Prelude FLNG boiler
World's largest off-shore boiler delivered

land boilers (with a maximum steam flow of 1,200 t/h).

Table 1 Main specifications

Maximum steam flow (t / h)	220
Steam pressure (bar g)	69
Steam temperature (ºC)	480
Fuel	Fuel gas or diesel oil
H x W x D (m)	Approx. 20 x 13 x 11
Weight (ton)	Approx. 500

*Figures are for a single boiler.

They have been used to generate the electricity supplied by power companies as well as for industrial and in-house power generation. Kawasaki has also supplied more than 200 marine boilers (with a maximum steam flow of 140 t/h) for LNG carriers and other applications. The boilers to be supplied to the Prelude FLNG project were contracted by the French engineering company, Technip. Kawasaki has incorporated the lessons it has learned over the years in the field of marine boilers with its outstanding land boiler technologies to meet the large capacity requirement.

These marine boilers are the largest ever to be used and each one will generate 220 t/h of high-temperature, high-pressure steam. That is 1.6 times the maximum steam flow of any marine boiler Kawasaki has previously built.

temperature before being supplied to the user's equipment.

Designed to generate a large amount of high-temperature, high-pressure steam, the Prelude FLNG boiler is almost double the size of standard conventional marine boilers (approx. H13 m x W7 m x D4 m). The boiler

stage, and constructed an assembly shop dedicated to the final assembly of FLNG boilers at its Harima Works. Teamwork between engineering and manufacturing during planning and design processes cleared away any potential bottlenecks in production and established a one-piece flow manufacturing system in which workers complete assigned tasks at their respective stages of the production line. This enabled Kawasaki to ensure quality every step of the way while shortening lead time.

(2) High quality

The Prelude FLNG project has adopted strict certification requirements set by Lloyd's Register for equipment used in everything from design to inspection. In order to meet these requirements, Kawasaki had about 40 of its Harima Works employees undergo a special training program to acquire the advanced welding skills needed to be Lloyd's Register certified. As a result, Kawasaki was able to achieve an even higher level of welding quality.

(3) Environment resistant

Project specification requirements for the Prelude FLNG boilers include heavy-duty painting and water-tight insulation under harsh offshore conditions. For this reason, painting work was performed under strict oversight by only qualified painters who passed a qualification test conducted in the presence of an inspector from the National Association of Corrosion Engineers (NACE) International. The boilers were insulated in accordance with CINI standards (Netherlands insulation standards) as required by Shell and underwent thorough inspections by Technip and Shell inspectors.

(4) Maintainability

Due to limited deck space, a compact design and ease of maintenance were a must for the boilers. Kawasaki incorporated a maintenance area for pressure parts, burners, etc., in the boiler module blueprints to ensure that maintenance work could be carried out throughout their service life.

Postscript

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