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Report Abstract

Quarterly Business Analysis

Quarter 1, 2011

Petrochemical Cost Price and Margin for Olefins, Polyolefins, Vinyls, Aromatics, Styrenics, Polyester Intermediates and Propylene Derivatives. Analysis for the United States, Western Europe, Middle East and Asia

March 2011

Nexant

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www.chemsystems.com

Griffin House, 1st Floor South, 161 Hammersmith Road, London W6 8BS, UK
Tel: +44 20 7950 1600 Fax: +44 20 7950 1550

Nexant, Inc. (www.nexant.com) is a leading management consultancy to the global energy, chemical, and related industries. For over 38 years, ChemSystems has helped clients increase business value through assistance in all aspects of business strategy, including business intelligence, project feasibility and implementation, operational improvement, portfolio planning, and growth through M&A activities. Nexant has its main offices in San Francisco (California), White Plains (New York), and London (UK), and satellite offices worldwide.

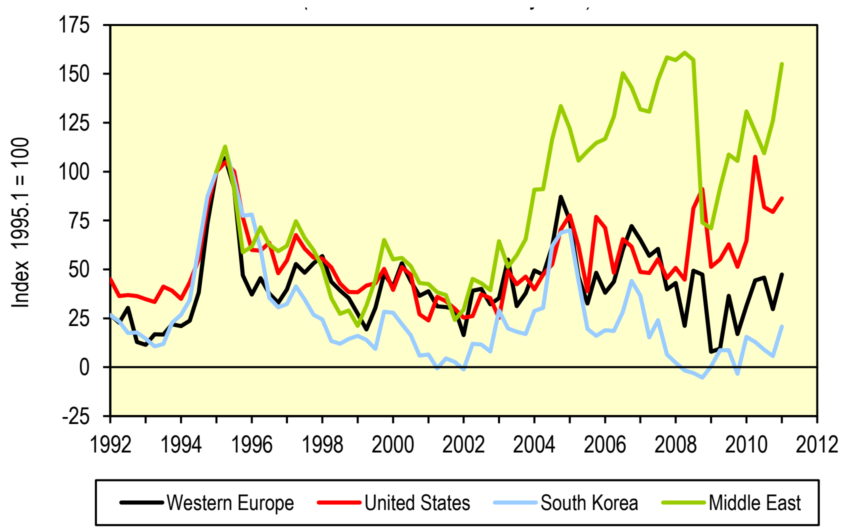
Nexant's Quarterly Business Analysis reports assess the current production economics for commodity petrochemicals, putting them into context with developments in the underlying market dynamics. A review of production economics in the Middle East has recently been added to the long running analysis of economics in Western Europe, United States and Asia. The reports are published as part of ChemSystems / Petroleum and Petrochemical Economics Programme (PPE). Subscriptions to the programme are available from www.chemsystems.com. For further details or to request a sample copy, please email chemsystems@nexant.com.

STRONG PETROCHEMICAL MARGINS DEFY RAPID ESCALATION OF CRUDE OIL PRICES AT START OF 2011

The Petrochemical industry enjoyed a strong start to 2011, defying the sharp rise in crude oil prices. Profitability of the industry improved greatly in the first quarter of the year, with average margins in most regions rebounding to their highest since the global economic crash in the second half of 2008. This was achieved despite intense pressure on the cost burden of procuring feedstocks, as crude oil prices accelerated upwards, approaching $120 per barrel in March. Base petrochemicals faired particularly well, with olefins and aromatics achieving some of the strongest gains in margins.

The cost of procuring feedstock once again became a critical concern of most petrochemical producers at the end of 2010 as crude oil prices resumed their upwards trajectory. Margins were under intense pressure as Brent FOB crude oil prices strengthened to close the year near $100 per barrel. Crude oil prices climbed sharply through the first quarter of 2011 as the political crisis in Libya deteriorated, approaching $120 per barrel in March. Naphtha prices followed crude oil markets, with average prices rising almost ten percent over the last quarter. Asian naphtha prices climbed above $1000 per ton in March for the first time in 30 months.

Regional Petrochemical Industry Profitability
(Cash Margin Index Q1 1995=100)



Despite on-going intense pressure on feedstock and energy costs in the first quarter, the petrochemical industry actually achieved much stronger profitability at the start of the New Year. With markets mostly tightening, producers achieved large price rises to cover the increase in feedstock costs and restore margins which had been severely eroded at the end of 2010. Average margins of the West European Industry leapt 60 percent, climbing back above the average of the last decade. Producers in the United States remained highly competitive, as average ethane prices remained largely detached form firming oil prices. Average margins across the United

States industry improved ten percent. Meanwhile, average profitability of petrochemicals production in the Middle East approached a record high, after climbing 23 percent, on strong netbacks and steady feedstock costs.

European petrochemical markets were mostly viewed as relatively tight at the start of the year. However demand remained moderate, after the growth rate of the European economy slowed in the closing quarter of 2010, increasing just 0.2 percent. The mounting cost burden to downstream consumers compounded fears of demand destruction; yet volumes ultimately remained steady. Tightness was principally due to a short supply side. Frequent technical failures at crackers restricted supplies of olefins through January and February and the onset of the spring maintenance schedule compounded shortness in the supply side. Average operating rates across the industry remain well below the long term average, languishing at just 82 percent.

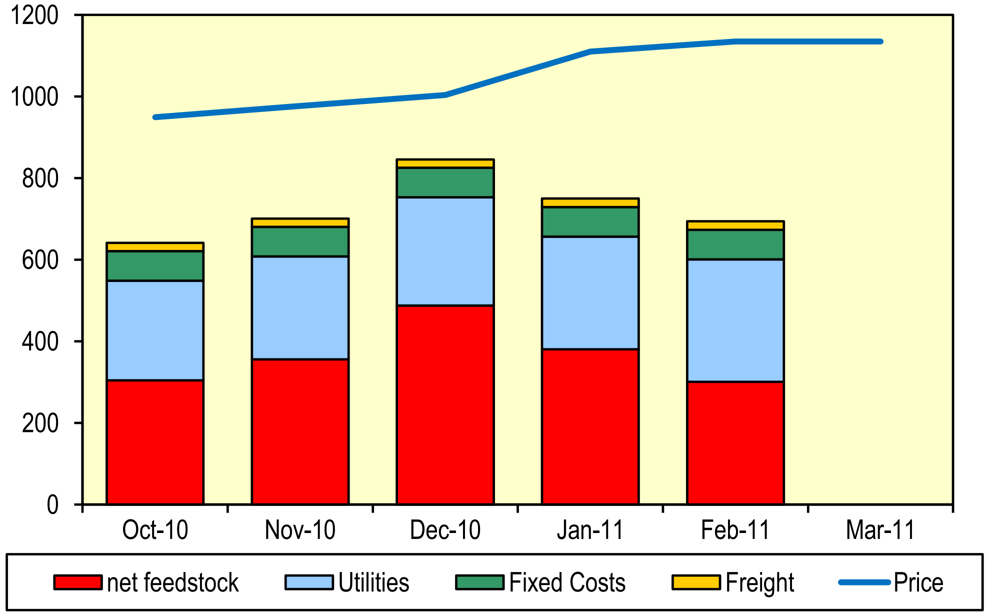
Demand for petrochemicals in the United States improved steadily through the first quarter. Domestic consumption improved modestly, with further positive economic data reported. However most of the growth in demand was attributed to a further increase in exports as US producers were increasingly competitive in global markets. Meanwhile the supply side shortened through the quarter, squeezing markets tight. Inventories were relatively low at the start of the year, following a five percent reduction in ethylene production in quarter four. A spell of harsh winter weather and several extended technical failures at crackers further restricted production of olefins and derivatives in the first quarter.

Demand in Asia was interrupted by the lengthy Lunar New Year holiday, observed in many countries. The devastation caused by the Earthquake and tsunami which hit Japan in March added uncertainty to the market towards the end of the quarter. The announcement of a further rise in Chinese interest rates compounded pressure on already sluggish demand in China. Some traders were seen to be exporting material previously imported into China. Production outages from scheduled turnarounds and technical issues continued to restrict supply, maintaining a balance with the slow demand side of the market. With almost 23 percent of Japans ethylene capacity and 37 percent of propylene capacity halted after the earthquake, Asian markets tightened towards the end of the quarter.

Those producers in the Middle East, with access to low cost ethane were largely protected from the cost pressure as crude oil prices escalated further. Netbacks from principle export markets increased on renewed strength of crude oil. Tight polyester markets across the globe supported a sharp rise in MEG profitability, lifting export margins to their highest ever, except for a brief period at the end of 2007 when production in Saudi Arabia was severely disrupted. Meanwhile, polypropylene achieved the highest ever export margins for producers back integrated to propane dehydrogenation units. Average profitability of the industry as a whole approached the peak achieved in 2008, even though average crude oil prices remained almost twenty percent below the peak set in the middle of 2008.

The strong industry wide performance masks some very different trends across sectors of the industry. While the olefins and base petrochemicals sector captured very strong profitability, the intermediates and polymers sectors struggled to add much further value. Margins were increasingly taken upstream, with any producers not integrated to a cracker suffering frail profitability. The key exception was the polyester value chain, where tight global markets supported margins from polyester back up to *para*-xylene and MEG.

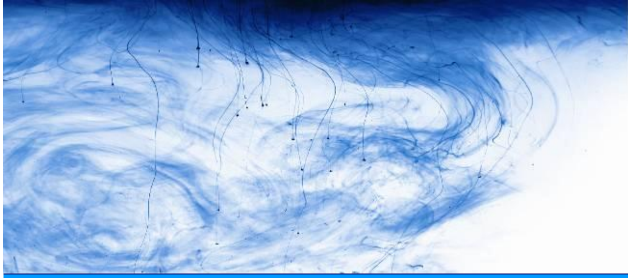
Western Europe Leader Naphtha Cracker Cost Price and Margins
(Monthly Average)



Steam crackers producing ethylene achieved strong profitability in the first quarter, despite being directly exposed to the surging price of feedstock petroleum products. European ethylene contract prices increased sharply, supported by escalating crude oil prices and tight supplies, with March Settlements up almost €200 per ton from December. Meanwhile, a sharp increase in the value of propylene and aromatics co-products more than offset the rise in raw material costs and net feedstock costs for European naphtha crackers actually fell sharply. With production costs falling against rising prices, average margins strengthened more than \$150 per ton, reversing losses made at the end of 2010.

Meanwhile, European propylene markets remained tight at the start of 2011, with firm demand as downstream consumers restocked after extensive supply restrictions as a consequence of strike action at refineries towards the end of 2010. A busy schedule of maintenance at refineries and both the regions propane dehydrogenation units kept supplies short. Contract prices leapt to record highs, with the February settlement at €1185 per ton standing twenty five percent above Decembers contract price, narrowing the discount on ethylene to just €10 per ton to ethylene.

Nexant is proud to announce the expansion of their industry acclaimed Quarterly Business Analysis programme, which assess production economics of commodity petrochemicals, putting them into context with developments in the underlying market dynamics. Following the widespread acceptance of monthly olefin contracts in Western Europe, the majority of material traded in Western Europe and the United States is now valued relative to a monthly reference contract price. The QBA programme now includes monthly average production economics in these principle markets. The reports are published as part of ChemSystems Petroleum and Petrochemical Economics Programme (PPE). Subscriptions to the programme are available from http://www.chemsystems.com.



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