



The Thirteenth Biannual Edition

INTELLIGENCE REPORT:

BUSINESS SHIFTS IN THE GLOBAL CATALYTIC PROCESS INDUSTRIES 2009-2015



STUDY PRESENTATION
(Completed May 2010)



INTELLIGENCE REPORT:

Business Shifts In The Global Catalytic Process Industries

2009-2015

It is clear that 2010 marks the beginning of a new decade. Fortunately, it appears that things have begun to change from the difficult 2008-09 period. As a result, it is an opportune time to reset expectations and pragmatically implement changes for 2010-11 and beyond. For this reason, a subscription to this year's "*Intelligence Report*," TCGR's bi-annual market assessment and technology evaluation of the catalytic process industries is worthwhile. The opportunities in producer, licensor and enduser markets have changed and TCGR's report recalibrates both its statistics and analyses to reflect these expectations. Our 2010 "*Intelligence Report*" is a vital reference for all of your business segments, as it has been for the last 26 years!

Specific findings in the 2010 edition reflect an uneven but emerging industry recovery, with both significant commercial and technical events worthy of notice:

- Technology development in refining catalysts went uninterrupted during the recession; major producers and developers continued to progress R&D and are now poised to take advantage of the recovery with higher value-added offerings most notably in hydroprocessing applications (e.g., for ULSD fuels);
- Petrochemical producers severely restricted R&D in the recession, which has delayed or even discontinued a broad range of application improvements, most notably in hydrogenation (e.g., edible/inedible oils and olefin purification) and dehydrogenation (e.g., styrene); notable exceptions include coal-based chemicals and conversion of renewable feedstocks;
- Polymerization catalyst and process developments continued unabated, with single-site catalysts for polyolefins and advanced co-catalysts/activators beginning to have immediate impacts on production costs, resin performance and market growth prospects, with selected types (e.g., mLLDPEs) reaching double-digit rates throughout the 2010-15 period; and
- Environmental catalysts, especially in mobile source (i.e., auto and truck) emissions controls, were devastated by vehicle production declines in the 30-40% range in certain regions; recovery to pre-recession levels is not anticipated until 2012-13, with technological gains aimed at addressing higher emission standards scheduled for implementation over the forecast period.

The “*Intelligence Report*” 2010 also addresses key topics such as:

- The refining industry’s progress towards maximizing feedstock value by optimizing technology choices.
- Downward pressure on refinery margins, and the refining industry’s ability to gain and hold onto notable price increases and volume growth.
- A predicted return to volume growth in the medium-term promises gains in alternative routes to olefins (e.g., MTO), including thermochemical routes to syngas and chemicals.
- The overhang of capacity additions in petrochemicals, nonetheless, is expected to impact returns for an extended period.
- Regional factors will continue to impact how and where technology development takes place.

The 2010 edition also includes a Special Feature section on the role of catalytic and membrane technologies in addressing the challenges of CO₂ and greenhouse gases (GHG). Specifically, the report highlights the technological developments being achieved in two key areas: (1) CO₂ capture and clean-up; and (2) CO₂ conversion to products.

Key Benefits of the “*Intelligence Report*” 2010 include:

- Comprehensive, concise 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, logistics, technology, etc.)
- Assessment of geographical, technological and competitive gaps
- Analysis and recommendations leading to specific actionable items

Rapid change requires a significant re-assessment of business strategies in order to achieve success. Let us help you to capture the advantage!

The report’s actual Table of Contents appears on pages 4-17 and an order form appears on page 3. Futher information is available at: www.catalystgrp.com/intelreport2010.html 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 twelfth edition (2008) featured the role of syngas conversion technologies for the production of olefins (MTO, MTP, etc.) and other chemicals including DME and higher ethers/alcohols. Process economics highlighted the competitiveness of these alternative routes and noted the importance of technology access.

* * * * *

The eleventh edition (2006) highlighted Emerging Geographical Markets for Catalysts – the former Soviet Union (FSU) and India, including catalyst production and technology R&D (by country/region and application).

* * * * *

The tenth edition (2004) documented the increasingly important role of catalyst and process changes in gas-to-liquids (GTL) and gas-to-chemicals (GTC) technologies.

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INTELLIGENCE REPORT:

BUSINESS SHIFTS IN THE GLOBAL CATALYTIC PROCESS INDUSTRIES

2009-2015

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