WORDS BY **ANTHONY BARICH**

GHOST TOWNS HIT GRAPHITE MARKET

A rare first-hand glimpse into China's deteriorating graphite scene caused by a high-level strategic marketing shift provides solid evidence for the commodity's continuing strong outlook.

WHEN TALGA GOLD managing director Mark Thompson walked through some of China's old graphite mining towns in Hunan Province in September the term "ghost towns" came immediately to mind.

Large empty storage sheds were the norm in Hunan, in China's southeast, home to the Lutang field which, along with Heilongjiang Province on the North Korean/ Russian border, has historically produced 80% of the world's graphite at a low cost.

But nothing lasts forever. Those ghost towns are the result of some 350 unregulated small mines scattered along 18km of the Lutang field being shut down – read "kicked out" – as state-owned China Construction Materials (CCM) integrated them into a handful of refurbished underground mines. In one small section of Lutang alone, CCM consolidated 160 individual mines into four, which now must have licences and export quotas.

CCM hopes the combined mines will produce the 510,000 tonnes of graphite previously produced each year by the small mines working at the surface.

Meanwhile, state-owned Southern Graphite, a CCM subsidiary, says it is investing 3 billion yuan (about $A450 million) to build a mine and industrial park as a high-tech centre for the development of battery-grade graphite.

One of the four refurbished mines has seams of high-quality amorphous graphite – for which the Lutang field is famous – that are 2-3m wide and have been mined about 450m down to the watertable.

The new developments, if they get re-opened (and there is no certainty when that might happen), will be deeper, slower and more expensive to run.

Thompson seriously doubts the four mines will be able to produce the same output as the 350 unregulated mines.

"They're not really sure when they're going to re-open them, though it may be fairly soon," Thompson told *RESOURCESTOCKS*.

"They have to de-water some of the mines and things may not go as fast as they think."

Thompson visited China in September to meet Talga's significant Chinese interests in the company's graphite and iron ore projects in Sweden and gold projects in Western Australia.

"We're coming into the annual slowdown in China when graphite production shuts down for the winter, but it's not clear how much production they'll be able to get going again from the Lutang graphite field in future," Thompson said.

With all those mines closed, China has been selling stockpiled graphite, but has now run out. China's strategic restructuring of its graphite assets, with which it has controlled the global market for the past 30 years or so, has caught the world's consumers on the hop.

Manual loading of bags of graphite in northern China reflects the state of the industry and reinforces opportunities for Australian companies entering the graphite sector. Photo Copyright M Thompson/Talga 2012.

Graphite mining town of Lutang, Hunan Province, China. Photo Copyright M Thompson/Talga 2012.

"I think we're seeing a major structural change in the graphite industry, because we're used to China selling cheap graphite to the world," Thompson said.

"The depth of the commitment by the Chinese government to the graphite industry, to me, is quite remarkable."

He said no matter how focused and large scale the industry was, China wanted to control its finances and to whom the graphite was sold; that used to be South Korea and Japan but that will change, judging by Thompson's observations.

He said it was clear China wanted to develop its own battery industry and have a much higher component of Chinese batteries for its future electronic needs.

"They currently sell most of their graphite to South Korea and Japan, who turn it into high-tech lithium-ion batteries then sell it back to China," Thompson said.

"So that's quite a high-level strategic change by the Chinese to want to have their own production domestically. I don't think they'll be selling to South Korea and Japan much anymore because they're going to need it for their own domestic market," he said.

"If you look at the state of technology in China and their inability to open cut mine some of these deposits, you'll see that there probably is a change in the quantities they can bring to market in the future compared to what they've done in the past.

"So rather than increasing their output, I think China will decrease it considerably, based on what I saw, possibly back to the mid-2000s levels."

That will cause a seismic shift in the global graphite market, he said.

"We see all this as real evidence of the graphite prices remaining strong, because the supply-demand imbalance will not necessarily be met by increased production in China," Thompson said.

"Anyone who's serious about long-term production of any product that involves graphite is not going to want to rely on, frankly, unreliable supply out of China.

"Most of the world's graphite gets consumed by groups outside China; they want production from outside China but currently there's very little, so they're looking to promote non-Chinese graphite mining and at the same time the Chinese domestic market is looking to increase its own consumption."

This also speaks volumes for how slow the world has been to wake up to the importance of the graphite industry, and taking China for granted.

"You're seeing a major shift in what has been an archaic part of the minerals industry," Thompson said of graphite. "It's a dinosaur mineral that got left behind in its development over the last 20-30 years.

"But those days look to be genuinely over. It's not just about a capital market boom, it's the fact that the Chinese economy is changing and the rest of the world is realising that it was over-reliant on cheap Chinese graphite."

Then there is the flake graphite in China's north near Jixi in Heilongjiang Province, which shares a border with Russia and North Korea (which also produces graphite).

"They have some good open cut mines and bring some material down from Mongolia to produce flake graphite," Thompson said.

"They also shut down in December and re-open in the new year when the snow melts.

"So around this time of year graphite prices come up a bit."

However, there are issues with this part of China producing flake graphite.

"They've still got good graphite in that area but they still have very 'traditional' ways of open cut mining and they are likely to be restricted in what they can produce without introducing more technology. In future more of those flakes are going to be used locally," he said.

All this validates Talga's business model to produce graphite for Europe, the next biggest market for the commodity behind South Korea, Japan and North America.

Both the eurozone and the US have declared graphite a "strategic mineral", akin to lithium and rare earth elements.

The graphite market is also being boosted by "compulsory growth", with some countries even legislating for the increased use of electric vehicles; while each EV lithium-ion battery can use up to 90kg of graphite.

Prices rose strongly from 2005 until mid-2012, when the slowdown in China led to a dramatic drop in the iron ore price.

At the same time the price of high-quality flake (94-97% carbon) products plummeted from around $US3000 per tonne to $1800/t, a 40% drop.

Prices of amorphous graphite powder, on the other hand, shot up when China shut down all the graphite mines two years ago, but has steadied since. RS

TALGA GOLD

GREY EDGE TO WHITE CHRISTMAS

When snow begins blanketing the north Swedish countryside over coming weeks, it will be a white Christmas in every sense for Perth-based explorer Talga Gold.

SINCE ITS MID-YEAR arrival to the countryside of Vittangi, Talga Gold has shanghaied to the fast lane its plans to become a major graphite explorer and project developer in Sweden.

In just six months, Talga has delivered a suite of spectacular graphite grades from its maiden drilling programs in the country's north.

The company is planning to celebrate Christmas with its own upgraded drill and assay-based JORC-compliant resource for its flagship graphite project in Sweden, Nunasvaara, to the northwest of Vittangi.

The drill campaign, which included some action on Talga's local iron deposits there as well, was designed to build on historic data and previous graphite work on the field.

And all this at a time when graphite entities around the world swung back into sustained market appreciation because of increasing demand for a product better known as the lead in lead pencils. It is now a catalyst for some of the world's newest technologies, recognised for its remarkable strength and heat-resistant characteristics.

This is not to say Talga will ignore its roots. The explorer is the child of a $5 million successful 2010 float on the Australian Securities Exchange on the back of primarily and ongoing gold exploration plays in Western Australia's Yilgarn and Pilbara regions.

But graphite – and graphite in Sweden – is now its main game.

The decision to "go graphite" was made 12 months ago when Talga Gold identified and acquired a number of advanced and high-grade graphite, iron and IOCG projects in Sweden, to extend the scope and project development potential of the Australian junior and get it more "in play".

Talga's Swedish bid was always going to get off to a good start.

It put a 100% ownership footprint on its targeted graphite acquisitions and ensured some contained inferred mineral resources and exploration targets.

Among the assets were world-leading high-grade graphite deposits amenable to open cut mining.

Significantly, they are opposite infrastructure including grid power, sealed highways and rail to ports in a high-quality, stable mining jurisdiction. Its a bargaining asset in any offtake and export negotiations for project value-adds generated by the newly arrived Australian.

Talga managing director Mark Thompson, who originated the company's push into Europe, knew what he was looking for – historic drill holes that had defined, large high-grade graphite targets able to be readily tested and analysed with modern methodologies.

He was not to be disappointed.

Assays from Talga's maiden 19-hole diamond drilling program at the Nunasvaara graphite deposit included lengthy intersections grading as high as 31 per cent graphite content.

Little wonder the order went out to start preparing a new resource estimate.

The program was Talga's first drill test off the high-grade Nunasvaara mineralisation, with drilling intersecting graphite over an approximate 1200m length strike.

The mineralisation also went as deep as 140m and remains open at depth and along strike. Its graphite-bearing schists have a typical true thickness of 5-20m with moderate to sub-vertical dips.

Thompson is excited by what he sees as considerable upside at Nunasvaara.

"Historic mapping and trenching identified graphitic schists occurring over approximately 15km of strike in the Nunasvaara area. However, prior to our 2012 program, less than 8 per cent of this unit had been drilled to date, with that work alone sufficient to produce Talga's maiden JORC inferred-level resource of 3.6 million tonnes at 23 per cent graphitic carbon (Cg) for 828,000t contained total graphite," Thompson said.

"It was only in the closing months of this year that Talga commenced exploration of the prospect's undrilled areas of this 15km strike length.

"Our confidence about the rest of the prospect is justified when you consider the wider picture for our drill campaign.

"Significant downhole graphite results were returned from every one of the 19 holes drilled – not just some or most of them."

A selection of hole results is quite illuminating in terms of mineralised consistency as just the following samples illustrate:

- Hole NUS12003: 30.3m at 28.7% Cg (graphite) including 26.3m at 30.2% Cg
- Hole NUS12004: 40.2m at 28.2% Cg including 26m at 30.5% Cg
- Hole NUS12005: 28.8m at 25.4% Cg including 4m at 30.8% Cg
- Hole NUS12006: 33m at 19.9% Cg including 4.7m at 31.9% Cg
- Hole NUS12007: 36.7m at 26% Cg including 18m at 30.4% Cg

The highest assay in Talga's initial drill sweep was 44% Cg.

Thompson says the assays support the wider sector belief that Nunasvaara is the highest grade published graphite resource in the world, a view supported by the Technology Metals Research Advanced Graphite Projects Index.

Little wonder Thompson says that selected downhole intercepts from the Talga drilling can genuinely be considered "spectacular".

He points to the fact at least eight of the non-Talga graphite mineral resources published in the TMR Advanced Graphite Projects Index show an approximate average deposit grade of 10% Cg and range approximately from 2-19% Cg – well below the performance of the Talga hole assays.

"It is also quite clear from our work this year that an extensive amount of graphite is present in the project outside the current Nunasvaara resource area and we will be focusing on this over the New Year as well," he said.

The new results were being used towards year's end to update the size and status of the current JORC code-compliant inferred mineral resource for Nunasvaara.

Thompson has also initiated a preliminary economic scoping study into the deposit and further drilling for geotechnical and pit wall studies or infill to obtain a higher resource status of the resource, will be undertaken as required.

Pit optimisation studies have also recently started.

"We are closing out calendar 2012 with a swag of particularly pleasing results as they have confirmed what the historical information indicated, and have even exceeded our expectations in some high-grade zones," Thompson said.

"Talga is very confident the imminent resource estimate for Nunasvaara will reach our target of a 20 year mine life potential for this deposit and that is helping drive our work program to achieve near-term production.

"We have to keep in mind, however, that confirmation and expansion of the Nunasvaara resource is but the first of several graphite deposits we expect to develop in Sweden as there are currently six such deposits in our asset base.

"Our exploration and development team recognises several significant opportunities within the mineral endowment of our projects, which will have the bonus of also adding value to our Australian gold assets – a factor now being recognised in Australia's capital markets."

The Nunasvaara graphite deposit is situated within the Vittangi greenstone belt of the Kiruna mining district and advantageously is just 20km from rail networks owned by the Swedish government.

The company has also acquired the tenement surrounding the Nunasvaara project to take its total 100% owned area in northern Sweden from 260-488sq.km. The new area covers extensions of graphite, iron ore and copper prospects.

Nearby multiple port options for export of bulk materials include Luleå to the south – a port currently handling Panamax size vessels. This route provides Talga access to major graphite markets via the Baltic for any Swedish deposit it commercialises.

On all accounts, 2013 is shaping as Talga's European summer. RS

High-grade graphite intercepted during July drilling at Talga Gold's Nunasvaara resource, Sweden.

Loading Cape-size ships with iron ore from Sweden at the port of Narvik, Norway.

"Talga is very confident the imminent resource estimate for Nunasvaara will reach our target of a 20-year mine life potential for this deposit and that is helping drive our work program to achieve near-term production."

MARK THOMPSON
TALGA GOLD

TALGA GOLD AT A GLANCE

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Dazhang Zeng 3.48%