

Nexant/ChemSystems' Commentary on Asian Energy and Chemicals July 2009

China's Indices Down from Last Year...

The National Bureau of Statistics reports that China's consumer price index (CPI) and producer price index (PPI) dropped 1.7% and 7.8% year on year in June, respectively. The CPI dropped 1.1% in the first six months of 2009 while the PPI fell 5.9%. China's economy has been in deflation since February. The CPI is expected to bounce back in October-November while the PPI is likely take longer to recover.

Bank of Japan Reports Economic Conditions still severe

Japan's economic conditions remain weak and severe but have not worsened with the aid of government spending. Many regions are still experiencing the effects of the economic downturn but some report that exports and production have begun to increase. Japan is expected to show little GDP growth for 2Q2009.

Sipchem and Hanwha invest \$90m JV

South Korea's Hanwha and Saudi International Petrochemical Company (Sipchem) have jointly invested \$90m in a new petrochemical project at Al-Jubail, Saudi Arabia to come onboard in 2013. The new venture includes a 200 kta EVA plant and a 125 kta plant for polyvinyl products.

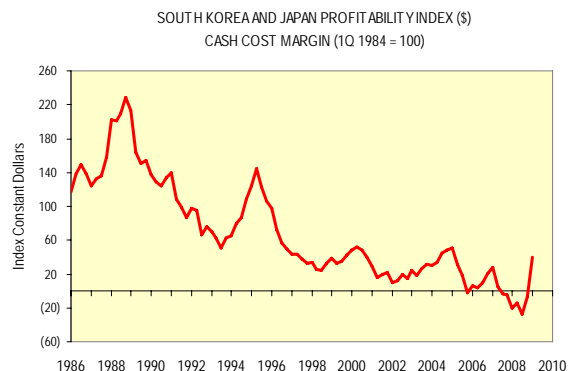
Liaoyang Petrochemical builds China's first refinery for Russian crude...

Liaoyang Petrochemical, a subsidiary of PetroChina, has started construction of a 10m t/a refinery designed to process crude oil imported from Russia. The project began around mid-July with a 2010 start up date. China has signed a deal for a loan of \$25bn to Russian firms Rosneft and Transneft in exchange for 15m kta of crude oil supply from Moscow for 20 years starting in 2011.

Nexant/ChemSystems' Analysis of the Asian Industry for the 1st Quarter of 2009

Profitability has been tough for Asian producers in 1Q2009 facing declining margins or low trade volumes. Supply has mostly been weak with producers reluctant to ramp up operating rates. The supply situation in Asia has, in general, tightened this quarter due to producers reducing

operating rates and even idling units. The Asian Petrochemical Profitability Index (Japanese and Korean margins tracked by Nexant) recovered modestly, despite continuing low Korean profitability, as the Japan Profitability Index increased.



Market Segment Recap for 1st Quarter 2009

• **Crude Oil**

Crude oil prices remained essentially unchanged in 1Q2009 at about \$41/bbl after declining \$11.6/bbl on average from 4Q008. Government policies and measures to revive economies, with OPEC's efforts to reduce supply, have brought the market into balance. Tight supply of fuel oil and brief recovery of **naphtha** and **gasoline** demand have lifted refining economics.

• **Olefins and Intermediates**

Asian **olefins** demand increased slightly in 1Q2009 as credit markets in China improved. Demand remained fragile, hindered by rapid deterioration of a number of key domestic economies. Cracker operating rates were much reduced and increased imports from the Middle East maintained length in the supply side. Rising **naphtha** prices and the weak market took its toll on margins, with Korean laggard plant margins falling to below breakeven.

Demand for **ethylene** and **propylene** across Asia as a whole increased in 1Q2009. Asian olefins markets remained broadly balanced in 1Q2009, with cracker operating rates moved down to meet regional demand. Operating rates lowered with pressure from flagging margins. SEA spot **ethylene** prices increased in 1Q2009

reaching \$600/ton. **Propylene** prices in SEA strengthened relative to ethylene as lower cracker operating rates shortened propylene supplies. South Korean leader margins fell \$500/ton and laggard margins fell below breakeven.

The Asian **VCM** market tightened in 1Q2009 due to lower operating rates, and scheduled shutdowns. CFR SEA spot VCM prices increased to \$564/ton. Japan VCM prices declined due to lower ethylene costs. Margins stayed below breakeven for integrated and non integrated Japanese producers. Korean VCM margins rose above breakeven for integrated and non integrated producers.

Aromatics supply was limited by low **benzene** demand. A majority of THDA and TDP plants across Asia remained closed or operated at low rates only to cover contract volumes. Weaker benzene demand led to a fall in prices.

- **Polymers**

Asian demand for **LDPE** showed little sign of recovery. Demand has been low but without the de-stocking seen in 4Q2008. SEA **LDPE** price averaged \$940/ton. Non-integrated S. Korean **LDPE** margins improved due to falling ethylene prices yet integrated margins fell due to increased cracker costs. South Korean **LDPE** prices fell, improving margins for non-integrated producers. Asian **LLDPE** market remained difficult for producers but the volatility and decline seen in 4Q2008 somewhat abated. SEA **LLDPE** prices were more stable. Due to declining ethylene price, non integrated margins in S. Korea improved while integrated margins fell. The **HDPE** market in Asia underwent some stabilization during 1Q2009. SEA prices recovered \$100/ton. S. Korean integrated margins fell below historical average levels.

Polypropylene demand remained poor in parts of Asia. Some producers were able to improve supply while others were forced into further operating rate cuts. Prices remained mostly unchanged as propylene prices increased. South Korean Leader cash margins declined remaining around break even. SEA polypropylene prices were relatively unchanged but with increasing propylene prices, margins came under some pressure.

SEA **PVC** prices decreased as the market weakened in 1Q2009. Chinese demand stayed sluggish and the market oversupplied. SEA prices decreased to \$653/ton. Margins were strong for Japan but South Korean integrated producers margins fell below breakeven.

The Asian **styrene** market was undersupplied despite weak demand due to plant turnarounds and low operating rates. The shortage of styrene did not prevent the Japanese price from falling while raw material costs also decreased. Korean and Japanese producers experienced an increase in margins. **Polystyrene** producers cut operating rates as downstream demand was poor and styrene supply was restricted due to large turnarounds in the Asian market. Japanese producers' cash cost margins were still positive and above historical averages while South Korean margins also improved but remained below breakeven.

- **Other Chemicals**

MEG margins in Asia made a slight recovery but integrated margins declined. Demand made a cautious recovery but new producers in Middle East hindered price increases. **Mixed xylenes** contract price in Japan decreased, supported by tighter supply and recovering polyester demand. Mixed xylenes margins from reformat extraction improved considerably to a new record high. **Acrylonitrile** markets in Asia have been relatively stronger than other regions. South Korean producers' margins decreased as prices fell to match the decline in feedstock costs.

Note: (1) Ton herein is a metric ton (tonne). (2) More detail on the various conclusions above can be obtained from Nexant/ChemSystems' multi-client reports and single-client services. (Please see contact information below.) (3) This newsletter was last updated in July 2009.

- **2nd Quarter 2009 Asian Summary Review**

Crude oil prices increased during 2Q2009 as the market responded positively to some reports of improvements in the global economic situation. Asian olefin markets tightened considerably through 2Q2009 with particular strength in Chinese polyolefin demand. In the Asian aromatics sector, Japan and South Korea reformer margins remained, strong supported by high benzene prices and a robust polyester market. MEG profitability declined in all parts of Asia despite a temporary run up in spot prices.