

Global sulfuric acid—2014 in review and outlook

By: Fiona Boyd, Argus Media

In the Fall 2013 issue of *Sulfuric Acid Today*, excess supply was beginning to emerge that resulted in weaker sulfuric acid market prices throughout the fourth quarter before a recovery in February 2014.

One of the factors that contributed to increased supply toward the end of 2013 was reduced demand from phosphate fertilizer producers. While most sulfuric acid used by phosphate fertilizer producers is produced internally through the burning of elemental sulfur, producers still purchase incremental sulfuric acid volume in the merchant market, which plays a role in balancing global trade.

Compared with the second half of 2013, conditions in the phosphate fertilizer market during the second half of 2014 are stronger in terms of demand, and subsequently, prices. For example, the Tampa diammonium phosphate (DAP) export price from the start of the third quarter 2013 through the first week of September was in the \$395-465/tonne freight-on-board (fob) range with the high exhibited the first week of July and the low during the first week of September. For the same time period this year, prices were in the \$490-513/tonne fob range, representing higher prices and less volatility than the prior-year period. As a result, this has provided some sulfuric acid demand support to the merchant market.

Meanwhile, supply from base metals smelters, the primary source of acid traded in the market, has been stable. On the consumption side, market participants report industrial demand for sulfuric acid has been stronger than last year although in key markets, such as the United States, there is no significant sector or driver being cited.

So while the stronger phosphate fertilizer market and apparent firmer demand from industrial sulfuric acid consumers in 2014 would suggest higher prices than in 2013, there have been factors resulting in greater availability of sulfuric acid compared with last year, which has limited potential for upward price movement.

South Korea and Japan are sources of significant volumes of sulfuric acid traded in the global market because of the prevalence of base metal smelters in the region. In 2013, South Korea exported close to 2.9 million tons of sulfuric acid, or 19 percent of total global exports, while Japan exported around 2.6 million tons, or 17 percent of the global total. For both countries, Chile was the second-largest market served with it taking 17 percent of South Korea's export volume and 25

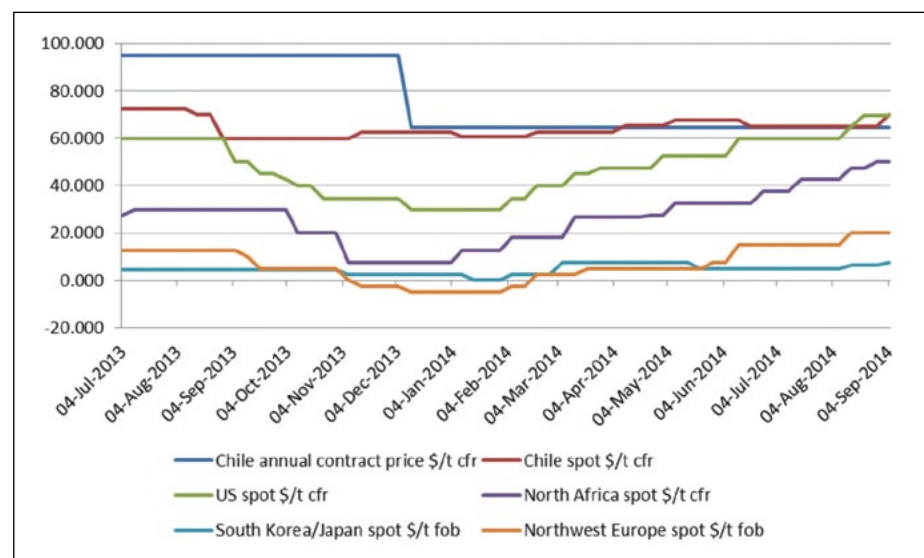
percent of the volume exported from Japan. The supply from the two countries accounted for close to 1.2 million tons of the 2.8 million tons Chile imported in 2013. Clearly, Chile has been key for Asian smelter acid producers as an outlet for their involuntary production.

Conditions in 2014 have been markedly different, however, as a result of freight costs from the key supply region to the largest import market. The freight costs have been outstripping prices that Chilean buyers were willing to pay. The annual contract price in Chile for 2014 is \$60-69/tonne cost-in-freight (cfr), compared with the 2013 annual price of \$90-100/tonne cfr. As of early September 2014, sulfuric acid vessel freight rates from South Korea/Japan to Chile were in the \$70-80/tonne cfr range, implying any shipments under the 2014 annual price would result in a loss as

September. In comparison, prices were in the \$0-10/tonne fob range for most of 2013.

Some market participants have been surprised at the level of price support without the typical trade movement of South Korean and Japanese acid making its way to Chile. This implies that factors including improved demand from phosphate fertilizer producers and industrial consumers in 2014 over 2013 have effectively counterbalanced the loss of demand from Chile.

Moving forward, Chile's requirements will remain a critical factor in balancing the global market as Chile's domestic production increases and the level of growth in consumption exhibited in prior years is not sustained as some consuming facilities close. This will result in Chile's offshore import needs peaking, resulting in the need for key exporting regions continuing to rely on alternative markets.



high as \$20/tonne based on freight alone. As of the end of July, Chile's imports from Japan for the first seven months of the year were down 47 percent compared with the prior-year period and imports from South Korea were down close to 51 percent. Imports from the two countries accounted for only 27 percent of the 1.3 million tons of acid Chile imported in 2013, compared with the 47 percent supplied in 2013 as a whole.

To deal with the loss of Chile as an outlet for its production, suppliers in South Korea and Japan have had to increase volumes to alternative markets, mainly within the Asian region, including China and Thailand. This has often been at the expense of price, with assessed prices reaching negative levels in January 2014. Since moving out of the -\$5/tonne fob range as February commenced, prices have only reached a peak of \$10/tonne fob as of early

September. Chile's import requirements, along with whether or not the contract price in the primary import market will remain below freight rates from the key South Korea/Japan market, will be relevant in 2015.

Meanwhile, factors in changing supply and demand in other regions will also impact the market in 2015. For example, the PASAR smelter in the Philippines is expected to double its capacity during the first half of next year from around the current 600,000 tonnes/year. A natural destination for this volume would be southeast Asia. But if competing against supply from South Korea and Japan (if Chile once again is not a viable outlet in 2015) the additional supply could put downward pressure on prices. Adding another layer of complexity is a primary sulfuric acid consuming site in the Philippines, the Philphos fertilizer plant, remains down following damage sustained

from Typhoon Yolanda in November 2013. It is unclear if the facility will resume operations in 2015. An extended outage would result in even more pressure to place the PASAR volume offshore. At the same time, the Taganito nickel leach project in the Philippines, which began consuming sulfuric acid in 2013, could consume more acid in 2015. However, increased supply from China is expected too, with the addition of new smelting capacity there, which could limit the country's ability to absorb offshore imports.

In other regions of the world, however, there is an increase in demand emerging. In the United States, the closure of PotashCorp's (PCS) sulfur-based sulfuric acid plant in Geismar, La., by the end of the first half of 2015 will result in the need for acid to be purchased in the merchant market to fulfill demand rather than use acid produced internally. This is expected to tighten supply in the U.S. Gulf coast region and potentially allow for a higher volume of offshore imports.

While overall consumption of sulfuric acid is forecast to increase, a significant portion of this will come through sulfur-based production for internal consumption, which will have a limited impact on the traded market. This includes addition of new capacity in Morocco to support OCP's phosphate fertilizer operations.

At the same time, new sulfur production capacity as new sour gas processing and oil refining capacity comes on stream is forecast to result in a surplus in supply in 2015 following deficit years in 2010-13 and forecast for 2014. This could result in downward pressure on sulfur prices, although this is expected to be more pronounced going into 2016 as the forecast surplus increases. This could impact the sulfuric acid market in terms of influencing price ideas or, for regions where sulfur is used as an index to represent costs for the raw material such as in the United States, limiting potential increases.

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