Our Commitment to Sustainable Boiler Design

Total Steam Solutions Partner for a Sustainable World

Miura's founder, Tamotsu Miura, had a vision to create a compact, low fuel cost once-through steam boiler that kept both operators and the planet safe. Today, this legacy stretches across industries around the globe as a guiding principle for providing innovative and complete steam solutions.

The Miura steam boiler design evolves as our experts continue harnessing the latest technology, and today's solutions stand as some of the most efficient boilers in the world. Containing numerous sustainability advantages throughout the steam boiler life cycle, Miura strives to be a true partner in building a more sustainable future.

Made Sustainable by Design

MAXIMUM IN-SERVICE EFFICIENCY Leaders in minimizing losses and maximizing steam output per BTU input leads to fewer emissions.

ULTRA-FUNCTIONAL COMPACT DESIGN Proprietary pressure vessel design features low external surface area with double-insulation, allowing for lower radiation and convection heat losses during operation.

ON-DEMAND START-UP Generating full steam pressure in five minutes saves over 4 million BTU per day and eliminates the need to keep boilers in low-fire on standby.

MODULAR, MULTIPLE-UNIT SYSTEMS Individual units working as one system automatically turns boilers on and off based on the current demand to lower consumption, emissions and runtime.

LOW-WATER CONTENT PRESSURE VESSEL Miura's proprietary pressure vessel design enables unmatched safety, heat exchange efficiency and emissions reduction.

SUSTAINABLE PRODUCTION Miura boilers use less steel in the manufacturing process to further reduce the carbon footprint.

LOW-TEMPERATURE FLAME The once-through combustion sequence uses a low-temperature flame and pre-mix fuel to reduce hotspots and generates fewer NOx emissions.

Improving efficiency by reducing the amount of fossil fuels burned has a great impact on sustainability over the life of a boiler. Implementing this in-service efficiency technology helps reduce lifecycle emissions.

Producing sustainable steam does not solely rely on maximum efficiency, but requires a closer look at every aspect of the boiler process. As we continue exploring renewable resources, electric options and alternative fuels, we will continue developing the best technology to protect the planet for future generations.

Miura Sustainability Advantages Comparison

Maximizing Efficiency with the Smallest Environmental Impact

Through decades of careful design made to support a sustainable society, Miura steam boilers are the clear choice for industries across the globe. Engineering innovative total steam solution technologies that increase efficiency and reduce emissions provides numerous sustainability advantages.

Let's look at a theoretical comparison between a 900 boiler horsepower (BHP) firetube boiler and a Miura multiple installation (MI) system made up of three 300 BHP Miura LX-300 boilers. The 12 hour per day hypothetical industrial production facility demands between 10 and 15 thousand pounds per hour (kpph) of steam all day expect for two periods of time; demand is 3 kpph for an hour during the middle of the day and about 30 kpph in the afternoon. Otherwise, the process is shutdown.

The chart below shows overall system comparison on an annual basis.

	FIRETUBE	MIURA	
Heat Input	71,850,615,000	61,269,630,000	BTU/year
Heat Output as Steam	51,743,130,000	51,743,130,000	BTU/year
Flue Loss	11,908,855,000	7,035,740,000	BTU/year
Radiation Loss	1,595,780,000	225,570,000	BTU/year
Startup Loss	1,188,440,000	344,195,000	BTU/year
Shutdown Loss	5,399,080,000	1,846,535,000	BTU/year
Fuel Savings	-	10,580,985,000	BTU/year
NOx Emissions (lbs)	783	668	lbs/year
Co2 Emissions (tons)	4,225	3,603	tons/year

Fluctuating and Seasonal Load Demands

In Miura's modular concept, multiple units work together to share the steam load and keep up with changing demand within seconds. The efficient, on-demand steam system quickly adjusts firing rates or turns units on or off to match fluctuating demands. It cuts wasted fuel by turning off when not in use and not requiring them to stay warm or idle to meet demand.

Cleaner Sustainable Option

In our example comparison, the steam output remained the same, but Miura's emissions and energy losses were significantly less with large fuel savings. The modular, high-efficiency steam boiler design leads to a more clean, sustainable output when properly maintained year after year.