

India Hydrogen Market by Technology (Steam Methane Reforming, Partial Oxidation of Oil, Coal Gasification, Methanol Reforming, Ammonia Cracking and Electrolysis of Water); By Delivery Mode (Captive and Merchant); By Application (Chemical, Petroleum Refining, Metal Processing, Glass Industry, Edible Fats & Oils and Energy); By Region (North India, South India, Western India and East India) -Analysis of market share, size & trends for 2016-19 and forecasts to 2030

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Report description:

[170 + Pages Research Report] India Hydrogen Market is anticipated to surpass USD 404 million by 2030 from USD 159 million in 2020 at a CAGR of 7.65% throughout the forecast period, i.e. 2020-2030

Market Overview

Hydrogen is a vital chemical having a wide range of commercial applications. It is significant, chiefly, for its operation in the chemical industry as raw material and in metallurgical industries as a reduction agent. Hydrogen is a basic element required to produce ammonia and thus fertilizers and methanol for the development of various polymers. Another field of application involves refineries that use hydrogen in the manufacture of intermediary oil products. Therefore, approximately 55% of total hydrogen is used for synthesizing ammonia, 25% for refineries, and approximately 10% for the production of methanol. The principal application is in the extraction of crude oil in the refining industry. Hydrogen is the fuel of the future, given the rise in the level of pollution all across the globe, increasing concerns regarding climate change and global warming. As India is growing into a developed country, the demand is projected to rise for cleaner fuel to produce energy. The growing power demand is met with a greater solution from the hydrogen fuel cell.

Market Highlights

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Indian Hydrogen Market is anticipated to reach USD 404.37 million in 2030 from USD 159.35 million in 2019 growing at a CAGR of 7.65% during the forecast period, i.e., 2019-2030. Private businesses and government departments (such as the department of defense) are beginning to use fuel cells for supplying their materials processing equipment, including storage facilities/retail outlets. Walmart, Whole Foods, Bridgestone Firestone, Coca Cola, Central Grocers, Nestle Water, Fed Ex, and Genco are some of the businesses that deploy commercial fuel cell vehicles. Thus, propelling the growth of the hydrogen market in India. For several industrial sectors, hydrogen is a reagent used in the production of synthetic fabric, glass, electronic appliances, and metalworking. The rocket launchers also use hydrogen as fuel. Hydrogen is also a significant vector of renewable energy combined with fuel cells, as it enables energy to be generated directly on-board electric vehicles or in distant areas of the grid. Furthermore, supportive government policies coupled with increased research & development activities are likely to increase the demand for hydrogen.

India Hydrogen Market

India Hydrogen Market: Segments

Cost-effective Steam-methane reforming technology

Indian hydrogen market on the basis of technology is segmented into steam methane reforming, partial oxidation of oil, coal gasification, methanol-reforming, ammonia cracking, and electrolysis of water. Among these, steam-methane held a dominant share of XX% in 2019, in terms of revenue owing to cost-effectiveness and high conversion capability corresponding to this method. However, coal-gasification captured the second-largest market share in 2019 and is anticipated to grow at the highest CAGR.

India Hydrogen Market

Rising revenue from a captive segment

Based on the mode of delivery, the Indian hydrogen market is categorized into captive and merchant. Among these, the merchant segment dominated the market with a share of XX% in revenue in 2019. Attributed to the rise in demand for hydrogen in many end-user industries, the merchant segment is expected to be the most profitable one. However, over the projection timeframe, captive systems would increase in sales at the fastest CAGR. Captive hydrogen production prevents numerous problems related to hydrogen delivery and distribution. The demand is therefore expected to expand significantly.

Increasing usage of hydrogen in petroleum refining

On the basis of application, the hydrogen market in India is segregated into chemical, petroleum refining, metal processing, glass industry, edible fats & oils and energy. The petroleum refining segment held a major share of the market of XX% in 2019 and is forecasted to grow at the fastest CAGR during 2019-30.

India Hydrogen Market

India Hydrogen Market: Market Dynamics

Driver

Reduced carbon emissions in energy production

Reducing the average total energy carbon intensity over time is one of the major obstacles today and has given rise to questions regarding renewable energy solutions such as hydrogen and related goods. Clean energy hydrogen is combustible which will minimize long-term reliance on petroleum and thus reduce greenhouse gas emissions and other contaminants. Higher hydrogen

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demand led to increased funds for institutes of research and development. For instance, TATA motors in collaboration with ISRO and Indian Oil launched a hydrogen fuel cell bus.

Restraint

High Cost of hydrogen

In its free state hydrogen is not available, though it is the most abundant element. Therefore, specific methods must be used to separate it from organic compounds. At present, hydrogen is costlier than fossil fuels. The hydrogen costs range from \$4 to \$12/kg, compared with \$1.60 to \$4.80/gallon petrol. The biggest hurdle is high hydrogen prices. As a fuel, hydrogen is not economically feasible until its cost falls. At present, prices are high because of the relatively new hydrogen technologies and lack of economies of scale as well as growing demand.

India Hydrogen Market: Regional Analysis

Indian hydrogen market is segmented on the basis of regional analysis into four major regions. These include North India, South India, Western India, and Eastern India. Geographically, Western India held a major share of the market in 2019. The existence of refineries, chemical, and petrochemical industries such as Reliance Industries, Essar Oil, Indian Oil Company, Grasim Industries, Tata Chemicals, and others in the area holds the largest share of the hydrogen industry. A significant portion of the necessary hydrogen is produced from natural gas steam reforming, although a limited extent is applied to partial oxidation of residues. During the forecast period, Western India's hydrogen market should be rapidly increasing as hydrogen demand in hydrogen fuel cells is expected to rise in the forecast period.

Indian Hydrogen Market is further segmented by region into:

North India Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR

South India Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR

Western India Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR

Eastern India Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR

Key Players

Praxair India Private Limited

Company overview, Business Strategy, Key Product Offerings, Financial Performance, Key Performance Indicator, Risk Analysis, Recent Development, Regional Presence, SWOT Analysis

INOX Air Products Pvt. Ltd.

Aditya Birla Chemicals Limited

Linde India Limited

Bhuruka Gases Limited

Air Liquide India

DCW Limited

TATA Chemicals Limited

Gujarat Alkalies and Chemicals Limited

GHCL Ltd.

Indian Hydrogen Market Report also contains an analysis on:

India Hydrogen Market by segment:

By Technology

Steam Methane Reforming

Partial Oxidation of Oil

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Coal Gasification
Methanol Reforming
Ammonia Cracking
Electrolysis of Water
By End-User
Petroleum Refining
Metal Processing
Glass Industry
Edible Fats and Oils
By Region
North India
South India
Western India
East India
India Hydrogen Market Size
India Hydrogen Market Dynamics
Supply and Demand
Current Issues/trends/challenges
Competition and Companies Involved in, the Market
Value Chain of the Market
Market Drivers and Restraints

Table of Contents:

Contents

1. Executive Summary
2. India Hydrogen
 - 2.1. Product Overview
 - 2.2. Market Definition
 - 2.3. Segmentation
 - 2.4. Assumptions and Acronyms
3. Research Methodology
 - 3.1. Research Objectives
 - 3.2. Primary Research
 - 3.3. Secondary Research
 - 3.4. Forecast Model
 - 3.5. Market Size Estimation
4. Average Pricing Analysis
5. Market Dynamics
 - 5.1. Growth Drivers
 - 5.2. Restraints
 - 5.3. Opportunity
 - 5.4. Trends
6. Recent Development, Policies & Regulatory Landscape
7. Risk Analysis
 - 7.1. Demand Risk Analysis
 - 7.2. Supply Risk Analysis
8. India Hydrogen Industry Analysis

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- 8.1. Porters Five Forces
 - 8.1.1. Threat of New Entrants
 - 8.1.2. Bargaining Power of Suppliers
 - 8.1.3. Threat of Substitutes
 - 8.1.4. Rivalry
- 8.2. PEST Analysis
 - 8.2.1. Political
 - 8.2.2. Economic
 - 8.2.3. Social
 - 8.2.4. Technological
- 9. India HydrogenMarket
 - 9.1. Market Size & forecast, 2019A-2030F
 - 9.1.1. By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
- 10. India Hydrogen: Market Segmentation
 - 10.1. By Regions
 - 10.1.1. North India,By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.1.2. South India,By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.1.3. Western India,By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.1.4. Eastern India,By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2. By Technology: Market Share (2020-2030F)
 - 10.2.1. Steam Methane Reforming, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2.2. Partial Oxidation of Oil, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2.3. Coal Gasification, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2.4. Methanol Reforming, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2.5. Ammonia Cracking, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.2.6. Electrolysis of Water, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.3. By Mode of Delivery:Market Share (2020-2030F)
 - 10.3.1. Captive, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.3.2. Merchant, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4. By Application:Market Share (2020-2030F)
 - 10.4.1. Chemical, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.2. Petroleum Refining, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.3. Metal Processing, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.4. Glass Industry, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.5. Edible Fats & Oils, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.6. Energy, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
 - 10.4.7. Others, By Value (USD Million) 2019-2030F; Y-o-Y Growth (%) 2020-2030F
- 11. Company Profile
 - 11.1. Praxair India Private Limited
 - 11.1.1. Company Overview
 - 11.1.2. Company Total Revenue (Financials)
 - 11.1.3. Market Potential
 - 11.1.4. Global Presence
 - 11.1.5. Key Performance Indicators
 - 11.1.6. SWOT Analysis
 - 11.1.7. Product Launch
 - 11.2. INOX Air Products Pvt. Ltd.

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- 11.3. Aditya Birla Chemicals Limited
- 11.4. Linde India Limited
- 11.5. Bhuruka Gases Limited
- 11.6. Air Liquide India
- 11.7. DCW Limited
- 11.8. TATA Chemicals Limited
- 11.9. Gujarat Alkalies and Chemicals Limited
- 11.10. GHCL Ltd.

Consultant Recommendation

**The above-given segmentation and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.

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