

# PANAGOPULOS PUSHES FAST-FORWARD ON LNG BUNKER FUTURE

Perhaps the most advanced plan to catapult shipping into the age of low carbon emissions has Greek masterminds

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IN ITS 47 YEARS in shipping, the Panagopoulos family has proved quite adept at reinventing itself.

Group founder Pericles Panagopoulos moved into the industry in 1971 with Royal Cruise Line, a California-based cruise company, then switched to bulk carriers and ferries in the early 1990s.

His son, Alexander, is now driving the family's evolution forward in even bolder fashion.

Arista Shipping, the company he independently founded in 2007 when his father withdrew from the ferry business, is pursuing "Project Forward", a multimillion-dollar venture to build the world's first truly deepsea, LNG-powered ship.

The impetus for the younger Panagopoulos to become one of few Greek players to actively pursue LNG bunkering is believed to have

## TW BY THE NUMBERS

**35%**

The percentage Project Forward vessels aim to reduce CO2 emissions

**80%**

The figure for NOx reduction

**99%**

The rate of sulphur oxide emissions it aims to lower

come from the family's experience as an operator of ferries in the Baltic Sea, a low-carbon emissions area.

On 10 April, Project Forward announced it signed a letter-of-intent with Jiangsu Yangzijiang Shipbuilding, China's biggest private yard, to build up to 20 LNG-

fuelled kamsarmaxes. No price details were announced. Greek brokers suspect each of the vessels will cost about \$42m, about 60% more than a conventional kamsarmax. Officials at the project declined to comment on the cost or provide their own estimates.

Project Forward announced the cooperation with Jiangsu Yangzijiang just three days before an agreement was reached at the IMO to cut maritime carbon emissions by 50% from 2008 levels by 2050. The project, which is being branded as a leader in shipping's decarbonisation, is awaiting investors to come forward to take part "in this exciting turn for shipping", according to its website.

## BY COMPARISON

Compared to conventional ships, Project Forward vessels aim to reduce emissions of carbon dioxide (CO2) by 35%; nitrogen oxide (NOx) by 80%; sulphur oxides (SOx) by 99%; and particulate matter by 99%. According to a project presentation, every 100 Project Forward ships remove 649,000 tons of CO2 and 3,870 tons of SOx per year.

Project Forward's price tag could hit \$840m, if brokers' estimates about the ships' cost are accurate, but its masterminds have no doubt it can be profitable.

The team, which includes chief technology officer Antonis Trakakis and chief operating officer Costas Protopoulos, expect the price of low-sulphur fuel, which becomes mandatory from



**PARTNERS IN PROPULSION:** Shell Downstream LNG general manager Laurant Wetemans (left) with Alexander Panagopoulos of Arista Shipping  
Photo: Lucy Hine



**LNG-FUELLED:** The 'Forward Bulker 84-LNG' ships to be built at China's Jiangsu Yangzijiang Shipbuilding  
Photo: Forward Ships

2020, to exceed the cost of traditional high-sulphur fuel by at least \$130 per ton. Such a spread should be sufficient to make alternative low-emission technologies, such as LNG bunkering and SOx scrubbers pay for themselves over a reasonable time frame.

Project Forward also expects LNG supply to increase in the future, thus keeping its price low at an estimated \$11 per million British thermal units (MMBtu) in 2020. This would result in savings of about \$1.3m per vessel per year over compliant low-sulphur fuel and about \$250,000 compared with scrubbers.

The most frequent concern about LNG bunkering is a lack of

refilling stations. Project Forward says that Shell, one of its partners, has committed to sufficient bunkering capacity by 2020.

A map on the project's website shows Shell currently developing bunkering locations at the US East Coast, near Gibraltar, at the Suez Canal and in Singapore — alongside the ones it already has in northern Europe and on the US Gulf coast.

Project Forward vessels should be comfortably able to move between them. Fuelled by LNG only and at a speed of 14 knots, a fully-laden 84,000-dwt kamsarmax could sail laden for 42 days or 14,112 nautical miles. It could sail around the world ballasting at 12 knots, covering 23,616 nautical miles in 82 days.


This is due to a GTT-designed membrane-type 2,500-cbm LNG tank fitted in the hull and close to the engine room. The ship will also be able to operate on compliant low-sulphur marine fuel, which could increase its range even further.

Another distinctive feature will be the ship's only two four-stroke, medium-speed Wärtsilä engine. This arrangement doubles the propulsion redundancy, quadruples power-generating redundancy and provides safe return to port.

The design is applicable to tankers and containerships, resulting in a streamlined hull measuring length overall of 238 metres, at a beam of 32.26 metres.

Project Forward says that for the first time in maritime history a naval architecture firm, Deltamarin, shared its proprietary hull lines with a classification society, American Bureau of Shipping. Both are partners in the project as are GTT, Shell and Wärtsilä.

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Pericles Panagopoulos moved into the industry in 1971 with Royal Cruise Line, then switched to bulkers and ferries in the early 1990s

Photo: TradeWinds archive

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