China’s graphite problems signal opportunity ahead for emerging producers of the West

So something like 20% of China’s flake graphite production is on hold because of crackdown on polluting mines. Reports out of China indicate that operations at Pingdu, Shandong province, have been ordered closed by local government authorities after complaints about wastewater, dust and gas emissions.

Does this mean prices growing through the roof? Possibly, but most of the buying for the next few months will have been done as winter sets in (it being far too cold to mine, especially in Heilongjiang province) just as happens every year. Temperatures in January in Heilongjiang can drop as low as -31C. The extreme cold weather can prevent graphite mining for up to six months a year.

But some upward price movement can be expected because these latest closures affect Shandong province, which is an important player in flake graphite.

However, to focus on the price reaction is one question. A quite separate one is: are we witnessing a harbinger of the future? While Heilongjiang’s mining will resume in the Spring, many of the important flake graphite mines in Shandong province are getting close to exhaustion. At some stage, non-China mines are going to need to fill the gap as Chinese production – or, at least, exporting – falters.

The trend is already the potential new producers’ friend: in 2007, China exported 670,570 tonnes of graphite (of all types); in 2012, the export total was 257,722 tonnes. How far the rest of the world has to go is shown by comparative 2012 figures for the next biggest producers: Brazil 22,933 tonnes, Mexico 21,284 tonnes and Canada 17,892 tonnes.

In Pingdu, 55 companies (mine operators and processors) have been closed. Pingdu can produce 100,000 tonnes a year of flake graphite.

As I reported here last year, Chinese producers do not have enough flake graphite in low-cost, accessible areas to meet the expected growth in global demand. This was the conclusion drawn in 2013 by a team from Mozambique graphite hopeful Syrah Resources after an inspection of several mines in China. In addition, environmental rule-tightening had led at that stage to some 200 mines closing. Syrah, in an assessment of the state of the graphite industry, said specialist research firms that follow the graphite market had estimated the present size of the global graphite market to be around one million tonnes a year.

As they pointed out, China's domination resulted from its relatively low costs, labour particularly, which have enabled the country's miners to undercut non-China producers. Furthermore, China had ample graphite resources located near infrastructure to meet global demands. China really entered the global graphite market in 1992, thus leading to closure of mines elsewhere which could not compete in terms of costs. China's output rose from 114,774 tonnes in 1990 to 307,424 tonnes by 1994.

Most of the flake graphite comes from Shandong and Heilongjiang provinces. In the case of Shandong, it is home to most of China's graphite processing plants. However, many of the mines in Shandong are typically deep and, consequently, water inflows are a problem. Furthermore, the average grade is low at between two per cent and three per cent total graphitic carbon (TGC). The graphite is associated with clays and processing is costly and environmentally damaging because mines use acids in the process. In the past, acid-rich tailings were deposited direct into local river systems.

You can see why mines are being closed.

So far as Heilongjiang province, in far northeast China, is concerned, many mine owners there transport their ore about 2,000 km to the processing plants in Shandong. In addition to rising costs of production, the Chinese industry faces an additional economic impost due to the winter closures: having to buy before the ice takes control ramps up warehousing and insurance costs.

So this all leads to our third question: will the non-China companies be ready to fill the gap? And this at a time when high-grade flake output needs not to just stand still at present production levels, but to increase by as much as six-fold to meet the meet the demand from lithium-ion battery makers.

One promising sign is that money is loosening up in terms of graphite backing. We have seen this with two neighbouring flake projects in Mozambique, both of which are owned by Australian companies. **Syrah Resources (ASX:SYR)** has just raised A$35 million while **Triton Minerals (ASX:TON)** pulled in A$1.6 million (and recently reported graphite intersections up to 156 metres). The difference in the sums was no comment on the quality of the projects; rather it reflected the level of advancement in work at the two. Now we have **Valence Industries (ASX:VXL)** out in the market for A$10.1 million to reopen the Uley mine in South Australia –closed, coincidentally, as a result of China’s price cutting of the early 1990s.