Steam Boiler Market For Thermal Power Plant and Oil Refinery - Growth, Trends, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 110 pages | Mordor Intelligence

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Report description:

The Steam Boiler Market for thermal power plants and oil refinery market is projected to register a CAGR of over 1.5% during the forecast period.

COVID-19 negatively impacted the market in 2020. Presently the market has now reached pre-pandemic levels.

Key Highlights
Over the medium term, the primary factors expected to drive the market are the upcoming thermal power plants and refineries worldwide. During the forecast period, an increase in thermal power plants and refineries would lead to higher demand for the steam boiler market.
On the other hand, increasing focus on renewable sources for electricity generation is expected to decrease the count of coal-powered thermal plants, which is expected to hinder market growth during the forecast period.
Nevertheless, with the set of targets to reduce greenhouse gas emissions by 2020 and 2050, the European Union is expected to reduce its emissions by 80%-95% by 2050. To abide by the targets, the European Union is expected to increase its investment to increase the thermal power plants' efficiencies and reduce CO2 emissions. Thus, an increase in efficiency is expected to provide an opportunity for the steam boiler market with better technologies and negligible heat losses in European countries.
Asia-Pacific is expected to dominate the market with the highest number of existing and upcoming thermal power plants and oil refineries.

Thermal Power Plant & Oil Refinery Steam Boiler Market Trends

Water Tube Boiler to Dominate the Market

Water-tube boilers generate vapor from the water that flows through tubes and is heated by the combustion of various fossil fuels, like coal and natural gas. The vapor generated is sent to the steam turbine at a high pressure of around 250 bar that rotates the turbine, thus, helping to generate electricity.
Water-tube boilers have higher efficiency and a pressure range of around 250 bars. It requires less time to raise steam pressure, provides greater flexibility for responding to load changes, and provides a greater ability to operate at high steam generation rates.
Water tube boilers generate vapor or steam to rotate the turbines and generate electricity. Water is boiled in tubes by burning fossil fuels, such as coal, gas, and oil. Natural gas-operated power plants are the most eco-friendly power plants that generate a considerable amount of carbon emissions compared to oil and coal.
As of 2021, there are nearly 176.9 GW of pre-construction coal-powered thermal power plants worldwide. China is the major country to have the highest number of under-construction coal-powered plants. Construction of these plants is estimated to increase the market growth of steam boilers in the near future.
Further, despite the shrinking number of coal-based power plants globally, the countries (such as India) are still endorsing the new coal-based power generation projects. About 40 GW of the country's coal plants are either financially stressed or are at risk of bankruptcy. Less than 4.5 GW of new capacity was commissioned in 2021, compared to 39 GW in 2010. Due to overcapacity and competition from cheaper renewables, low plant-load factors have made it difficult for coal plants to recover their investments. Despite these unfavorable market conditions for coal-based power, the governments in the region continue to invest in new plants.
In July 2022, Through its subsidiary, JERA Power Taketoyo G.K., JERA Co., Inc. began commercial operation of Unit 5 of the Taketoyo Thermal Power Station located at 1-1 Ryugu, Taketoyo-Cho, Chita County, Aichi Prefecture, Japan. The company has been replacing aging equipment for the past couple of years. This high-efficiency coal-fired power plant is equipped with Ultra-Supercritical (USC) power generation technology.
As of 2022, the Quang Trach 1 Coal-fired Power Plant is under construction in Vietnam with a capacity of 1.2 gigawatts, and the estimated plant investment is about USD 1.28 billion. The project is expected to be commissioned by 2025 and generate up to 8.4 billion kilowatt-hours of electricity annually.
Construction of these plants is estimated to increase the market growth of steam boilers in the near future.

Asia-Pacific to Dominate the Market

As of 2021, Asia-Pacific dominated the market with the highest number of thermal power plants and refineries. With the increasing population and the growth of urbanization in the region, the demand for energy and power is expected to increase during the forecast period.
As of July 2022, there were around 1,751 coal power plants in the region, and the majority of the total thermal power plants are operated by coal, the reason being the lower price of coal compared to other fuels. But with the rising consciousness of climate change, the region is likely to decline the uses of coal-powered plants in the near future.
As of July 2022, there were nearly 176 planned coal-powered plants in the region. Construction of these plants is expected to increase the market growth of steam boilers during the upcoming years.
Apart from power plants, the region's oil refining capacity was 36,478 thousand barrels per day. It contributes to nearly 35.79% of the global refining capacity and is expected to add to its refining capacity during the forecast period. China is the prominent country in the region, contributing 16.67% of the world's oil refining capacity in 2021. Moreover, the country is planning to make up 44% of the crude oil refining capacity in the region in 2023.
The Indonesian government announced its plans to more than double the refining capacity during 2018-2025 to reach 2.2 million

barrels per day. As a result of these policies, major refinery and petrochemical plant construction and upgradation projects are upcoming and are in the pipeline.
In October 2022, Pertamina, an Indonesian state-owned oil and gas company, intended to invest up to USD 50 billion in building and expanding refineries next year. About half of this investment will be devoted to developing a greenfield project with the Russian state energy company Rosneft. With the completion of the new refinery, crude refining capacity will increase by 300,000 barrels per day.
In November 2022, The Indian Oil Corporation Limited (IOCL), its subsidiary Chennai Petroleum Corporation Limited (CPCL), and other seed equity partners formed a joint venture to develop the Nagapattinam refinery and petrochemicals project in Tamil Nadu, India.
Such under-construction and planned refineries in the region are expected to increase market growth during the forecast period.

Thermal Power Plant & Oil Refinery Steam Boiler Market Competitor Analysis

The Steam Boiler Market for thermal power plants and oil refineries needs to be more cohesive. The market's key players (not in particular order) include Alfa Laval AB, Victory Energy Operations LLC, Babcock Wanson Ltd, and Forbes Marshall Pvt. Ltd, and Viessmann Manufacturing Company Inc., among others.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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