

THE NEW ECONOMIC REALITY

Higher oil prices and associated volatility have significantly changed the relative profitability and competitiveness of chemical sector, although the relationship between various chemical groups and supply chains are impacted differently. Companies will need to revisit the basics of supply and demand, taking into account production costs, substitution, alternative production routes, as well as trade and logistical linkages among various regions.

■ Dr Mosongo Moukwa

The oil markets for the remainder of 2012 will be driven mainly by fundamentals and, in particular, by the supply side: very tight crude oil stocks, low spare capacity from the Organisation of the Petroleum Exporting Countries (OPEC), and significant non-OPEC supply disruptions. In addition, both actual and potential supply disruptions from Iran will be an important factor for the markets.

Extreme volatility in oil prices is here to stay. It will affect every sector of the economy, including the chemical industry and allied sectors such as the paints and coatings industry. Indeed, most raw materials used in the paints and coatings are hydrocarbon-based, and their price is directly affected by both the oil and gas prices. This has important implications for executives, who are challenged to know where to put their bets.

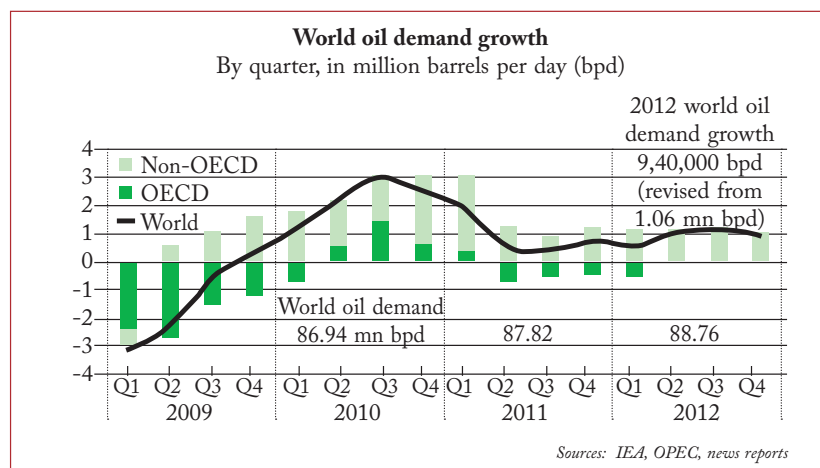
Demand for oil

There are many doubts regarding the demand for oil. OPEC and the International Energy Agency (IEA)

had revised their forecast for oil demand growth in 2012 based on worries about the weak global economy, and in particular, the Euro zone crisis. Steeper declines are observed in the US and the OECD-Europe due to a combination of economic stagnation and gradual gains in efficiency. Demand in Europe is down by 8,000,000 barrels per day in just two years, primarily because of the concerns about the debt crisis in Europe. Demand growth has been concentrated in developing world, with China using more than 10 million barrels per day.

to boost social expenditures across the region. It is estimated that in order to meet these obligations, expenditures for the increased production of oil (upstream allocations) will require almost \$ 4 trillion between now and 2035 – on a sliding scale starting at \$ 100 billion annually.

OPEC, which accounts for 30 million of the 80 million barrels released to the market every day, will need an average crude price of \$ 80 a barrel now and more than \$ 120 within a few years. This is due to increasing capital outlays to maintain the flow of oil. It can choose to reduce output as a means to push prices



Tightness of the supply

The tightness of the supply is mostly a result of supply side issues. Barclays Capital estimates that the problems in Sudan, Yemen and Syria alone could together curtail over one million barrels a day output – more than one per cent of global supply. That is now compounded by the European ban on Iranian imports that took effect on July 1. This will deprive the European Union of up to 6,000,000 barrels a day of crude. If this happens, India and Japan will lose tens of thousands of barrels of daily supply and the world will be short of 1.6 million barrels a day.

The aftermath of the Arab Spring has obliged Middle Eastern governments

higher and can increase it to meet greater demand. Oil is also priced in dollars. Thus, movements in the exchange rate have impacts on crude. The weaker the dollar, the higher the dollar price of oil because it takes more dollars to buy a barrel.

Impact of oil price on the chemical industry

The impact of oil prices on the price of chemicals has become more difficult to predict. Applying historical product-to-feedstock price spreads to outlooks based on a given margin and return is no longer valid. This was possible years ago when past and future plants relied on the



same basic technology, built in the same region, and all players had similar capital investment expectations.

Sustained high oil prices have had significant effects on the entire chemical industry. Generally, higher feedstock costs increase the manufacturing cost of most petrochemicals; this has impacted the profitability of many companies. As high oil prices alter the price of some chemicals more than others, the relative profitability of some products are affected more than others. This is already affecting the chemical industry.

Take propylene, for example. Propylene price has been traditionally linked to its alkylation value. With rising oil prices around 2005, the alkylation value was pushed higher, and propylene price detached from this pricing mechanism. The marginal use of propylene instead became polypropylene (PP) substituting for high density polyethylene (HDPE), and a new pricing level was established. By 2010, the US propylene market became tight as propylene demand continued to grow faster than supply. In the new tight market, propylene then moved up the value ladder to a point where its price is being set by PP competing in some applications with polystyrene (PS).

Geographical differential prices have also been altered. The world is more globalised, where the long-term price setter may be situated in a different region with a different cost structure. Chemical flows, traditionally coming from North America and Western Europe, are more complex today and affect the price differential across the various regions of the world. The emergence of powerful new producers with different cost positions and decision mindsets in regions such as the Middle East and China has changed the landscape altogether.

Discontinuities are also emerging along the hydrocarbon and petrochemical chains. The discovery of abundant ethane containing shale gas has added new supplies of ethylene. These new sources, however, will only partly cover the global demand for ethylene, estimated to reach 160 million metric tonne per year by

2020. New naphtha crackers will still be required in order to meet the demand requirements. The price of naphtha, gas and other light distillate oil-based products are related to the price of oil; thus they are also affected by the macro-economy and geopolitical uncertainty. Naphtha-based ethylene crackers generate substantial quantities of by-products such as propylene and butadiene, and the price of ethylene depends upon the price the producers receive for those by-products.

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technologists to look for inter-polymer substitution among the commodity polymers. For example, capital-intensive manufacturing processes may fare much better than feedstock-intensive processes; energy-intensive processing will suffer and non-petroleum-based products will be preferred.

Turbulence has increased. It is neither uniform across the hydrocarbon and the petrochemical chains, nor across countries, nor steady over time. The current economic crisis is not the cause of the market turbulence. It is simply the latest symptoms of the volatility inherent in global markets and the various discontinuities that have emerged over the last ten years.

Welcome to the new oil economy

There will be a rise and fall in oil prices moving forward. Nonetheless, the

overall trajectory will continue upward. With less supply and constant demand – at a minimum – oil prices can only go higher. Higher oil prices and associated volatility have become the new economic realities. It has changed the business dynamics and competitiveness of chemical sector. Companies will need to go back to the basics of supply and demand, taking into account various factors that include production costs, substitution, and alternative production routes, among others.

An increase in the prices of gas and crude oil is significant for the paints and coatings industry. It represents a source of major concern for manufacturers of paints and coatings, as 60-70 per cent of the raw materials are based on petrochemicals derivatives. The situation in India is such that out of the 300 raw materials used in paints and coatings, about half of them are imported. Paints and coatings consist of three major components.

Even in the most volatile environment, opportunities can be found. Periodic golden opportunities are interspersed among many smaller chances. The trick is to keep in the information flow, talk through alternative scenarios, and keep discussing possible opportunities for the management team to identify the most attractive.

The flow of information must be in real-time to keep abreast of the fluid state of affairs to spot emerging opportunities and threats early enough to act on them. Executives must work through possible scenarios to assess how the process might evolve and what it might mean for the industry or for their particular business. They must also study what is happening in other countries to apply some lessons. ■



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