



## **Carnival Receives Support From EPA, U.S. Coast Guard and Transport Canada to Implement Breakthrough Technology to Reduce Air Emissions**

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### **Carnival Commits Over \$180 Million to Install Exhaust Gas Cleaning Systems on 32 Ships, Becomes First to Use Innovative 'Scrubber' Solution in Restricted Spaces on Existing Ships**

MIAMI, Sept. 5, 2013 /PRNewswire/ -- Carnival Corporation & plc (NYSE/LSE: CCL; NYSE: CUK), the world's largest cruise company, today announced it has received the support of the U.S. Environmental Protection Agency (EPA), the U.S. Coast Guard and Transport Canada to implement a significant advancement in environmental technology designed to reduce air emissions from cruise ships and large marine vessels.

As part of today's announcement, Carnival has committed over \$180 million for exhaust gas cleaning technology on 32 ships. These include vessels from Carnival Cruise Lines, Holland America Line, Princess Cruises and Cunard that sail regularly within the North American Emission Control Area (ECA).

"This is a significant accomplishment as well as an important milestone for our company," said Carnival Corporation & plc CEO Arnold Donald. "Working together with the EPA, U.S. Coast Guard and Transport Canada, we have developed a breakthrough solution for cleaner air that will set a new course in environmental protection for years to come."

Carnival has been a partner in the development of this technology and will take the lead in further refining both design and installation aspects on ships with a variety of engine configurations between now and mid-2016.

This new generation of so-called "scrubber technology" combines the removal of sulfur with the substantial reduction of particulate matter and black carbon. Once the exhaust gas cleaning technology is installed and fully operational on the various Carnival subsidiary ships, they will exceed ECA standards. The International Maritime Organization's MARPOL Annex VI places a cap on sulfur within ECAs at 1.0%, which took effect in North America in 2012. In 2015, the limit will be 0.1%.

Carnival's design combines two established technologies, which have been successfully used in power plants, factories and vehicles to clean – or scrub – the exhaust from high-sulfur fuel. For the first time this combination is being developed to accommodate restricted spaces on existing ships.

In addition to exceeding stricter air emission standards – a significant public health advancement – Carnival's technology will help the company mitigate escalating fuel costs. The agreement in principle from the EPA and Coast Guard would enable an exemption for Carnival to use the fuel source that makes the most sense from an environmental and economic perspective. The agreement in principle is a requirement for the flag states of each Carnival subsidiary to grant permission for implementation.

The implementation also produces an immediate significant public health benefit, as all of the ships that will have the scrubber technology installed will use either low-sulfur marine gas oil or shore power when in ports in the United States and Canada. Ships that use shore power turn off diesel engines and connect to local electric utility power.

As a next step, Carnival will be requesting permits from flag states to allow for the trial of the exhaust gas cleaning technology to proceed.

Looking ahead, Carnival plans to explore the possibility of expanding the installation of its scrubber technology beyond the initial 32 ships.

Carnival Corporation & plc is the largest cruise company in the world, with a portfolio of cruise brands in North America, Europe, Australia and Asia, comprised of Carnival Cruise Lines, Holland America Line, Princess Cruises, Seabourn, AIDA Cruises, Costa Cruises, Cunard, Ibero Cruises, P&O Cruises (Australia) and P&O Cruises (UK).

Together, these brands operate 102 ships totaling 209,000 lower berths with seven new ships scheduled to be delivered between May 2014 and April 2016. 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.

SOURCE Carnival Corporation & plc

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