanMedallion enables the world's first interactive guest experience platform transforming vacation travel on a large scale into a highly personalized level of customized service. The prestigious CES Innovation Awards honor outstanding design and engineering in consumer technology products.

Additional information can be found on www.carnival.com, www.princess.com, www.hollandamerica.com, www.seabourn.com, www.pocruises.com.au, www.costacruise.com, www.aida.de, www.pocruises.com and www.cunard.com.

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