

Clean Coal Technology Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The clean coal technology market is poised to register a CAGR of more than 4.5% during the forecast period, 2022-2027. The COVID-19 pandemic had moderately affected the clean coal technology market as the shortage of coal during the first quarter of 2020 led to the disruption of electricity generation throughout thermal-based power plants. Growing global demand for compatible and eco-friendly power generation technology and increasing urbanization in developing countries are significant drivers for the clean coal technology market. On the other hand, many countries are shifting to renewable energy, which is likely to act as a restraint during the forecast period.

Key Highlights

Increasing power demand and consumption across the world are likely to drive the clean coal technology market during the forecast period.

Many government policies and regulations and global environmental agency recommendations encourage global manufacturers of clean coal technology to invest in R&D for the advancement of technology. The global coal consumption rate, advanced technology, and low-cost fuel provide new opportunities for the clean coal technology market during the forecast period.

As the Asia-Pacific region with a majorly highly populated country, China and India are likely to dominate the clean coal technology market. Due to industrialization in the Asia-Pacific region, energy demand from end-user industries is projected to drive the region's market growth.

Clean Coal Technology Market Trends

Growth in Power Consumption is Likely to Drive the Market

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According to International Energy Agency (IEA), in 2020, world total coal production was approximately 7575 metric ton. Coal is used as a primary source of power, and electricity generation from coal-fired power plants in OECD countries fell by 15.6% to 2 067.8 terawatt-hours (TWh) in 2020, continuing with the efforts for the decarbonization of the power sector.

At the same time, total gross electricity production globally increased by 0.6% to 26823.2 TWh as compared to 2018. This increased percentage in gross electricity generation is attributed to the emerging renewable energy markets. However, the recent growth in the industry sector is increasing, which encourages the demand for more power. Renewable energy in a short period may not complete the power demand.

Furthermore, according to IEA, the global electricity demand is expected to grow at 2.1% per year up to 2040. This, in turn, is likely to increase the share of electricity in the total final energy consumption, from around 19% in 2018 to approximately 24% in 2040. Hence, with the increasing power demand, the market for clean coal technology may witness growth globally during the forecast period to produce efficient and low-emission coal power to control global CO₂ emissions and global warming.

Clean coal technology is expected to grow due to the increasing power demand and fuel cost savings with the help of capital investment and technology advancement. Government and environmental agencies in North America and Asia-Pacific, such as the US Department of Energy, National Energy Technology Laboratory (NETL), and EIA, have committed to take initiatives toward clean coal technology and help the market growth positively.

For instance, in July 2020, the US Department of Energy and NETL collaborated on advanced high-efficiency clean coal technologies with low-to-zero emissions through the carbon capture, utilization, and storage (CCUS) technique and plan to reduce nitrogen oxides by 83%, sulfur dioxide by 98%, and particulate matter by 99.8% from the new coal plants. Thus, such government initiatives are likely to drive clean coal technology during the forecast period.

Hence, owing to the above reasons, increasing power demand and consumption are expected to drive the market during the forecast period.

Asia-Pacific is Dominating the Market

In 2020, the coal production growth in China was affected to a great extent, only witnessing a 15% increase compared to 2010. Conversely, coal consumption in China only recorded an increase of 1.3 % in 2020 due to major investments and shifting to renewable energy sources.

Moreover, in 2020, the total coal energy consumption in India was 17.54 Exajoules, which was higher than the country's consumption in 2015, 16.55 Exajoules. This growth in consumption was mainly driven by a higher coal demand for power generation, which is likely to drive the demand for clean coal technology for more clean power generation.

Furthermore, the governments of China, India, Japan, etc., plan to increase the expenditure on the development of new coal power projects. They are related to environmental safety, fuel cost savings, and technological developments of new coal power projects.

For instance, in November 2021, the government of China announced its plan to establish a special re-lending facility of approximately USD 31.4 billion to support the clean coal technology, including advanced pre-treatment of coal, and develop a coalbed-methane value chain.

However, clean coal technology comes with a high capital cost involved in the event of technology, installation, and other related expenses, which are estimated to restrain the growth of the clean coal technology market shortly.

Clean Coal Technology Market Competitor Analysis

The clean coal technology market is moderately fragmented due to many companies operating in the industry. The key players in

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this market include Alstom SA, Siemens Energy AG, General Electric Company, KBR Inc., and Shell PLC.

Additional Benefits:

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

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