



The Seventeenth Biennial Edition



INTELLIGENCE

REPORT:

**BUSINESS SHIFTS IN THE GLOBAL
CATALYTIC PROCESS INDUSTRIES**

2017-2023

STUDY PRESENTATION

(Completed May 2018)



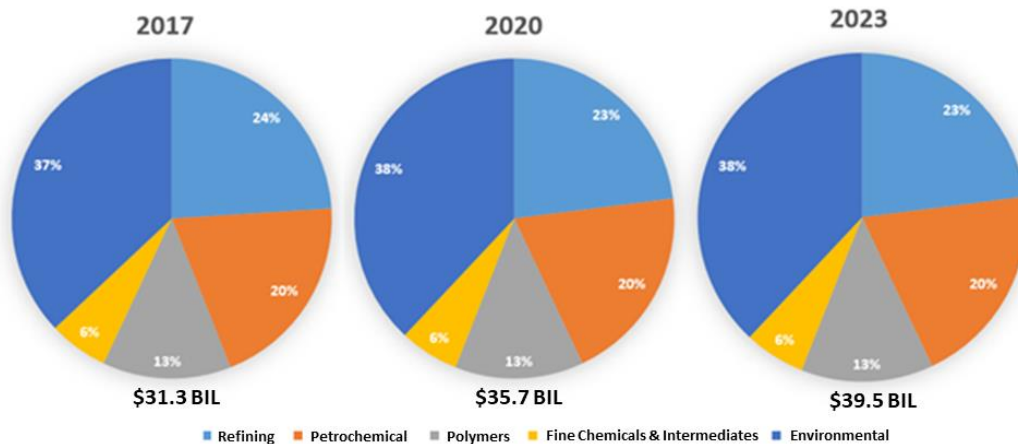
INTELLIGENCE REPORT

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Growth in the catalyst industry continues to exceed global economic GDP, with producers and process licensors benefitting from high value-added segment gains! In this report, between 2017-2023, the catalyst industry is forecast to grow at +4.3% p.a. with some segments reaching levels 2-3 times GDP. Catalysis drives the progress and innovation across our modern global society, producing over \$15 trillion annually.

TCGR has completed the 17th edition of our biennial update, “*The Intelligence Report: Business Shifts in the Global Catalytic Process Industries, 2017-2023.*” Considered the industry “gold standard,” TCGR’s report goes beyond statistics and benchmarks to provide competitive insight and analysis vital to end users in the refining, petrochemical/chemical, polymer, specialty/fine chemical and environmental markets.

A brief study synopsis indicates that, as it has in the past, environmental catalysts for emissions reduction/conversion will lead growth over the next five (5) years at 4.8% p.a., but catalysts for petrochemicals will grow equally quickly. Polymerization catalysts will grow at 4.1% p.a., with refining catalysts (dominated by transport fuels) growing at 3.7% p.a. due to efficiency gains and encroachment via EVs. The global merchant catalyst market is forecast to grow from \$31.3 BIL/yr in 2017 to reach \$39.5 BIL/yr by 2023. If you were to include licensing and other direct services, the current market exceeds \$40 BIL/yr!



Among the most significant events noted for the industry over the forecast period to 2023 are:

- The refining industry’s growth is being limited by environmental regulations and reduced transport fuels demand, some of which are being replaced by the encroachment of EVs.
- The prospects for the petrochemical/chemical industries are more encouraging than in the recent past, as producers seek to add value to their refining or feedstock positions by serving markets growing more rapidly than fuels.
- The thermoplastics industries continue to undergo consolidation in catalyst and process licensing, resulting in premium grades yielding enhanced margins in selected PE (and PP) applications.
- Environmental catalysts continue to deploy newer combinations of systems and catalysts to meet ever more stringent mandates, spreading globally. New GHG/CO₂ regulations are driving innovations for reduced NO_x/SO_x, improved energy efficiency, and new products derived from CO₂ emissions.

Full of opportunities and profit generating technologies, repeat clients have returned to subscribe to each biennial edition because the unique source provides clarity beyond the macro-views that limit other reports.

The Intelligence Report: Business Shifts in the Global Catalytic Process Industries, 2017-2023

Back by Popular Demand in 2018!

In order to increase the report's utility to senior management and executives, TCGR continues to offer a companion deliverable designed to complement the report contents, highlighting the key findings and making them more actionable. In a set of PowerPoint slides entitled, "**Intelligence Report 2018 - Exec Deck**," TCGR has extracted the critical statistical data as well as technical, market and competitive/strategic insights, and deliver a presentation-style document. TCGR's team of experts is then available to present these to subscriber audiences or they can be used to generate internal documents for strategic/competitive pursuits.

The "**Exec Deck**", and resultant Q&A during the presentation sessions, provides additional subscriber-specific value.



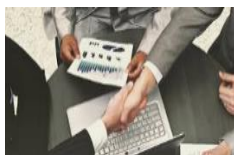
"Special Feature" Section

In order to add value/perspective(s) beyond industry statistics and commentary, the 2018 edition includes a **Special Feature** section (Section VII; see ToFC on pp. 4-22) addressing "Global Catalyst Centers of Excellence." For the first time, TCGR documents the increasingly important contributions of these organizations to catalyst R&D/science. They are often the sources for leading-edge progress addressing challenges of commercial interest and have areas of specific expertise which provide their sponsors with unique, even competitively advantaged, capabilities. TCGR's **Special Feature**, in effect, serves as a reference document for identifying opportunities for expanded capabilities in catalysis as well as potential venues for affiliation/partnership. As usual, TCGR provides insights - for the industry, by the industry - that are valuable enough to constitute, in effect, a report within a report.

The Catalyst Industry's "Gold Standard:" The Intelligence Report 2018

As the "**Intelligence Report**" has done in the past, it provides new business and technology perspectives, including:

- Comprehensive, concise and detailed industry statistics on adjusted catalyst volumes and values, including forecasts
- Producer-and user-specific developments in production and technology, including alliances, ventures and acquisitions/divestitures
- Identification of new growth opportunities across the value chain (raw materials, licensing, services, technology, etc.)
- Assessment of geographical, technological and competitive gaps
- Analysis and recommendations leading to specific actionable items



The Intelligence Report has evolved from documenting technological and commercial statistical progress into a tool for identifying strategic business opportunities and providing major investment guidance...

The report's actual Table of Contents appears on pages 4-22 and the order form appears on page 3. Further information is available at: http://www.catalystgrp.com/multiclient_studies/intelligence-report-business-shifts-global-catalytic-process-industries-2017-2023/ or by contacting John J. Murphy at john.j.murphy@catalystgrp.com or +1.215.628.4447.

A Review of Some of Our Past Analyses and Predictions ...

The sixteenth edition (2016) featured the impacts of dramatic price fluctuations in oil prices (as well as gas and other feedstocks) on segment profitability, notably in refining and petrochemicals/chemicals. Uncertainty caused delays in decision-making as well as some rationalization of production capacities. “Out of the Box” opportunities in catalysis were featured as small, but rapidly growing, applications worthy of further consideration.

* * * * *

The fifteenth edition (2014) predicted that the chemical, plastics and environmental protection segments would lead growth over the forecast period, with the outlook for the refining segment less optimistic. Each industry segment was characterized by particular opportunities, such as the deployment of new zeolites in HDD catalytic systems and the new “ALPHA II” MMA plant in Saudi Arabia. The global merchant catalyst market was forecast to grow from \$25.3 BIL/yr in 2013 to reach \$33.5 BIL/yr by 2019. If you were to include licensing and other direct services, the market approaches \$35 BIL/yr.

* * * * *

The fourteenth edition (2012) highlighted the structure, competition and factors for success in the catalytic process industries beyond the report’s other sections (namely, Section III on industry market size/growth and Section IV on new catalyst products and processes). The section looked at technical/commercial value chains and market dynamics which depict the past and current competitive landscapes.

* * * * *

All previous editions of the “Intelligence Report” series are available for purchase.
Please visit: <http://www.catalystgrp.com/tcg-resources/studies-and-publications/multi-client-studies/>

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_____ Please enter our order for **“Intelligence Report: Business Shifts in the Global Catalytic Process Industries, 2017-2023”** (completed May 2018). We understand that we will receive two (2) copies of the report. The cost of the report is US\$23,500.

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INTELLIGENCE REPORT

BUSINESS SHIFTS IN THE GLOBAL CATALYTIC PROCESS INDUSTRIES 2017-2023

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