



# Japan, one year later

**Japan's petrochemical sector was hit by a devastating earthquake and tsunami that hit the country on March 11, 2011. One year later, most plants are back on line, except for some MX capacity. However, as our Asia team explains, new challenges have appeared that hold the industry in its grip**

Japan's petrochemical industry is still struggling to recover from the devastating earthquake and tsunami on March 11, 2011, as the sector grapples with production disruptions, especially in aromatics.

Japan, a key supplier of isomer-grade mixed xylenes in Asia, saw a major disruption in the wake of the quake. Both CM Aroma's 270,000 mt/year MX plant at Chiba and JX Nippon Oil & Energy's 470,000 mt/year MX plant at Sendai were shut.

The JX plant was to have restarted at the end of March this year, but it now seems unlikely as the company was said to be seeking around 5,000-10,000 mt of MX for delivery in March.

A trader said early March that JX's move might be an indication that it may not be able to help ease the current isomer-MX supply tightness in Asia by the end of the first quarter, something that the market had been expecting.

"With JX buying March cargoes, the balance is tight. Moreover, with the gasoline season starting in April, it is most likely that MX supply from JX will resume only in H2 2012," a market watcher said early March.

The peak gasoline demand season usually runs from April to June/July and JX is likely to retain isomer-MX in its gasoline pool rather than offer it for spot sale.

#### **OLEFINS PRODUCERS FACE NEW CHALLENGES**

Japan's steam crackers had escaped serious damage from the March 11, 2011 disaster and so were able to recover much faster.

Japan Petrochemical Industry Association data showed that steam cracker operations dropped to 88.9% in March last year, from 95.7% in February, but by May had recovered to more than 90%.

Mitsubishi Chemical had to shut its steam crackers at the Kashima petrochemical complex in eastern Japan because downstream plants, notably its vinyls units, at the same site had been forced to shut due to damage from the tsunami. The two steam crackers, with a combined ethylene production capacity of 850,000 mt/year and propylene production capacity of 430,000 mt/year, were restarted over May and June.

All propylene units in Japan have also returned to pre-quake levels after JX Nippon restarted its Sendai residue fluid catalytic cracker mid-February. The RFCC can produce 100,000 mt/year of propylene, of which around 8,000-9,000 mt/month are exported.

But now, steam cracker operators are facing a new challenge from high naphtha feedstock costs and a strong yen, which are cutting operating margins. As a result, they have reduced their run rates to below pre-quake levels.

The latest JPIA data shows that the cracker operating rates were at 83.1% in January, lower than 88.9% in March last year following the quake.

Data released by the Ministry of Economy, Trade and Industry showed that in February, Japan's ethylene production fell 4% month on month to 525,600 mt, which was also down 11.9% from a year earlier.

The lower year-on-year operating rates at naphtha-fed steam crackers indicate weak demand for ethylene as they typically boost operating rates in February/March to build up inventory ahead of peak maintenance season in March/April.

The major reason is that margins to produce ethylene from naphtha had been positive for most of the first quarter of 2011 in Japan. But margins turned negative in April, and despite a switch to positive in May, they turned negative again in June and have remained in the red as of mid March.

#### **PVC EXPORTS EXPECTED TO REMAIN LOW IN 2012**

In the wake of the quake, Japan's PVC exports dropped because several plants at Kashima were shut. Just after the disaster, Japan, one of Asia's largest PVC exporters, imported around 10,000 mt of PVC from Taiwan, South Korea and the US.

According to the Vinyl Environmental Council, Japan's PVC exports in 2011 were 427,070 mt, down 35.3% from 2010.

But market sources said the drop in exports in 2011 was not only due to the earthquake, but also due to the strong yen, which made Japan-origin PVC less competitive.

Market sources said Japan's PVC demand for reconstruction would likely limit exports in 2012. But VEC data showed that domestic PVC demand in 2011 was 1.039 million mt, ticking up a mere 0.7% from 2010.

Reconstruction work in the quake-hit area has been slow, with rubble still being cleared out early 2012. If reconstruction work goes ahead in full steam in 2012, it could mean that PVC output would be diverted from exports for more domestic use, an industry source said.

PVC is widely used in the construction industry to make pipes, window frames and walls.

#### **PETCHEMS DEMAND MAY BE HIT BY POWER SHORTAGE**

But a problem that could hit downstream demand for petrochemicals in Japan is a looming electricity shortage during the June-August summer months.

All but two of Japan's 54 nuclear reactors are shut as of early March, accounting for 2.268 GW, or 4.6% of the country's total installed nuclear capacity of 48.96 GW, according to Platts calculations. Nuclear capacity represents 21% of Japan's total installed power generation capacity of 228.479 GW.

In 2011, companies had to cut their power consumption over the summer months, and 13 nuclear reactors were operating at the time. Now with even more nuclear capacity shut, there is a fear that the situation could be worse this year.

Although petrochemicals complexes have their own power generation facilities, downstream industries such as automobiles are heavily dependent on the power grid.

In the winter, however, another peak demand season that runs from December to February, there were no blackouts or forced cuts in electricity consumption largely due to energy-saving measures that were adopted across the country.

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