

## Outlook for zinc remains buoyant even if near-term remains muted

News from Metal Events Ltd's 7<sup>th</sup> International Zinc Conference which was held at the end of March in Dubai.

### **Main talking points: Is zinc under threat from aluminium in automotive sheet?**

The general consensus was that it won't be that easy to displace zinc and even a higher price might not be sufficient to force a switch. Really will depend how high the zinc prices moves compared to aluminium.

Threats to automotive sheet – most speakers think it will take much more than a rise in the zinc price to persuade automotive producers to switch to aluminium. "Aluminium is gaining market share, but zinc is meeting the challenge" the IZA's Martin Gagne said, noting the work of the Galvanized Autobody Partnership.

Other speakers pointed out that if you look at areas where automotive growth is gaining market share, for instance China and India, it is unlikely that the market will see any major move to aluminium away from galvanized steel sheet. One issue would be the expense and complexity of repairing aluminium-bodied cars, let alone the cost required for manufacturers to switch tooling for an aluminium frame. Delegates also noted that after all the fanfare of BMW's aluminium car frame in the 1990s that it had returned to a steel frame.

Again speakers on India and China discounted an immediate or near-term threat from aluminium, saying that the benefits of galvanized steel sheet over aluminium sheet still far outweigh just cost/price comparisons.

It's a similar picture with the diecasting sector. "Aluminium can't do the job of zinc in some diecastings. It's not simply a matter of price," said the IZA's Gagne.

### **What is going on in China? Can the zinc market expect to see continued growth?**

CHR's Claire Hassall said that China is becoming a consumer-led economy, but growth in sales of vehicles and white goods may be more modest than many are/have been forecasting. The service sector is becoming more important. Demographic developments are raising challenges familiar to mature economies, which is the effect of the one-child policy.

The economic growth model based on exports and fixed asset investments is no longer sustainable. Infrastructure spending must slowdown. Will this happen?

The car industry has been very positive for zinc growth in China. By 2020 there could be another 100m additional vehicles in China, even with modest growth. "Is it feasible to double the number of vehicles in the next few years? For one thing availability of space is a limiting factor. Major cities are already reducing the number of registrations allowed," Hassall said, noting that roads in China's big cities are already clogged to capacity with vehicles.

The average size of zinc smelters has increased, with the elimination of a lot of smaller and older plants. The introduction of modern smelting technology and increased capacity to recover by-products has made a difference. There is a greater focus on value-added products which didn't exist before.

More stringent environmental requirements are also having an effect. The Zhuzhou smelter has got to move. "It may not move with the same capacity. We may see some reduction in capacity here," she said.

Mine production has lagged behind smelting but changes are happening. There has been a re-organisation within the major mining areas and a re-allocation of mining rights. "The problem of under-capacity of mining is now being addressed through the allocation of longer leases. But China is still under-explored. We expect to see the potential for longer term increases in mined output," Hassall said. There is also a greater focus on concentrates quality and thereby providing a more consistent feed to smelters.

The availability of EAF dust-derived oxide fee has increased and will increase further over the next 5-10 years.

Kathy Fan, Senior Analyst, at Antaike, China, said that China's per capita consumption of zinc remains low at just 4kg per person, yet zinc consumption in China has risen between 2005 and 2014 to reach 6m tpy. Galvanizing for construction dominates zinc consumption.

Potential areas for further growth will come from galvanizing particularly for the automotive industry and for sheet used in household appliances.

There is also potential for increased usage of zinc oxide, driven by demand from the tyre and chemical industries.

Demand from the brass sector is either holding steady or shrinking, while demand from the diecast sector is also not growing mainly because an increase in labour costs has seen operations move elsewhere in Asia, for instance to Vietnam.

The proportion of galvanized steel used in autos is only 20% in China compared to a world average of 30%. Fan said there is still the potential for growth in China for zinc in the auto sector.

She said zinc stocks in China are estimated to be somewhere around 200,000 tonnes.

A deficit in the China zinc market is forecast in 2015 as consumption will still outstrip production (as was implied also in 2014) and there will be a need to import once stocks are consumed.

### **Where does India fit in to the picture?**

Rahul Sharma, Director, IZA, India said urbanisation means an increase in zinc consumption. He reiterated comments by Antaika's Kathy Fan by saying that diecast operations are moving from China to Vietnam and India because of their lower labour costs.

The drivers for zinc growth in India are: infrastructure growth; construction activities; intensity of steel usage; protecting products against corrosion caused by pollution (New Delhi has one of the worst global pollution problems), and the fact that there is plenty of domestic metal availability.

Growth for zinc is coming from the power sector, which is adding 90,000MW, road development, the telecoms sector, high mast lighting columns and metro transport (for instance the new metro in Delhi).

Sharma said that a galvanized rebar unit should be set up in India by the end of 2015.

### **What is the zinc price going to do this year? Can we expect fireworks? Will there be a deficit? Can China meet any gaps in supply?**

CRU International's Helen O'Cleary said that developments so far this year for zinc have been more bearish than bullish. There are arguments in the marketplace for a price spike based on the view that deficit markets will become reality after this year. CRU believes however that mine developments will remain subdued as stocks are consumed. And as a result their price forecast for 2015 has been little changed on 2014's.

"Don't expect great things for zinc this year, but we should see prices stepping higher during the year. The near-term outlook is not particularly bullish as consumption growth has decelerated but this is still okay," O'Cleary said. USA is really the only exception to the slowdown in demand everywhere else. But we should see a rebound in zinc consumption this year as world IP grows. "Global zinc demand should accelerate this year and into next year and then continue. But China is the question mark." (See above notes on China.)

From 2017, global demand may have to be rationed based on either price or availability and the industry should prepare for consumption losses if this happens. "Diecasting could suffer. Auto-body sheet is already under threat from for instance aluminium. The threat to zinc is longer term. For instance, retooling takes time so it's a gradual reduction. General galvanizing will also be under threat," she said.

The zinc market can be constrained by mining and smelting, but bottlenecks have tended to be short-lived, particularly as China's flexibility of smelting availability has provided a safety valve for global supply. But planned capacity in China has been reducing or abandoned. Reductions in rest-of-the world supply are also possible constraints to supply.

"Ex-China mine production could still increase in 2015 but after that it will depend on Chinese supply making up any shortfalls." Expect deficits in H2 of this decade.

Will we see new supply come to the market this year? Probably will if we have a higher price for zinc, said O'Cleary. However, speaking to some of the delegates at the conference they are banking on a \$2,500 per tonne Zn price to see successful mine development take place, while others suggested that such a price target is "very over-optimistic".

**New zinc mine supply – where will it come from? Some of the potential developments explored? Plus new technology advances that mean processing of complex ores and secondary materials may meet any supply gap.**

Behrouz Rahmati, Chief Business Development Officer, at Calcimin, Iran said that by 2025 Iran plans to produce 300,000 tpy of zinc and lead, double current levels. Zinc consumption at the moment is just 50,000 tpy.

Much depends on the outcome of the current round of negotiations to forge a nuclear deal with Iran and how sanctions are then removed. (Since the conference there have been positive developments with more talks scheduled.)

The biggest undeveloped mine in the world is Mehdi Abad which has 220m tonnes of reserves bearing 7% zinc. "This mine development is important because a lack of raw materials is the main challenge facing Iranian zinc smelters," Rahmati said. The mine will need some USD900m capex for the first stage of development.

First planned production is set for 2019, with 200,000 tpy of zinc concentrates.

There are more than 80 small zinc producers in Iran with 450,000 tpy capacity, but only producing 150,000 tonnes, which is less than 40% utilisation.

Secondary sources of material available in Iran, include 7m tonnes of leaching filter cake, with the potential for recovering Zn, In, Ge and other metals.

Iran usually exports its HG Zn production to Turkey, India, GCC and SE Asian countries, exporting around 100,000 tpy. Around 80% of the zinc consumed in Iran is in galvanizing, with 10-15% in alloys.

Steve Williams, President, at Pasinex Resources Limited, said that his company's vision is to build a mid-tier zinc miner in Turkey. At Pinargozu and Akkaya, the target is to mine 1m tonnes of oxide and 2m tonnes of sulphide ore. At the Horzum project it is 1.5m tonnes.

"We will build our resource base over the next three years, targeting 300 tpd of production, which is to be funded by the sale of material from small-scale zinc oxides mining which has already started at Pinargozu," Williams said. He added that the material being minded now is being sold to traders to fund cash flow.

Marko Lahtinen, Senior Sales Manager – Zinc Technology, Outotec (Finland) Oy, Finland said that the challenge is to meet the requirements of processing tricky and complicated ores. He said Outotec is developing process solutions for oxidic and secondary raw materials, particularly suited to some of the ores found in places like Iran and Turkey.

"Treating zinc silicate materials is the challenge," he said. For oxidic ores, the process solution minimises sulphuric acid consumption in the leaching to make processing of these raw materials economically viable." After leaching iron and other elements, SX-EW would be used. Lahtinen said the process could be used to recover other metals in complex ores too.

Harald Osthof, Principal Metallurgist, at Raily & Hill Metal Recovery Inc, in Germany spoke about the work together with University of Leoben to develop economic methods to recover zinc and other metals from secondary sources.