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Argus White Paper:

India's sulphuric acid consumption on the up

Indian demand for sulphuric acid is rising, boosted by phosphoric acid expansions and growing speciality fertilizer production, but a bleak outlook for phosphates prices may temper domestic output

India is regularly the lowest priced sulphuric acid cfr region in the world, owing to its close geographic location to large base metals smelters in South Korea, Japan and China and corresponding lower freight rates from these destinations compared with other cfr destinations.

The Indian subcontinent is the world's largest diammonium phosphate (DAP) importer, with volumes able to top 6mn t/yr. Domestic production can reach the same level depending on raw material costs and the competitiveness of Indian fertilizer producers against growing and integrated producers in China, the Middle East and north Africa, but local production has lagged behind imports in recent years.

Growth market: P2O5 capacity lifts consumption

Sulphuric acid contract negotiations are underway between Indian buyers, Asian smelters and global traders for delivery during the 2020-21 Indian fertilizer year from April-March, with most buyers requesting increased volumes.

Negotiations are set to continue for a few weeks based on buy-sell price ideas ranging from the mid-$20s/t cfr up to $40/t cfr.

Some early agreements have been reached on a fixed and formula basis but the majority of volumes and pricing is yet to be agreed.

Sulphuric acid imports this year rose significantly and will close out the year at around 1.68mn t thanks to some increases in demand, and the indefinite closure of the Vedanta-owned Sterlite copper smelter in Tamil Nadu, which removed more than 1mn t/yr of supply.

But as 2020 progresses, further demand is expected to facilitate phosphoric acid (P_2O_5) capacity expansions and a shift to producing sulphur added fertilizers.

Swing factor: APS production

Headline phosphates such as DAP, MAP and NPKs dominate the phosphoric acid requirements, and therefore baseline sulphuric acid demand, but sulphur added fertilizers are creating additional demand.

Ammonium phosphate sulphate (APS) is growing in popularity for Indian producers, to address sulphur deficiency in soils planted with grains, pulses and oilseeds.

In the past decade, various groups including the Food and Agriculture Organization and the Sulphur Institute (TSI) highlighted the issue of sulphur deficiency in Indian soils. The TSI estimated in 2014 that around 40pc of India's arable land had varying degrees of sulphur deficiency.

The result has been to increase manufacturing of the APS grade 20-20-0+13S, which equates to 20pc nitrogen, 20pc P_2O_5 and 13pc sulphur.

The kicker for sulphuric acid demand is that every tonne of 20-20-0+13S requires sulphuric acid to manufacture the 20pc of P_2O_5 component, plus an additional 0.4t of sulphuric acid for the +13 sulphur component.

Fertilizers
illuminating the markets

Imports: prices of raw materials and phosphates will determine imports

India is expected to import 1.8-1.9mn t of sulphuric acid in 2020, according to *Argus* estimates. But indications from buyers who are more reactive to changes in raw material and finished phosphate prices indicate a much wider spread.

The high end of estimates from all importers could tip 2mn t for the year, but this is not considered likely. A low end scenario would be flat to slightly lower on 2019 levels at 1.6mn t.

Most buyers agree contracts based on the Indian fiscal year from April-March, but a growing number of contacts run on different 12-month periods. The following data is on a January-December calendar year.

Coromandel

Coromandel (CIL) expects its total sulphuric acid requirement to reach 850,000-900,000 t/yr, of which around 75pc is expected to be agreed under long-term contract.

It has numerous production sites for various fertilizer products, but two of key interest are Vizag and Kakinada in Andhra Pradesh state.

CIL imported 590,000t to these ports in January-December 2019, according to *Argus* data.

Imports to Kakinada are at 249,000t, and are expected to remain steady in the coming year with the next capacity expansion at the site expected to slightly decrease sulphuric acid consumption.

For CIL to import the high-end of the expected range, it would require around 650,000t at Vizag — near double current imports. January-December imports to Vizag are at 331,000t.

The top end of the requirements would depend on capacity utilisation and the demand for APS fertilizers, as CIL's expanded P_2O_5 capacity will require only an additional 165,000t of sulphuric acid imports based on increased sulphur-burner production, and the expectation that P_2O_5 imports would cease.

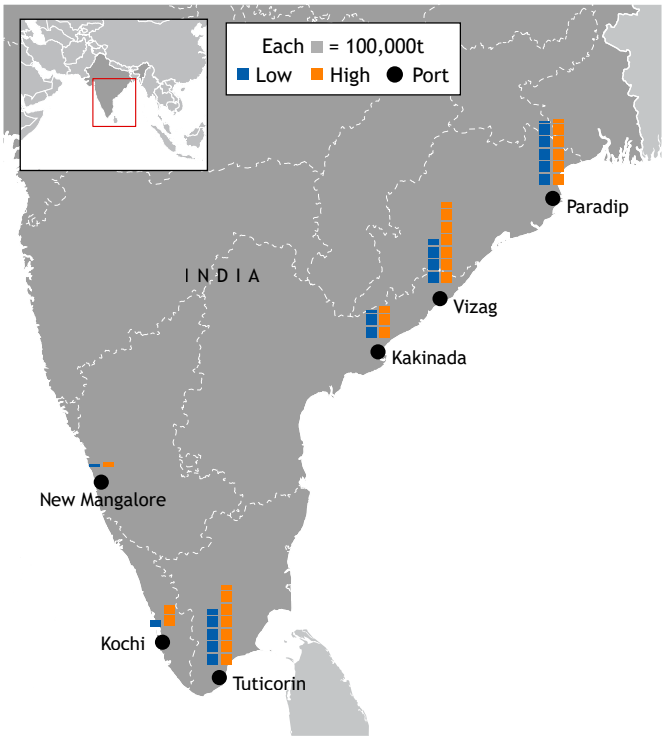
CIL increased its tank capacity at Vizag this year, with both ports now able to take full size vessels.

Greenstar

Greenstar is expected to have a 2020 annual requirement of around 640,000 t/yr. It has settled contracts covering around half of this with different sellers.

Arrivals to Greenstar's receiving port of Tuticorin were at 447,000t in 2019, with the port receiving on average two 18,000t cargoes each month.

India sulphuric acid demand



Greenstar's planned expansion for NPKs has been put in indefinite hiatus, although phosphoric acid capacity is expected to ramp up to 150,000 t/yr during the coming year.

Demand from parent company Wilson International for imports through Tuticorin is expected to increase partly due to Greenstar's higher phosphoric acid production, but also as Wilson International increases it distribution in local and west coast Indian markets.

Sulphuric acid tank capacity at Tuticorin will rise to 35,000t.

Iffco

Indian Farmers Fertiliser Co-operative (Iffco) is in talks for its annual supply agreement but typically agrees volumes for the Indian fiscal year.

There is no expectation of capacity expansion in the next few years to increase sulphuric acid demand, but the buyer has significant tank capacity at Paradip, and will swing between sulphur-burning and sulphuric acid imports, depending on the price.

Iffco also has P_2O_5 supply agreements with joint venture Jiffco — with the bulk of these arriving at Kandla. But around 15,000t of sulphuric acid has been discharged at Kandla this year.

Iffco imported 504,000t of sulphuric acid in 2019 to Paradip, a 12pc decrease on the year, as it maximised sulphur consumption sourced from the domestic market.

PPL

Paradeep Phosphates Limited (PPL) all but exited the import market in 2016 when its expanded sulphur burning capacity came on line.

Work is underway on increasing its P2O5 capacity, but this demand is still covered by it current sulphur burner output. Further DAP expansions are slated, but yet to be approved.

PPL received no imports in 2019, but sold a small volume of sulphur-burned acid domestically during the year.

Fact

Once a perennial buy tender tease, Fertilisers and Chemicals Travancore (Fact) made five awards this year to secure a total of 61,000t.

Fact's west coast receiving port of Kochi took only one import cargo in 2018 and only small volumes of domestic cargoes in the years prior, but demand in 2020 could reach 200,000t.

The increase in import demand is due to the shutdown of the Sterlite smelter, and increased production of APS fertilizer. Fact produces 20-20-0+13S at Kochi, and occasionally issues tenders to import the grade.

MCFL

New Mangalore Chemical and Fertilizer Limited (MCFL) imported 33,000t in 2019, well up on previous years, and also attributed to the Sterlite outage.

Marginal gains: sulphuric acid prices

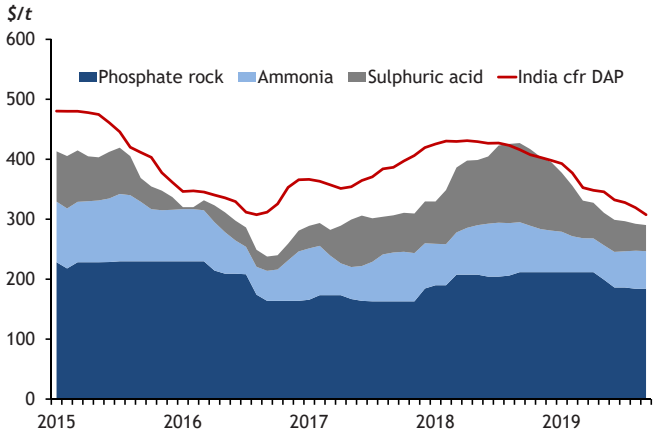
Indian sulphuric acid prices hit a seven-year high of $100/t cfr on a midpoint basis in October 2018, but have fallen by 67pc to $33/t cfr in December 2019.

This compares with imported DAP prices, which hit a two-year high in May 2018 at $431/t cfr, and have posted a slower and more moderate decline of 29pc to $308/t cfr in December 2019.

The stacked areas of the graph above give the cost for the ratio of each raw material required to make a tonne of DAP, with the price of imported DAP on a cfr basis included as a line.

During the graphed period from April 2015 to December 2019, the cost of the sulphuric acid component required to produce a tonne of DAP was highest between October 2018 and February 2019, where it peaked at 31pc of the total cost of raw materials. The outright raw material costs also rose above the price of imported DAP during this time. During the graphed period, the sulphuric acid component averaged 18pc of raw material costs, with the December 2019 cost falling to 15pc of the raw material mix.

Raw material cost for 1t DAP and India DAP cfr



But production costs vary between producers, not only due to specific grades of complex fertilizers, plant performance and government subsidies, but also the option to import phosphoric acid and alter the consumption of phosphate rock and sulphuric acid depending on the fundamentals for each commodity.

Game changers: price pressure and restarts

There remains some downside on phosphate prices, with current oversupply in the global market pressuring prices downwards. Therefore there is potential for DAP prices to drop further, which could stifle domestic production in favour of more attractively priced imported finished phosphates, and put further downward pressure on the sulphuric acid price.

There are already some indications that at least one Indian DAP producer will take a prolonged period of maintenance in 2020, which would increase domestic sulphuric acid availability.

But local production of sulphuric acid remains largely curtailed, with the Sterlite copper smelter in Tuticorin still in indefinite shutdown because of environmental concerns. A restart of the smelter would return around 1mn t to the domestic market, although a timeframe is still unclear.

For more information:

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