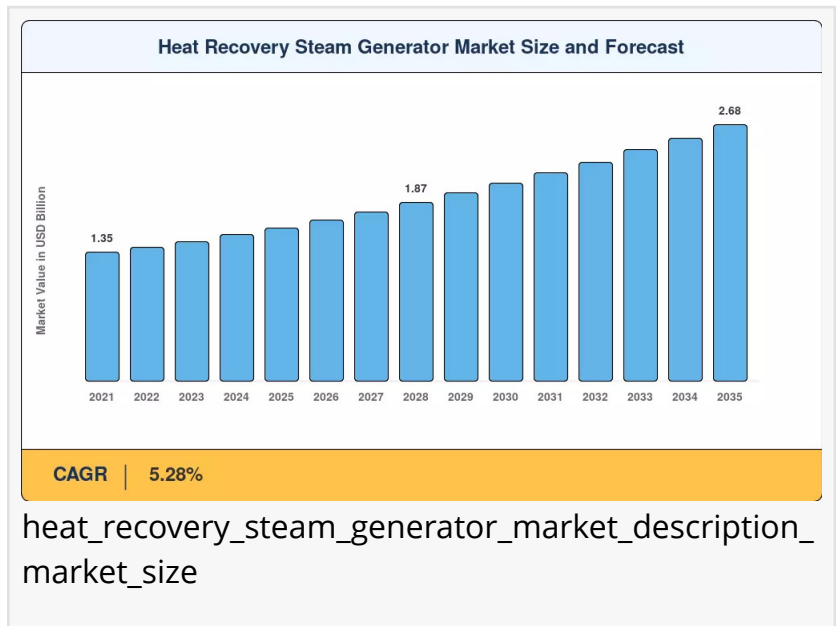


Heat Recovery Steam Generator Market Forecast to Expand at a 5.28% CAGR Through 2035

Power plants commanded 55.9% of the Heat Recovery Steam Generator Market in 2025, as global CCGT additions accelerated.

NEW YORK, NY, UNITED STATES, July 29, 2026 /EINPresswire.com/ -- The Heat Recovery Steam Generator Market reached an estimated USD 1.60 Billion in 2025 and is projected to grow from USD 1.68 Billion in 2026 to USD 2.68 Billion by 2035, expanding at a CAGR of 5.28% during the forecast period.



Market Overview

Heat Recovery Steam Generators (HRSGs) are critical thermal equipment used in combined cycle power plants and industrial applications to recover heat from exhaust gases and convert it into steam for power generation or process heating. These specialized heat exchangers capture the thermal energy contained in hot gas streams from gas turbines, diesel engines, and industrial



Asia-Pacific led the Heat Recovery Steam Generator Market at 45.8% revenue share in 2025.”

Prashant Hake

processes, producing steam that can drive steam turbines for additional electricity generation or supply thermal energy for industrial applications. HRSGs are essential components of combined cycle power plants, where they significantly improve overall thermal efficiency by utilizing waste heat that would otherwise be released into the atmosphere. The generators typically consist of several pressure sections—high, intermediate, and low-pressure

systems—with economizers, evaporators, and superheaters arranged for optimal heat transfer across various operating conditions.

The [heat recovery steam generator Industry](#) is experiencing robust growth driven by several key factors. The increasing global demand for efficient and environmentally friendly power

generation technologies is a primary growth driver. Combined cycle power plants, which leverage HRSG technology, offer significantly higher thermal efficiency compared to conventional simple-cycle power plants, reducing fuel consumption and emissions per unit of electricity generated. The global transition toward lower-carbon energy systems and the need for reliable baseload and flexible power generation to complement intermittent renewable sources are accelerating investments in combined cycle power plants.

Key industry trends shaping the HRSG market include the growing deployment of flexibly operated combined cycle plants that can ramp up and down quickly to balance grid fluctuations. The increasing installation of HRSGs in cogeneration applications for combined heat and power (CHP) systems is gaining momentum in industrial and district heating applications. The development of advanced HRSG designs with enhanced heat transfer capabilities, improved materials, and sophisticated control systems is enabling higher efficiency and operational flexibility.

The market is also benefiting from technological advancements in heat transfer materials and designs. Innovations such as enhanced finned tube technologies, compact modular designs, and advanced corrosion-resistant materials are extending HRSG operating life and reducing maintenance requirements. The integration of digital monitoring and control systems with predictive maintenance capabilities is improving operational reliability and performance optimization.

Policy and regulatory frameworks significantly influence the HRSG market landscape. Government policies promoting energy efficiency and emission reduction are creating favorable conditions for combined cycle plant investments. Renewable energy targets and the increasing penetration of variable renewable generation require flexible backup power, often provided by gas-fired combined cycle plants with HRSGs. Carbon pricing mechanisms and emissions trading schemes encourage the adoption of efficient generation technologies.

The demand outlook for HRSGs remains positive, supported by the continued role of natural gas in the global energy mix, particularly as a transition fuel toward lower-carbon energy systems. The need to replace aging power generation infrastructure in developed markets and expand capacity in emerging economies will drive investments in combined cycle plants. The growing demand for industrial cogeneration and waste heat recovery applications will further support market growth.

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Market Segmentation

By Type: The heat recovery steam generator market is segmented into vertical HRSGs, horizontal HRSGs, and others. Vertical HRSGs feature a vertical arrangement of heat transfer surfaces and are commonly used in applications with space constraints, offering advantages in terms of

footprint and efficiency for certain configurations. Horizontal HRSGs, with their horizontally oriented heat transfer surfaces, are widely utilized in large-scale combined cycle power plants due to their ease of maintenance and accessibility. The market preference for each type varies based on application, space availability, and specific operational requirements.

By System Type: The market is categorized into single-pressure systems, dual-pressure systems, and triple-pressure systems. Single-pressure HRSGs produce steam at a single pressure level and are typically used in simpler applications where steam quality requirements are less demanding. Dual-pressure systems generate steam at two different pressure levels, enabling improved efficiency and operational flexibility in medium-sized applications. Triple-pressure systems dominate the large-scale power generation segment, offering the highest efficiency by producing steam at three pressure levels for optimal thermodynamic performance in large combined cycle plants.

By Application: The market is segmented into power generation, combined heat and power (CHP), and industrial applications. Power generation represents the largest segment, driven by the global expansion of combined cycle power plants for electricity generation. Combined heat and power applications, where HRSGs provide both power and thermal energy for district heating or industrial processes, are growing in importance due to their superior overall efficiency and increasing focus on energy optimization.

By End-User Industry: The market serves various end-user industries including utilities, oil and gas, chemical processing, and other industrial sectors. Utilities are the largest end-user segment, representing the majority of HRSG installations in large-scale combined cycle power plants. The oil and gas industry utilizes HRSGs for both power generation and process heating applications, particularly in refining operations. Chemical processing and other industrial sectors employ HRSGs for waste heat recovery in manufacturing processes.

By Region: The market is analyzed across North America, Europe, Asia-Pacific, Latin America, and the Middle East and Africa. Asia-Pacific represents the fastest-growing regional market, driven by rapid industrialization, urbanization, and significant power generation capacity expansion in countries such as China, India, and Southeast Asian nations.

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Regional Analysis

North America: The North American HRSG market is characterized by significant investments in modern power generation infrastructure and a strong focus on efficiency improvements. The United States leads the region, driven by the abundance of natural gas resources and the continued shift from coal to natural gas-fired power generation. The replacement of aging power plants with highly efficient combined cycle facilities is a major market driver. Canada's power generation sector is also investing in combined cycle technology, particularly in provinces

transitioning from coal-fired power. The region's emphasis on grid flexibility and the integration of renewable energy supports investments in gas-fired combined cycle plants capable of rapid load following.

Europe: Europe represents a mature but steadily growing market for HRSGs, driven by the ongoing energy transition and the need for flexible power generation to support increasing renewable energy penetration. The European Union's energy efficiency targets and emission reduction goals favor the deployment of combined cycle power plants with HRSG technology. The closure of coal-fired power plants in many countries is creating opportunities for replacement with lower-emission combined cycle facilities. Industrial cogeneration and district heating applications are significant market segments in countries such as Germany, the Netherlands, and Scandinavia, where combined heat and power systems are well-established.

Asia-Pacific: The Asia-Pacific region is the largest and fastest-growing market for HRSGs, driven by rapid industrialization, urbanization, and increasing electricity demand. China leads the regional market, supported by its extensive investments in power generation infrastructure, including combined cycle plants and industrial cogeneration facilities. India is experiencing significant market growth, driven by the expansion of its power generation capacity and the government's focus on energy efficiency and emission reduction. Japan and South Korea are mature markets with continued investments in combined cycle technology, particularly in replacing aging power generation facilities. Southeast Asian countries including Indonesia, Thailand, Malaysia, and Vietnam are emerging markets with growing demand for combined cycle power plants to support economic development.

Latin America: The Latin American HRSG market is influenced by the region's energy needs and investments in power generation infrastructure. Mexico, Brazil, and Argentina are key markets, with growing demand for efficient power generation technologies. The region's focus on natural gas utilization and reduction of reliance on hydropower, which is susceptible to droughts, supports investments in combined cycle power plants. Industrial applications, particularly in the oil and gas and chemical processing sectors, are creating additional demand for HRSG systems.

Middle East and Africa: The Middle East is a significant and growing market for HRSGs, driven by the extensive natural gas resources in the region and investments in power generation and industrial facilities. Saudi Arabia, the United Arab Emirates, Qatar, and Oman are major markets, with significant infrastructure development and expansion plans. The region's focus on energy efficiency, emissions reduction, and industrial diversification supports investments in combined cycle plants and cogeneration systems. Africa presents emerging opportunities, particularly in countries developing natural gas resources and expanding power generation capacity.

Competitive Landscape / Key Players

The global heat recovery steam generator market is characterized by the presence of established equipment manufacturers, engineering companies, and specialized HRSG suppliers. Key companies operating in the market include:

Babcock & Wilcox Enterprises, Inc.: A leading provider of HRSG equipment and engineering services, offering advanced boiler technologies for combined cycle power plants and industrial applications. The company's extensive experience and global footprint contribute to its strong market position.

General Electric Company: A major player in the power generation sector, providing HRSG solutions as part of its comprehensive combined cycle power plant offerings. GE's integrated approach and technological expertise strengthen its market presence.

Siemens AG: A global leader in energy technology, offering HRSG systems through its power generation business. Siemens provides complete solutions combining gas turbines, HRSGs, and steam turbines for combined cycle applications.

Doosan Heavy Industries & Construction Co., Ltd.: A South Korean company providing HRSG equipment for power generation and industrial applications. Doosan's technological capabilities and experience in large-scale projects contribute to its market position.

Cannon S.p.A.: An Italian company specializing in heat recovery systems, including HRSGs for industrial and power generation applications. Cannon's expertise in design, engineering, and manufacturing supports its market presence.

Other notable players include Mitsubishi Heavy Industries, Ltd., CMI Group, Thermax Limited, John Cockerill Group, and Foster Wheeler AG. Competition in the market is based on factors such as technological innovation, product quality, engineering capability, project execution expertise, and after-sales support.

Latest Industry News & Developments

December 2025: Babcock & Wilcox announced the successful completion of a major HRSG installation project for a 1,200 MW combined cycle power plant in Texas, United States. The project features advanced HRSG technology with enhanced efficiency and operational flexibility, supporting the customer's power generation requirements and environmental compliance.

November 2025: General Electric and a major Japanese utility company signed an agreement for the supply of advanced HRSG systems for a new combined cycle power plant in Chiba, Japan. The project includes the deployment of GE's latest HRSG technology with integrated digital monitoring for optimized performance and reduced emissions.

October 2025: Doosan Heavy Industries was awarded a contract valued at approximately \$450 million for the supply of HRSG equipment and related services for a large-scale combined cycle power plant project in India. The project represents the company's continued expansion in the fast-growing Indian power generation market.

Market Challenges & Opportunities

Key Restraints: The heat recovery steam generator market faces several challenges that could impact its growth trajectory. The high initial capital costs associated with HRSG equipment and combined cycle power plant projects create budget constraints for project developers. The complexity of HRSG engineering, fabrication, and installation requires specialized expertise and can lead to project execution challenges. Technical challenges related to corrosion, erosion, and thermal fatigue in HRSG components affect operational reliability and maintenance costs. The increasing competition from renewable energy sources and energy storage technologies in some markets creates uncertainty for gas-fired power generation investments. Additionally, the long project development timelines and regulatory approval processes can delay market realization.

Emerging Opportunities: The HRSG market presents substantial opportunities in the global energy transition. The increasing need for flexible power generation to balance variable renewable energy sources creates demand for combined cycle plants with advanced HRSG capabilities. The development of hydrogen-capable HRSG systems, designed to operate with hydrogen and natural gas mixtures, offers a pathway to decarbonized power generation. The growing focus on industrial decarbonization and energy efficiency is driving demand for HRSGs in industrial waste heat recovery and cogeneration applications. The modernization of aging power generation infrastructure, particularly in developed markets, presents significant retrofit and replacement opportunities.

Future Potential: The long-term potential of the HRSG market is supported by the sustained role of natural gas in the global energy mix, the continuing need for baseload and flexible power generation, and the growth of industrial heat recovery applications. The development of more efficient, reliable, and cost-effective HRSG technologies, supported by ongoing innovation and digitalization, will enhance market viability. The integration of HRSG systems with carbon capture technologies offers a pathway to near-zero emissions from gas-fired power generation, supporting decarbonization goals. The global demand for electricity and thermal energy, coupled with the need for energy efficiency improvements, ensures sustained market demand and growth potential throughout the forecast period.

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Final Market Summary

The global heat recovery steam generator market is poised for steady growth, with projections indicating an expansion from USD 1.68 billion in 2026 to USD 2.68 billion by 2035, at a compound annual growth rate of 5.28%. This growth trajectory is driven by increasing investments in combined cycle power plants, growing demand for energy efficiency and emission reduction, and the continued role of natural gas in the global power generation mix. Asia-Pacific emerges as the fastest-growing regional market, driven by rapid industrialization and power generation capacity expansion in countries such as China and India. Technological advancements in HRSG design, materials, and digital controls are shaping the industry

landscape, while the integration of flexibly operated combined cycle plants supports grid stability and renewable energy integration. Despite challenges including high capital costs and competition from alternative energy sources, the market offers substantial opportunities in hydrogen compatibility, industrial cogeneration, and plant modernization. The essential role of HRSGs in achieving high-efficiency power generation and thermal energy recovery ensures sustained market demand and long-term growth potential throughout the forecast period.

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