Butadiene: Defying The Odds To Hit New Heights

Spring 2012
David Potter, Clement Choo, Nicole Johnson
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Following its stellar performance last year and strong showing so far in 2012, Platts global butadiene editors David Potter, Clement Choo and Nicole Johnson discuss the issues surrounding butadiene and ask whether with recessionary trends biting across the globe the product can continue to swim against the tide.

If there was one undoubted success story in the European petrochemical industry in 2011, one product that producers knew would continue to provide strong margins, then butadiene was it.

Prices reached extraordinary levels during the year, with record high prices recorded by Platts again and again during the first half of 2011.

Following a switch from a quarterly to a monthly contract price mechanism, the European CP rose consistently between January and August; increasing Eur1,185/mt in eight months from Eur1,340/mt in January to a record high CP of Eur2,525/mt ($3,398 at current rates) in August.

The spot market moves were even more staggering at times, with the global clamor for spot material seeing European and US consumers fighting for every spare molecule and pushing assessed price levels up to a high of $4,780/mt FOB Northwest Europe.

Turnarounds in the US Gulf Coast brought stories of export cargoes being held for weeks outside destination ports, with buyers preferring to pay the substantial demurrage costs rather than lose the product to another buyer.

In fact, some market sources said the increase in value of the product while it sat on the vessel was more than enough to cover those demurrage costs in any case.

Despite hitting these record high levels, demand remained solid for butadiene in many derivative sectors.

The ability of the tire sector in particular – where butadiene is used in the manufacture of synthetic rubbers – to both absorb and pass on the increases of butadiene meant that even when prices inevitably began to slip, compared to other olefins, butadiene continued to offer producers a solid return.

So what is the outlook for 2012?

In a period of austerity and global downturns, can European butadiene still be the shining light for olefins producers?

REALITY BITES IN THE EUROPEAN AUTOMOTIVE INDUSTRY

There are some indications from the automotive sector that suggest that demand may be under pressure.

Despite a healthy year of sales for tire manufacturers – France’s Michelin recorded its second-highest earnings ever of Eur1.29 billion ($1.68 billion) – the automotive industry in Europe saw a downturn in 2011.

According to the European Automobile Manufacturers Association (ACEA) demand for new cars fell by 1.7%, with new registrations for the year totaling 13.111 million in Europe. Significantly, this was the fourth consecutive yearly fall in new car registrations in Europe and was the lowest level of demand for new cars in over a decade.

And according to the ACEA, the decline was not restricted to countries where economic turmoil has been greatest as most of the significant markets shrank – from a 2.1% decline in France to 4.4% in the UK, 10.9% in Italy and 17.7% in Spain.

Germany was the exception as demand for new cars grew by 8.8% over 12 months. It remained the largest market with a total of 3.174 million new registrations, followed by France (2.252 million units) and the UK (1.941 million units).

Given the extremely fragile nature of the European economy, the outlook for the European automotive sector looks like getting worse before it gets better; a potentially uncomfortable scenario for butadiene producers.

According to automotive industry expert Ian Henry from AutoAnalysis, this trend was likely to continue during 2012.

Henry believes that “Spain and Italy will be worst hit among the larger markets” while “Portugal, Greece, Hungary and any other nations which turn out to have real or looming fiscal crises” will also see downwards pressure on new car take up.
In its Global Auto Report released at the end of last year, Scotiabank echoes Henry’s views noting that “Western Europe will remain the weak link [for automotive sales], with volumes dragged down by declining sales in the debt-ridden Mediterranean nations.”

Scotiabank added: “There is also a risk that the weakness could spread to the core countries of Northern Europe, if the debt crisis is not contained.”

During the downturn of 2008-09, the automotive industry was able to create and rejuvenate demand by a series of federal lead schemes to incentivize buyers of new cars.

While this was considered a success, there is less chance of this occurring in 2012, with no new “cash for clunkers” schemes on the horizon from any of the major car producing countries in Europe.

Ian Henry believes that there may be such a scheme coming from France, but was cautious of the chances of success.

Henry said: “France will, I suspect, try to avert a collapse, by introducing a new incentive scheme. But given the success of the previous schemes, I wonder if there is demand for new cars which could now be tapped by a new scrappage scheme or similar idea.”

Of the major producers, Germany was still likely to lead the way in Europe, although even the powerhouse of European automotive production was likely to be hit.

According to JD Power, German light vehicle sales for 2012 are forecast to be down marginally from 3.402 million in 2011, to 3.353 million this year.

Part of the reason for the fall in German production could be an increase in production in China, where production facilities of German brand cars was rising to accommodate the strong demand for luxury cars.

Chinese and US demand was seen as a key factor in supporting and increasing sales of groups such as BMW and Mercedes-Benz during 2011. Sales of the marques may well be maintained, but the production hub is changing according to Ian Henry.

“Production by BMW, Mercedes and VW-Audi in China is growing, so this will account for some rising demand for German brands there, but at the expense of German production,” Henry said.

Russia’s emergence as major player in automotive production looks set to continue however, with JD Power forecasting an increase in sales of Russian producer light vehicles of 2% from 2.646 million last year to 2.703 million in 2012.

This downturn was being reflected in the tire markets, both in Europe and globally.

A source at a major tire producer in Europe told Platts in January: “The tire markets are slowing down very quickly and we’re reducing our activities. We definitely need less butadiene now than at this time last year.

“Passenger cars are not strong and the replacement tire market is not as good as it was. The mild winter has also reduced the demand for winter tires.”

The industry source added that they were also expecting less demand to come forward from the global markets, with some difficulties expected in both Asia and the US.
This would point to a potentially difficult year in terms of butadiene demand in Europe from an automotive perspective, although other regions were expecting a more positive view, suggesting that exports of butadiene or may offer support to the European market over the year.

**ASIA AND THE US TO MAINTAIN THE DRIVE?**

Both JD Power and Scotiabank believe that in the US and in Asia there could be clear growth in automotive sales.

According to JD Power’s 2012 forecast, Chinese sales will increase 8.4% to 19.667 million over the year, while Japan is also expected to see a rise in light vehicle sales as the country looks to rebound from 2011’s tsunami-induced slump.

Japanese car sales fell to the lowest level since 1987 in 2011, but Scotiabank expects “a double-digit increase” in 2012, while JD Power is forecasting an increase in sales of 9.7% to 4.664 million.

This is likely to offer some level of support to butadiene prices globally and indeed the Asian market has been the driver of a price rally during the early stages of the year so far.

Prices in the Asian region began to climb during the final stages of 2011 through the whole of January.

Platts data shows that after reaching a low of $1,550/mt CFR China November 11, the market had hit $3,000/mt by January 27, while the FOB Korea market rose from $1,560/mt November 4, to $3,200/mt at the close of January.

These rising price levels have allowed Europe in particular to offset any sign of weaker domestic demand by exporting large quantities of butadiene through the final quarter of 2011, when around 50,000 mt of butadiene was exported and January, when approximately 18,000 mt of European butadiene was shipped east.

This in itself has caused concerns for consumers of other butadiene derivatives, where the ability to absorb the rising feedstock cost is not as strong as the tire market.

One European trader explained that for producers of tires consuming butadiene, there is less exposure to price volatility; a point supported by the relatively unchanged levels of demand from tire producers in 2011, despite record high butadiene pricing.

“Butadiene is somewhat irrelevant in terms of pricing for a tire manufacturer. If the cost increases by 10%, they won’t stop consuming. The only reason they will stop producing tires is if they can’t get the raw material,” the trader said.

In contrast, producers of acrylonitrile-butadiene-styrene and polybutadiene suffered more acutely in 2011 because of the cost of butadiene.

Latex producers in Europe saw downstream demand fall far earlier and more quickly than any other derivative, while the main impact was seen in Chinese ABS and polybutadiene production, which is seen as the largest consumer sector of butadiene globally.

Other consumers of butadiene, believe that this factor may well be the key dynamic in stopping the price increases seen at the beginning of 2012 in China from mirroring the levels recorded last year.

“Globally, demand for butadiene is down, so why are prices still rising?” noted one frustrated consumer.

Whatever the demand picture in Asia, prices have risen so far this year and the region has led the price recovery for butadiene. This has meant cracker operators and extractors in Europe have still able to gain some positive margins on the product over a period when other olefins and polyolefins struggled.

The early year price rises in Europe have been completely at odds with the domestic market raising the prospect of consumers selling their term contract volumes to those looking to export.

One consumer said that he had been bid $3,300/mt for 1,000 mt of butadiene in early February, compared to a gross monthly contract price of Eur1,935/mt ($2,550/mt).

The consumer added: “I don’t make this sort of margin on my derivatives. If you don’t have the demand, but you do have a contract to buy butadiene what do you do? You sell the butadiene.”

Others felt that the combination of a structural shortage in the US, firm natural rubber and a supportive automotive market means that producers of butadiene derivatives that can’t absorb price increases may need to make some hard decisions going forward.

One trader said: “We’ve seen a shift in mindset among European consumers over the past two years and they will sell butadiene now. Sometimes they would be foolish not to sell. They can make big margins doing nothing.”

“If their customers are not providing them with the same value then they should cut them off and sell the spare butadiene. You either increase your margin or get rid of the customer,” he added.

**HOW HIGH WILL NATURAL RUBBER BOUNCE?**

Part of the reason for the Asian rise, despite reduced production in ABS and polybutadiene, has been the continued strength of natural rubber, which in turn affects its synthetic counterparts. This has led to either resistance or acceptance of butadiene feedstock prices when they rise or fall.

Tire producers are the biggest consumers of natural rubber, especially for those based in China.

In 2011, the country imported 2.1 million mt of natural rubber, up 13% from 1.86 million mt in 2010, Chinese customs statistics showed. That figure is expected to rise in 2012 according to the Association of Natural Rubber Producing Countries, which expects China to import 2.950 million mt during 2012.

The ANRPC comprises Thailand, Indonesia and Malaysia – the top three natural rubber producers – Cambodia, China, India, Papua New Guinea, the Philippines, Singapore, Sri Lanka and Vietnam.
The higher imports rode on increased vehicle sales in China, which totaled 18.5 million units in 2011, up more than 2% year on year, according to the China Association of Automobile Manufacturers in early January.

In 2012, China’s natural rubber demand is forecast to rise by 5% to 3.77 million mt, according to a report from Goldman Sachs published in December.

Including rubber compound imports, the ANRPC said China is estimated to have consumed 3.503 million mt of natural rubber during 2011, up 2.5% from 2010. This year, the country is expected to consume 3.610 million mt.

At the end of December 2011, China’s natural rubber stockpiles reached 365,600 mt, nearly eight times the 46,100 mt recorded at the end of July.

Among the reasons cited for the inventory surge was weak demand from local tire makers, who in turn, cited poor demand from US and Europe.

In January, market participants saw gains in spot rubber prices. This resulted from a plan by Thailand to spend Baht 15 billion ($472 million) to buy 200,000 mt of natural rubber from local growers and support local natural rubber prices at Baht 120/kg.

The plan was approved by the Thai cabinet on January 24. Buying was expected to begin in mid-February, but was delayed to the middle of March due to legislative processes.

Many in Asia have attributed the rise in natural rubber prices to the rebound in butadiene levels. Expectations of further increases in natural rubber have also led to a rush to secure March butadiene cargoes in China and South Korea despite overall demand being down on historical levels.

China is Thailand’s major customer, and is expected to buy 1.2 million mt of natural rubber from the Southeast Asian country, unchanged from 2011.

In 2011, Thailand produced about 3.4 million mt of natural rubber, or nearly 34% of the 10.1 million mt produced by members countries of the ANRPC.

In January, the Thai Rubber Association has forecast that Thailand will export 2.8 million mt in 2012, up from about 2.7 million mt in 2011, and the country will produce around 3.15 million mt versus 3 million mt year on year.

Natural rubber output from Thailand may increase to 3.5 million mt in 2012 from 3.21 million mt in 2011, the state Office of Agricultural Economics has said.

A rise in production is expected, according to the Goldman Sachs report, which forecast that a natural rubber glut will emerge in 2012, which could lower costs for tire makers.

This year, the market is expected to swing to a 413,000 mt surplus from an 87,000 mt deficit in 2011, the US bank said.

“If natural rubber prices average around $4.00/kg in 2012, as we are forecasting, tire makers would benefit from a nearly $1.00 input price decline compared to 2011, when manufacturing inputs trended around $5.00/kg. We expect the Japanese tire makers to reach peak margins around Q2 2012 on the combination of this factor and the boost from price hikes,” Goldman Sachs said.

ANRPC estimates that natural rubber production in 2012 will grow by 3.1% to 10.415 million mt during 2012, compared to about 10.100 million mt in 2011.

The group’s natural rubber exports slowed to 7.655 million mt for 2011, a 2.4% rise from 2010, which recorded a 10.4% rise from 2009.

“The lower export growth during 2011, as compared to 2010, largely reflects the commodity’s sluggish demand outlook in the backdrop of unfavorable developments in the global economy. Total volume of exports anticipated for 2012 is 7.828 million mt, up 2.3% from 2011,” the ANRPC said.

There are market concerns that tire producers would turn more to synthetic rubber as opposed to natural rubber, although tire makers are unlikely to make quick changes to their respective formulas for tires.

The synthetic rubber industry faces its own challenges as new capacity comes online but feedstock butadiene supply is lagging.

In April 2011, China’s Tianjin Lugang Petroleum & Rubber started up a new 100,000 mt/year styrene-butadiene-rubber plant at Dagang District, Tianjin province.

In December 2011, China’s Keyuan Petrochemicals has started commercial production at its new 70,000 mt/year styrene-butadiene-styrene plant at Ningbo, Zhejiang province.
In May 2012, PetroChina’s Fushun Petrochemical is expected to begin operations of a 200,000 mt/year SBR plant.

As for new butadiene production capacity in Asia, in late September 2011, BASF Yangzi Petrochemical Company, or BASF-YPC, brought a new 130,000 mt/year butadiene extraction plant online.

In Indonesia, Chandra Asri started construction of a 100,000 mt/year butadiene plant at Cilegon, Banten province, which will be operated by Petrokimia Butadiene.

The plant is expected to begin operating in mid-2013 and about 50% of the production is expected to be sold to domestic tire makers while 50,000 mt/year is targeted at overseas buyers, especially in South Korea.

In February 2013, Indian Oil Corp. is expected to start operating a 138,000 mt/year butadiene extraction plant at Panipat.

**THE ONGOING PULL FROM THE US**

Alongside the support of natural rubber values, the global butadiene market is also likely to be eyeing developments in the US Gulf Coast, which has become a focal point of the market in recent years.

With light cracker feeds such as ethane from North American shale gas plays being the preferred choice in US steam crackers, the region has become increasingly short of butadiene and other olefins.

There is so far little expectation that this will change in the short term, although plans are in place to increase the domestic supply with TPC Group looking into a detailed engineering study of on-purpose butadiene production.

TPC’s plan would utilize an existing idled dehydrogenation unit at the company’s Houston plant.

The unit would use normal butane as the primary feedstock. Normal butane is a natural gas liquid found in the US Shale gas plays, which could provide an abundant, low-cost feedstock for the plant.

Growing interest in shale gas production shifts focus away from butadiene supply tightness

As supply constraints remain a growing pressure in the US butadiene market, participants must also confront the gradually materializing shift to lighter feedstocks in the US due to the development of the Marcellus shale region.

A method of utilizing NGLs as opposed to naphtha, however, has surfaced as an alternative that would be advantageous in a butane-long US market.

“The propane from Marcellus shale can be exported, but the butane we can make something out of, crude C4,” the buyer said.

As the final month of the first quarter arrives, so the prospect of adding to the butadiene production capacity in the US nears, and could ease recent years of chronic supply tightness in a region that is typically net short butadiene.

Although there are some objections to the dehydrogenation plant, including the abundant waste as a result of operations and high costs to operate the plant, US market players generally see butane-based production as a viable option for the future but only should firm plans for production be made.

“There are projects down the road a couple of years, and unless there’s a commitment to start them, this source of supply is still up in the air,” the buyer said.

“The technology needs work, and this process will not come without some capital investment. In the short term, the next five or so years, the [US] region will still be dependent on naphtha-based butadiene. If naphtha [prices] continues to increase, this will still set the floor for US butadiene producers. Butane-based makers will just enjoy greater margins in the future,” another source said.

Industry sources agreed it would be at least a handful of years before more on-purpose butadiene plants come into play in the US. Likewise, the production of on-purpose was not expected to alter the fact that the US will remain net short material in the coming years.

For the time being however, the net shortage of butadiene in the USGC, will provide producers in Europe in particular with a clear sales outlet, that looks set to offset any fall in domestic demand.

While the initial price rally in January has been driven by Asian market increases, many in Europe believe that the USGC will offer the main level of market support during the first half of the year. This is

<table>
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<tr>
<th>Company</th>
<th>State</th>
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supported by turnaround season in the US, which — alongside the structural shortage of C4 supply — will likely mean strong demand for imported material.

One major European producer was already looking to send any excess European butadiene to the US and said: “The US looks more healthy to me than Asia. I think [prices] are rising on speculation. Can the derivatives in Asia really absorb the price increases? Short term? Yes. Longer term, the US is more sustainable. There’s more derivative demand.”

And yet, the strength of that demand was questioned by some.

Whereas the 2011 economic outlook supported the buying and consumption of butadiene at all costs at certain times in the USGC, the 2012 picture for some derivatives was less straightforward.

Early indications are that the US has shown interest in importing material, but buyers would appear to be more price-sensitive than in the previous two years.

One trader said: “There is buying interest in the US now, but there’s more resistance from buyers compared to last year. But if there are buyers who need to do something then they will have to pay.

“Some derivative buyers say it isn’t worth it though. They may need it and be able to process it, but there’s a limit to the price rises they can take.”

The automotive outlook in North America appears positive for 2012 however and with many sources believing that the tire sector is less prone to butadiene price shifts than derivatives such as ABS, this could still drive the market forward.

JD Power forecasts an increase in light vehicle sales growth of 8% compared to 2011, with Scotiabank also seeing a similar trend.

“Rising pent-up demand, a strengthening labor market and improving credit availability will lift passenger vehicle sales in the US to 13.5 million units in 2012,” according to Scotiabank, while noting that vehicle scrappage rates in the US are now around 4%, 2% below the average of the past two decades. This is likely to lead to a greater number of vehicles being scrapped and replaced, Scotiabank says.

While there is a growing consensus that the US will continue to provide Europe with an outlet for excess butadiene during the first half of 2012, some have questioned whether this needs to be so.

The lack of derivative demand in Asian polybutadiene and ABS should mean that there is more than enough butadiene to cover demand globally according to one European consumer.

At full capacity Asia consumes around 466,000 mt of butadiene per month, however Chinese production in polybutadiene and ABS has been reduced by 20% during 2011, with economics on the end product believed to be negative.

This should mean a surplus of around 37,000 mt/month in Asia and in a global market the consumer argues that the Asian demand should be the key to setting price levels rather than the US.

“The US consumption is peanuts in a global picture. Asia is the big thing. If people want to pay high prices for 5,000 mt, what relevance is that against 200,000 mt?” the consumer said.

He continued: “The US will see a shortfall of 30-40,000 mt/month [during turnaround season]. Asia is down by a similar amount.” With Europe also long the consumer argued that butadiene is “long globally.”

“We’re not short we’re misallocated,” he said.

WILL EUROPEAN SUPPLY CRACK?

For all the support the European butadiene market has received from global strength, producers do acknowledge that the market is net long.

Producers are currently benefiting from the weakness of other olefins and polyolefins down the petrochemical chain where the growing specter of Europe’s lack of competitiveness has been brought into sharp focus as European economies falter.

There has been an investment drought in the European olefin industry, with the last cracker built in the early 1990s. European crackers suffer from a competitive disadvantage. For example, according to US major Dow Chemical, the average ethylene cash cost for a US ethane cracker is around $650/mt (adding that for a Middle East ethane cracker it’s just $75/mt or so). Which means that US ethane cracker cash costs are around $300/mt cheaper versus current Asia and European capacity, Dow said.

Not only has there been no new investment in European crackers, olefin markets have been further undermined by new capacities in the Middle East, Asia and Americas. According to KPMG, new global capacity being developed in the coming years will render 14 of 43 crackers in Europe uneconomic by 2015. Added to this Europe also loses out on economies of scale. The new world scale crackers being built reach a capacity of 1 million mt/year, while average cracker size in Europe is less than half of that.

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<td>Porvoo</td>
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<td>Aug-Oct 2012</td>
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In Europe, rather than relatively expensive natural gas and NGLs, the feedstock of choice has been naphtha. Naphtha-fed European crackers have a significantly lower cost advantage. According to LyondellBasell, naphtha crackers operate near breakeven with co-products like butadiene as a significant profit contributor, the producer said in a presentation in December.

Steam cracker margins in Europe – both spot and contract – have been in the red since beginning of Q3 2011. The high cost and low demand environment in Europe was punitive to margins. Cracker operators optimized runs to avoid oversupply. Operating rates were pegged at 70-75% by the end of 2011. Stock replenishment efforts in a backdrop of inflationary energy prices incentivized crackers to ramp up marginally to 80-85% in January 2012.

These low rates – while needed to reduce losses of weak performing products – have actually helped to maintain the relative strength of butadiene and supported cracker profitability.

While there have been those who showed measured optimism for 2012, the current state of the European economy does little to inspire confidence that trading conditions will lead to increased cracker rates any time soon.

Alongside the reduced cracker rates, supply of butadiene has also been capped by the preference for lighter cracker feedstock slates in Europe such as propane.

This was particularly the case in January, where milder weather across Northwest Europe saw a lack of demand for propane from the heating

**PROSPECTS FOR BYPRODUCT RAFFINATE-1**

While butadiene has gone from one record price to the next in the past two years, its co-product raffinate-1 has struggled to be profitable in Europe and the early signs of 2012 suggest that this trend is set to continue, providing a cause for concern for those running extraction units.

The factor of Crude C4 to European naphtha has risen from 1.40 CIF Northwest Europe at the end of 2011 to 1.65 by February 10 2012 as the value of butadiene and demand from US extractors has seen firm demand for C4’s from local extractors and traders looking to export.

The hard running of the extraction units has increased raffinate-1 supplies however and weak demand has forced the factor of raffinate-1 to naphtha to fall to 1.20 CIF NWE.

The prospects of raising the factor looked bleak however.

Raffinate-1 is used in the manufacture of polymers such as poly isobutylene, which can be used for sealants and adhesives or to produce MTBE Methyl tertiary-butyl ether (MTBE), which is used in gasoline blending as an octane booster.

Demand in Europe was said to be “weak” for poly isobutylene, with the market suffering because of sluggish demand in Asia, although di-isobutylene was called “pretty good” by one source.

The demand from MTBE (methyl tertiary butyl ether) has also become limited over the past two years as demand for gasoline in Europe has decreased, although current firm MTBE prices have encouraged good rates of production according to sources.

This has not help raffinate-1 however, with producers saying that continued ample supply is the key to weak prices.

One producer said he had “serious problems in finding my spot product a home” while a second producer added that the multiple production options for raffinate-1 meant buyers were rarely under pressure when buying.

"Whereas butadiene can only come from the extraction units, butylenes [extracted from raffinates] can come from other sources and consumers have more access to product.”

Producers – while keen to maximize the strong values of butadiene – are aware of the impact on overall profitability of the raffinate-1 stream.

One producer acknowledged the raffinate-1 “inertia” compared to climbs in the Crude C4 factor was “a concern.” The producer added that although it was difficult for producers to increase the value of raff-1, “it shouldn’t mean producers shouldn’t try.”

An industry source believed market fundamentals meant the factor was unlikely to change and said: "The rise in C4’s has been driven by butadiene, so there’s no reason why raffinate should climb too. It’s well supplied now that all the extraction units are back in place.”
market. This saw propane prices fall well below European open spec naphtha, meaning operators took advantage of the price differential.

From a butadiene perspective this was less attractive with propane yielding 0.01 lbs from each lb of feed compared to 0.04 lbs/lb from naphtha.

Despite this, supply remains comfortable in Europe as shown by the plentiful exports to Asia during Q4 and January.

In fact, the price levels seen in the global markets have encouraged producers to run hard, while those with extraction units have also been looking for additional Crude C4 to take advantage of the margins provided by the butadiene contract levels and spot export prices.

One producer said: “We are running at full rates in our units. It makes sense to make as much as possible with these prices. Europe may be long, but Asia and the US will help us.”

A second producer supported this view adding: “If the US is seriously short of C4s then Europe doesn’t really matter as the US will take our product.”

So, with all this in mind, how will butadiene fare over 2012?

By early March, despite the start of turnaround season in the US, there was still no obvious sign of increasing demand in the US and a possible slowdown was also being witnessed in Asia. Prices were still strong however, with Asian buyers recently seen above $4,000/mt and a FOB NWE March parcel also confirmed bought at $3,726/mt.

Part of these price levels can be attributed to higher raw material costs, however, and in particular a strong naphtha price.

The current European butadiene delta against Crude C4, while still well above Eur600/mt ($807/mt), is some way short of August 2011, when the butadiene CP delta to CC4 in Europe hit a staggering Eur1,421/mt according to Platts data.

If prices are to match the extraordinary price levels – and more importantly the extraordinary margins – achieved last year then butadiene will have to ignore a period of global economic uncertainty and depressed demand in derivatives.

The question of whether it can do this remains to be seen....