LNG-fuelled 40 megawatt line icebreaker for Rosatomflot

Rosatomflot and Aker Arctic signed a contract to design a powerful line icebreaker for escorting commercial vessels sailing year-round in western areas of the Northern Sea Route: mainly the Kara Sea, the Gulf of Ob and the Yenisey river. The icebreakers will use liquefied natural gas (LNG) as fuel.

The new line icebreakers will replace the current ageing nuclear-powered shallow draft icebreakers and respond to increased traffic in the area together with the new nuclear-powered icebreakers currently under construction in Russia. The vessels will operate with LNG fuel, which is readily available in the operational area from the Sabetta terminal with a fuel capacity sufficient for 30 days operation in the prevailing ice conditions.

One month autonomy
The project began in 2017 with a feasibility study to investigate if sufficient autonomy time can be achieved with LNG fuel. In addition, two alternative propulsion systems were compared on the design board and in the ice model basin. As a result an autonomy time of 30 days with LNG fuel was found to be feasible with the customer preferring conventional shaftline propulsion for the line icebreaker.

The new icebreakers will replace existing icebreakers operating in the area which are approaching the end of their service life and need to be renewed. The cargo traffic in the area is also increasing which means the need for icebreaker assistance is growing.

A huge leap forward
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