

India Syngas Market By Production Technology (Steam Reforming, Partial Oxidation, Autothermal Reforming, Biomass Gasification, Others (Plasma Gasification, Heat Exchange Reforming, etc.)), By Application (Chemicals & Fertilizer, Fuel, Electricity), By Region, Competition Forecast and Opportunities, 2019-2029

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Abstracts

India Syngas Market is anticipated to increase at an impressive CAGR of 5.09% in the forecast period, 2025- 2029. Syngas plays a significant role in India's industrial and economic growth. Syngas, commonly referred to as synthesis gas, is a fuel gas mixture mostly made up of carbon monoxide (CO) and hydrogen (H₂). Gasification of carbon-containing substances like coal, biomass, or waste results in its production. Syngas is produced during the gasification process, which involves combining the carbon-containing feedstock with a controlled amount of oxygen and/or steam in a hot atmosphere. Many different things can be done with syngas, including generating electricity, producing chemicals and synthetic fuels, and using it as a reducing agent in metallurgical processes. The ratio of CO to H₂ in syngas can vary depending on the feedstock and the gasification conditions, but it normally comprises 20–30% CO, 40–50% H₂, and trace amounts of gases, such as carbon dioxide (CO₂), methane (CH₄), and nitrogen (N₂). It can be used in a variety of processes and applications and can be tailored to meet specific requirements. For example, the H₂ content of syngas can be increased by adjusting the gasification conditions, making it suitable for use in fuel cells or as a feedstock to produce ammonia or methanol. On the other hand, reducing the H₂ content and increasing the CO content can make syngas suitable for use in Fischer-Tropsch process to produce liquid hydrocarbon fuels. Syngas is created by gaseous substances used in industry. Syngas has the potential as a low-carbon or

even carbon-neutral fuel. When produced from biomass or waste feedstocks, syngas has the potential to be a carbon-neutral fuel source, as the carbon released during combustion is offset by the carbon absorbed during the growth of the biomass. The use of syngas in integrated gasification combined cycle (IGCC) power plants can result in lower greenhouse gas emissions compared to traditional coal-fired power plants.

Rising Demand for Sustainable Development

Syngas can be produced from a variety of feedstocks including biomass and waste materials, which can help to reduce reliance on fossil fuels and promote more sustainable resource use. This can help to reduce greenhouse gas emissions and mitigate climate change. Syngas can also be used as feedstock to produce a range of chemicals, including fertilizers and synthetic fuels. These products have the potential to displace fossil fuel-based products, leading to a reduction in greenhouse gas emissions and other environmental impacts associated with fossil fuel extraction and use. Syngas production can also have positive social and economic impacts. For example, the use of biomass waste as a feedstock for syngas production can create opportunities for local communities to generate income from waste materials that would otherwise be disposed of. Similarly, the development of syngas production facilities can create jobs and stimulate economic growth in areas that may be struggling economically. The limited supply of fossil fuels, the need to reduce atmospheric greenhouse gas emissions, the need for energy security, and the need to meet the high energy demand expected in the future due to population growth all call for the development and use of sustainable and alternative fuels (syngas, biogas, biodiesel, bio-oil, and hydrogen) derived from sources other than petroleum. In 2022, India's power demand grew about 8% — or at nearly double the pace of the Asia Pacific region something to more than 149.7 terawatt-hours (TWh) from the previous year. Similarly, India consumed a total of 222.30 million tons of petroleum products in 2022-23, 10.2 percent higher year on year (YoY). Growth in power and petroleum products is backed by strong GDP growth and manufacturing activity in the country. According to the Government of India, Real GDP growth in 2021-22 stood at 8.7 percent, 1.5 percent higher than the real GDP of 2019-20. Rising demand for sustainable development to protect the environment and meet energy needs also contributes to the demand for syngas.

Rising Demand for Chemicals and Fertilizers in India

The two main components of syngas, carbon monoxide (CO) and hydrogen (H₂), can be used as building blocks to synthesize a variety of chemicals. Syngas is used in the

chemical industry in the production of methanol, which is an important industrial chemical used as a solvent, fuel, and feedstock to produce other chemicals. Methanol can be produced from syngas using a catalytic process known as methanol synthesis. The reaction produces methanol and water, which can be separated to yield pure methanol. The installed capacity to produce methanol in India was 474.30 thousand tonnes in 2021. Total production of methanol 234.03 was thousand tonnes. Syngas can also be used to produce other chemicals such as ammonia, acetic acid, and olefins. Ammonia is an important fertilizer used in agriculture, while acetic acid is used in the production of a wide range of chemicals including vinyl acetate and cellulose acetate. Olefins, such as ethylene and propylene, are used as building blocks to produce plastics and other materials. According to India Brand Equity Foundation (IBEF), Indian chemicals industry stood at USD 178 billion in 2019 and is expected to reach USD 304 billion by 2025 registering a CAGR of 9.3%. The demand for chemicals is expected to expand by 9% per annum by 2025. The production of fertilizers is another important application of syngas. Ammonia, which can be produced from syngas, is the main ingredient in nitrogen fertilizers. Nitrogen fertilizers are widely used in agriculture to increase crop yields and improve soil fertility. Syngas can also be used to produce other types of fertilizers such as urea and ammonium nitrate. However, there are also some challenges associated with the use of syngas in chemical and fertilizer production. One of the main challenges is the high cost of syngas production technology, which can be a barrier to its widespread adoption. In addition, the production of syngas from coal or other fossil fuels can result in the release of greenhouse gases and other pollutants, which can have negative environmental and health impacts if not properly controlled.

Market Segmentation

India Syngas Market is segmented based on production technology, application, region and competitive landscape.

Based on Production Technology, the market is divided into steam reforming, partial oxidation, autothermal reforming, biomass gasification, and others (plasma gasification, heat exchange reforming, etc.). Based on application, the market is divided into chemicals & fertilizer, fuel, and electricity.

Market Players

Linde India Limited, Air Product and Chemicals Inc., Air Liquide India, Alchemie Gases & Chemicals Pvt. Ltd., Haldor Topsoe India Pvt. Ltd., Enerkem India Pvt. Ltd, Chembond Chemicals & Fertilizers Limited, Gujarat Gas Limited are the key players

operating in the India Syngas Market.

Report Scope:

In this report, India Syngas Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

India Syngas Market, By Production Technology:

Steam Reforming

Partial Oxidation

Autothermal Reforming

Biomass Gasification

Others

India Syngas Market, By Application:

Chemicals & Fertilizer

Fuel

Electricity

India Syngas Market, By Region:

North

South

West

East

Competitive Landscape

India Syngas Market By Production Technology (Steam Reforming, Partial Oxidation, Autothermal Reforming, Bioma...

Company Profiles: Detailed analysis of the major companies present in India Syngas Market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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