Refining Industry to 2017

Asia-Pacific, Middle East and Africa to Emerge as Key Regions for Infrastructure Investments for Capacity Additions
Chapter three discusses the industry overview, industry growth, petroleum products demand, market share analysis, key trends and refining margin trends. It also discusses the factors challenging the future growth of the industry. It also gives information about the historic refining capacity and forecast.

Chapter four gives an overview of the Asia-Pacific refining industry. This chapter also contains information about the refining industry, providing an overview of key country analysis for China, Japan and India.

Chapter five contains an overview of the European refining industry. It discusses the growth of the refining industry in Europe, refinery throughput and utilization rates, key country analysis and a competitive overview.

Chapter six provides North American refining industry information, which includes refining capacity and forecasts, refinery throughput and utilization rates, key issues and challenges, a competitive overview and key country analysis.

Chapter seven discusses the refining industry of the Middle East and Africa. It contains information about the refining capacity and forecast for the region, key issues and challenges, geography analysis and a competitive overview.

Chapter eight discusses the South and Central American refining industry. The chapter also includes key country analysis for Brazil, Mexico and Venezuela.
Executive Summary

The crude oil refining industry in developed countries is highly contrasted with that in developing countries. In the former, the industry faces challenges such as slack demand for refined products, stringent environmental regulations, and higher investment needs, while in developing countries the industry is driven by a huge demand for oil, especially in regions like Asia-Pacific and the Middle East.

In the coming years, this industry will also be impacted by factors such as major additions in refinery capacities expected to come online during the 2012–2017 period in Asia-Pacific, in the Middle East and in Africa. The US and European countries will witness further upgrades of their refineries in order to meet stringent environmental norms. The shift in petroleum product consumption from gasoline to middle distillates is also expected to play a major role in shaping the future of the refining industry.

The Global Refining Industry will Grow at a Steady Rate up to 2017

Global refining capacity is expected to grow at a steady rate, from XX Million Metric Tons Per Annum (MMtpa) in 2011 to XX MMtpa in 2017, at an Average Annual Growth Rate (AAGR) of XX%. The US, China, Russian Federation, Japan and India will be the biggest refining countries in 2017, together accounting for XX% of the global capacity.

The figure below details the refining capacity of the top five countries globally during 2000–2017.
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2 Introduction

Refineries are required to convert crude oil into various products to sell on to end users. The refining industry has recently witnessed major changes. It has witnessed a major slump in recent years due to downturn of the global economy and because of the recent political unrest in the Middle East and Africa. The industry is also witnessing changes in consumption patterns and the emergence of countries from the Asia-Pacific and Middle Eastern regions as major refining hubs. The shift in product consumption patterns from gasoline to middle distillates is expected to change the dynamics of the industry. The refining industry will also be affected by the introduction of strict environment regulations and restrictions on the quality of end products.

There has been a change in investment patterns in the global refining industry. The industry is witnessing strong investment in the capacity expansion of refineries by National Oil Companies (NOCs). There is increased investment for the upgrading and modernization of refineries in the Middle East. Refiners are also investing in upgrading existing refineries in the North American and European regions because of the implementation of strict environmental regulations. However, with the demand for refined petroleum products increasing, the industry will witness steady growth in the future.
3 Global Refining Industry

3.1 Industry Overview

The refining industry is experiencing contrasting growth requirements in developing and developed countries.

Oil accounted for more than XX% of global primary energy consumption in 2011. The refining industry plays a significant role in meeting global energy needs. The increasing demand for refined petroleum products has prompted many countries to finance refining operations. As of March 2011, more than XX countries have active refineries across the globe.

Currently the industry is in an unprecedented position. Strict environmental regulations and a slump in demand for refined products is hindering the refining market in developed economies, whereas the strong demand forecast from developing economies is expected to boost the refining industry in these countries. The shift in product consumption patterns from gasoline to middle distillates will also play a significant role in shaping the refining industry. The Middle East is set to emerge as the global refining hub, through the modernization of existing refineries as well as capacity expansions. Asia-Pacific will also see major expansions in the refining industry.

The global refining capacity was XX Million Metric Tons Per Annum (MMtpa) in 2011. The US continues to dominate the global refining industry with a refining capacity of XX MMtpa, followed by China with capacity of XX MMtpa and Russia with a capacity of XX MMtpa. There are XX active crude oil refineries across the globe, with XX further refineries scheduled to commence operations by 2017. The majority of refineries are located in the main consuming markets, which include countries such as the US, China, Russia, and India. With XX refineries, the US has the largest number of refineries in the world, followed by China and Russia with XX and 36 refineries, respectively. India is also emerging as one of the leading refining markets, with XX active refineries in 2011.

The figure below shows the percentage share of active refineries in top five countries in 2011.

![Figure 1: Refining Industry, Global, Number of Active Refineries by Country, 2011](source: GBI Research, Oil and Gas Downstream Database (April 2012))
3.3 Global Refining Capacity and Petroleum Product Demand

Global petroleum product consumption was XX MMtpa in 2011, whereas the global refining capacity was XX MMtpa. The surplus refining capacity is not deterring the developing economies to undergo capacity expansions and building new refineries. A positive outlook for petroleum product demand from developing countries will result in the continued growth of global refining capacity.

The figure below compares the global refining capacity and petroleum products demand during 2000-2011.

Figure 5: Refining Industry, Global, Refining Capacity and Petroleum Products Demand (MMtpa), 2000-2011

Source: GBI Research, Oil and Gas Downstream Database (April 2012)
The table below lists the global refining capacity and petroleum products demand during 2000-2011.

<table>
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<th>Year</th>
<th>Refining Capacity (MMtpa)</th>
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Source: GBI Research, Oil and Gas Downstream Database (April 2012)
Appendix

9.1 Market Definition

Asia-Pacific refers to Australia, Azerbaijan, Bangladesh, Brunei, China, India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Malaysia, Myanmar, New Zealand, North Korea, Pakistan, Papua New Guinea, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, Turkmenistan, Uzbekistan and Vietnam.

Europe refers to Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, FYR Macedonia, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Moldova, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom.

North America refers to the United States of America and Canada.

Middle East and Africa refers to Algeria, Angola, Bahrain, Cameroon, Chad, Cote d'Ivoire, Egypt, Gabon, Ghana, Iran, Iraq, Israel, Jordan, Kenya, Kuwait, Libya, Morocco, Nigeria, Oman, Qatar, Niger, Republic of the Congo, Saudi Arabia, Senegal, South Africa, Sudan, Syria, Tunisia, United Arab Emirates, Yemen and Zambia.

South and Central America refers to Argentina, Aruba, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Martinique, Mexico, Netherlands Antilles, Nicaragua, Paraguay, Peru, Costa Rica, Suriname, Trinidad and Tobago, Uruguay, Venezuela and the Virgin Islands.

9.2 Abbreviations

AAGR: Average Annual Growth Rate
ANS: Alaska North Slope
ARA: Amsterdam-Rotterdam-Antwerp
CAGR: Compounded Annual Growth Rate
CO2: Carbon Dioxide
EPA: Environmental Protection Agency
EPC: Engineering, Procurement and Construction
EU: European Union
EUETS: EU Emissions Trading Scheme
FOB: Free on Board
GDP: Gross Domestic Product
IOCs: International Oil Companies
LPG: Liquefied Petroleum Gas
M&A: Merger and Acquisition
MMtpa: Million Metric Tons Per Annum
MW: Megawatts
NEW: North West Europe
NOCs: National Oil Companies
OECD: Organisation for Economic Co-operation and Development
OEM: Original Equipment Manufacturer
OPEC: Organization for Petroleum Exporting Countries
PSU: Public Sector Unit
Scf: Standard Cubic Feet
UAE: United Arab Emirates
Appendix

USEC: US East Coast
USGC: US Gulf Cost
USWC: US West Coast
WTI: West Texas Intermediate

9.3 References

  Available from www.bp.com/statisticalreview
- Energy Outlook 2030, (BP, 2011), www.bp.com,
  Available from www.bp.com/energyoutlook
- Short-Term Energy Outlook (EIA, Jan, Feb 2012), www.eia.gov,
  Available from 205.254.135.7/forecasts/steo/outlook.cfm
  Available from www.oilmarketreport.org/
- World Oil Outlook (OPEC, 2011), www.opec.org

9.4 Methodology

GBI Research’s dedicated research and analysis teams consist of experienced professionals with pedigrees in marketing, market research, consulting backgrounds in the energy industry and advanced statistical expertise.

GBI Research adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and the Strategic and Competitive Intelligence Professionals (www.scip.org).

All GBI Research databases are continuously updated and revised coverage

9.4.1 Coverage

The objective of updating GBI Research’s coverage is to ensure that it represents the most up-to-date vision of the industry possible.

Changes to the industry taxonomy are built based on extensive research of company, association and competitor sources.

Company coverage is based on three key factors: market capitalization, revenues and media attention/innovation/market potential.

- The estimated revenues of all major companies, including private and governmental, are gathered and used to prioritize coverage.
- Companies which are making the news, or which are of particular interest due to their innovative approach are prioritized.

9.4.2 Secondary Research

The research process begins with exhaustive secondary research on internal and external sources being carried out to source qualitative and quantitative information relating to each market.

The secondary research sources typically referred to include, but are not limited to:

- Company websites, annual reports, financial reports, broker reports, investor presentations and US Securities and Exchanges Commission (SEC) filings.
- Industry trade journals and other literature.
- Internal and external proprietary databases.
• National government documents, statistical databases and market reports.
• News articles, press releases and web-casts specific to the companies operating in the market.

9.4.3 Primary Research

GBI Research conducts hundreds of primary interviews a year with industry participants and commentators in order to validate its data and analysis. A typical research interview fulfills the following functions:
• It provides first-hand information on the market size, market trends, growth trends, competitive landscape and future outlook.
• Helps in validating and strengthening the secondary research findings.
• Further develops the analysis team’s expertise and market understanding.
• Primary research involves e-mail correspondence and telephone interviews as well as face-to-face interviews for each market, category, segment and sub-segment across geographies.
• The participants who typically take part in such a process include, but are not limited to:
  • Industry participants: CEOs, VPs, business development managers, market intelligence managers and national demand managers
  • Outside experts: investment bankers, valuation experts, research analysts and key opinion leaders specializing in chemical markets.

9.4.4 Expert Panel Validation

GBI Research uses a panel of experts to cross-verify research and forecast methodologies and drive its analytical content.

The GBI Research expert panel comprises marketing managers, product specialists, and international demand managers from leading chemical companies, worldwide.

9.6 Disclaimer

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