

Potash potential: EuroChem enters the competition

With Chinese and Indian contracts negotiated and global potash consumption increasing, EuroChem is one of a handful of producers looking to capitalise on the expanding fertiliser market.

Kasia Patel, *Reporter*

In 2011, thanks to record prices, the fertiliser industry was brought back to pre financial-crisis levels; however in 2012 it once again began to feel the effects of the global economic downturn. The European debt crisis, the slowdown in China and the downgrade of the US debt caused demand to fall, and consumption in India and China was lower in 2012 than initially expected as these major fertiliser end markets postponed purchases in 2012 to put downwards pressure on prices.

2013 began on a more positive note as producers in North America and the rest of the world finally negotiated agreements with Chinese potash buyers, albeit at steep discounts of around \$70/tonne, lowering prices to around \$400/tonne. Despite the drop in both potash and phosphate prices over the

course of the last year, the general outlook from many producers is that demand is beginning to get back on track, while the next few years will see a steady growth from the fertiliser industry.

EuroChem, Russia's largest mineral fertiliser producer, hopes to join a number of other potash producers who are looking to capitalise on the expanding fertiliser market by developing its own source of potash, and by becoming 100% self-sufficient in its own phosphate production. The company is targeting potassium chloride (KCl) production of 8m tpa, and its ambitious expansion plans will help to position it as one of only four companies globally present in all three macronutrients used in commercial fertilisers – nitrogen, phosphates and potash – along with PotashCorp., Agrium and Mosaic.

In terms of potash capacity, the expansion will position EuroChem as the fifth largest producer globally, behind PotashCorp. (8m tpa), Uralkali (6.9m tpa), Mosaic (6.2m tpa) and Belaruskali (5.5m tpa). According to EuroChem, the current potash market stands at around 55-56m tpa and is set to grow over coming years, a sentiment shared by most producers. With plans to target the expanding markets of China, Brazil and India, production from EuroChem's deposits is expected for 2017. And, with site costs at \$57/tonne, EuroChem stands a good chance of filling at least part of the expected additional capacity which will be needed to meet growing demand.

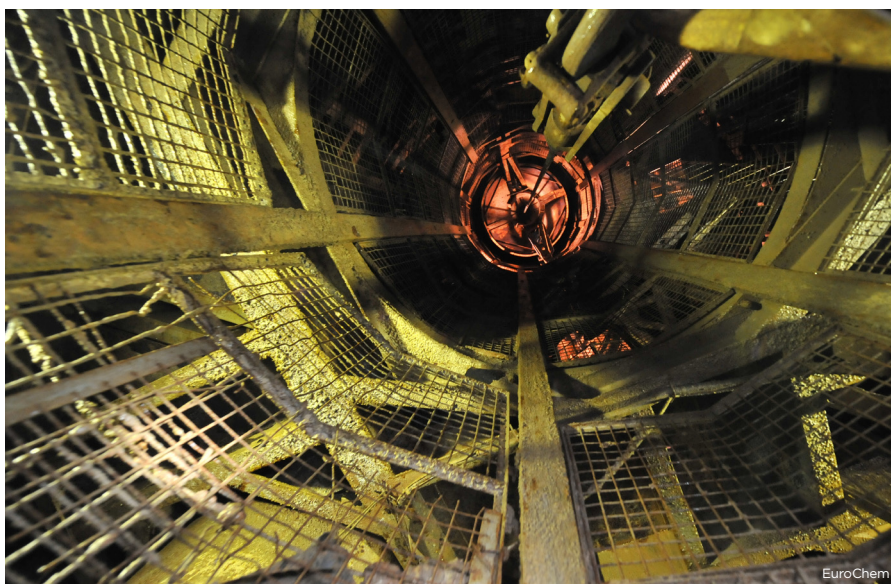
According to the Brazilian National Fertiliser Association (ANDRA), fertiliser consumption in Brazil has increased by 4.7% per year over the last 25 years - faster than agricultural production and harvested acreage - and is expected to continue to grow. The potash compound annual growth rate of demand for Brazil, China and India is expected to increase by around 4.6% to 2016, while demand for potash in the US is expected to increase by 0.9%.

The expansion

EuroChem currently uses 350,000 tpa potash, which is mainly bought from Uralkali and K+S and processed in Antwerp and Russia by EuroChem's Western European and Russian operations. Expanding its facilities in Russia to produce an additional 4.6m tpa potash will allow EuroChem to become fully integrated and will give it the opportunity to produce complex fertilisers.

As of 31 December 2012, EuroChem had invested \$1.5bn on the development of its potash production, and plans to spend a total of \$7bn – which the company says is the single largest investment in potash during the last 50 years – on the development of its two potash mines.

Clark Bailey, EuroChem's director of mining, joined the company in February 2013 – having come from the position of senior vice president for projects and technical services at PotashCorp. – in a newly created position to



View from the bottom: EuroChem's 570 metre mine shaft.



The processing and storage facilities are closely compacted to cut logistics costs.

oversee the current development of potash mining operations, which includes projects in the Gremyachinskoe and Verkhnekamskoe deposits in Russia. He will also be overseeing the company's phosphate mining operations – the Kovdorskiy GOK phosphate rock mine in Russia and a phosphate rock project in Kazakhstan.

“As soon as you walk into the plant, you see how well organised everything is. It's a great location and a great place to be, not only because of the resources, but because I think we're doing a great job here,” Bailey told **IM**.

The capacity expansion will take place in two phases at two separate locations, Usolskiy and VolgaKaliy.

VolgaKaliy

EuroChem acquired the license for the 96.9km² area of VolgaKaliy, or the Gremyachinskoe deposit, in 2005 for \$106m. With JORC proven and probable reserves of 492m tonnes potash and 1,337m tonnes measured and indicated resources, with a 39.78% KCl average content, the deposit is expected to have a 46-year mine life at full capacity.

All of the processing facilities, beneficiation plant, storage plant and mine shaft have been built in close proximity of each other to keep costs low.

“The VolgaKaliy potash development is located 170km from Volgograd, close to existing infrastructure, and existing oil and gas pipelines,” the company told **IM**.

“At the same time EuroChem is building power lines and railroad infrastructure. The site has been levelled in a horizontal distance for 70-100m, and all sites have been built in terraces to minimise logistics costs,” it added.

The development for both potash sites will be rolled out in two phases. For VolgaKaliy, the first phase, with an investment total of \$2.6bn, will include the development of social infrastructure for a permanent workforce, the building of a cage shaft, skip shaft 1, and a processing facility, with production set to start at the end of 2017.

The second phase will include the construction of a second skip shaft and expansion of the onsite processing facility, which will allow for an additional capacity of 2.3m tpa potash, requiring a further \$1.4bn investment.

Initial setbacks

Over the course of 2013, EuroChem plans to continue the sinking of its skip shaft, which is currently at a depth of 572 metres. It also plans to restart its cage shaft sinking, which reached a depth of 100 metres but has not been progressed further since EuroChem's set-back with its initial contractor and its technology, in 2011.

In October 2012, EuroChem announced that it was filing an \$800m claim with the Swiss Chambers of Commerce in Zurich and the International Chamber of Commerce in Paris against Shaft Sinkers Ltd, a subsidiary of London-listed Shaft Sinkers Holding Plc. As

the initial contractor commissioned to develop the cage shaft at the Gremyachinskoe deposit, Shaft Sinkers was using cementation to act as water proofing to enable the shaft sinking through the layers of water found above the potash deposit. It was however unable to fulfil its contractual obligations.

“Shaft Sinkers' grouting technology entirely failed, causing in excess of \$161m in direct costs and a delay to the project's completion date, which was subsequently revised to 2015,” EuroChem said.

“The claim seeks compensation for the costs and substantial lost profits incurred by EuroChem-VolgaKaliy due to the delay in commencing potash production as a result of Shaft Sinkers' failure to complete the construction of the cage shaft at the Gremyachinskoe deposit,” it added.

“The contract was officially terminated in April 2012, causing delays as we now have to take down all the existing equipment,” Olivier Harvey, EuroChem's head of investor relations, told **IM**. “It has caused a two-year delay. Production is now expected in 2017, instead of 2015. We think we have an extremely strong case,” he added.

Although the date of production has been pushed back, both shafts are now being prepared for their final sinking phases. Rather than using grouting technology, EuroChem is undertaking ground freezing using a number of freeze plants surrounding the shafts.

“We have to go through an aquifer to get to the potash, so to protect the shaft we use freeze

EuroChem's comparison of VolgaKaliy with other potash deposits

Deposit characteristics	PotashCorp.	Mosaic	K+S	Belaruskali	VolgaKaliy	Uralkali	Usolskiy
Depth in metres	900-1,000	250-1,600	600-1,000	up to 1,000	1,000-1,250	up to 600	up to 500
Nutrient content KCl %	35	<35	<30	25-27.5	39.78	24-27	30.8
Production capacity tpa	8	6.2	4.3	5.5	2.8	6.9	2.2
Site cost \$/tonne	112	212	210	110	57	55	59
Approximate distance to port km	2,000	2,000	>500	1,000	500	1,600	1,600

Source: EuroChem, CRU, Interger Research, analyst reports, public filings

plants to freeze the water – the shaft is essentially surrounded by a wall of ice,” Bailey explained to **IM**.

Pre-sink operations for the second skip shaft, including construction of headgear, will also begin in 2013, as will the construction of surface infrastructure, including the potash mill.

Social infrastructure

Social infrastructure is very important in the development of the project and has been a very serious limitation factor. 240,000 square metres of accommodation space will be developed including the building of hospitals, schools, leisure centres and hotels. All this will be provided within the construction of two districts which are in progress – Oakwood and East District.

“New accommodation will be incorporated into the existing town, but our development will move it further,” the company told **IM**. “The town is expected to have a total population of 10,000 people. So far we have completed four residential buildings for 200 persons, with six more underway. In Oakwood we will also build cottages for employees.”

In order to provide the towns with the necessary resources, three projects have been reviewed and approved in three areas; infrastructure, water supply and sewage.

“The company chose this expensive \$300m way of doing things. This project is unique for us and the new history of Russia. We are building everything from scratch,” Oleg Shaitan told **IM**.

“The problem we faced was attracting personnel, and so we had two options. A less expensive option was to have staff travel in, or we could make a permanent town and attract people to live here full time. It is more expensive,



Employee accommodation: as well as housing, the company is building hospital, school, leisure centres and hotels.

but it has its advantages in developing the region – it would be great for people to stay here full time,” he added.

High standards

EuroChem has taken special measures to ensure safety and environmental standards remain high.

“Safety at the deposit is a core value, not just a statistic, and it’s not just for employees,” Bailey emphasised to **IM**. “DuPont has already carried out an audit at one of our facilities, and we want to benchmark ourselves and continually improve by adding trainers, courses and continuing with audits across the group’s facilities.”

The company’s beneficiation plant plans include dryers which will create dust, but control measures have been put into place to counteract the effects.

“We have specified to our equipment suppliers to give us the best they can make in terms of environmental standards,” Harvey added. “We are starting from scratch, rather than expanding an additional facility so we can do it right from the start. We don’t have to worry about brownfield specifications.”

Tailings from the beneficiation plants will also be buried after a period of five years, both for environmental reasons and to protect the mine by helping with the rock mechanics which will prevent caving.

Usolskiy

Located in the Perm region in Russia, the Usolskiy potash project development, which has JORC proven and probable reserves of 420m tonnes 30.8% KCl, will also take place in two phases with production planned for late 2017 or early 2018. The mine life is expected to be 37 years.

With a total investment of \$2.5bn, the first phase will add an additional 2.3m tpa potash to EuroChem’s capacity, and will again involve the building of social infrastructure locally for employees, as well as the construction of a cage

shaft, skip shaft and processing facility.

The second phase will require a smaller investment of \$300m, adding an additional capacity of 1.4m tpa, and will include the expansion of the processing facility and the construction of an additional skip shaft.

EuroChem tapped the first potash layer at the Verkhnekamskoe deposit in November 2012. The skip shaft remains at a depth of 430 metres, 100 metres from first phase total completion which is scheduled for November 2014, while full completion of the cage shaft – currently at 306 metres – is scheduled for October 2014.

Although the VolgaKaliy development is a priority, EuroChem plans to start the excavation of haulage sections, filling stations and sumps over the course of 2013. Ventilation shaft construction and ground levelling will also take place, and detailed engineering for the potash mill will be developed.

Competition and oversupply

Although EuroChem concedes that there has been medium-term potash price softening in recent times, with prices hovering around the \$380-\$400/tonne mark, the company would still be getting its targeted return on investment.

“At the rate we’re producing, even if prices stood at \$380/tonne we’d still be comfortable,” Bailey told **IM**.

Fertiliser producers, who had previously announced a positive outlook for the year, had continued to scale back production and cut forecasts over the last year as uncertainties continue to linger, including North American potash producer PotashCorp., and Russian Uralkali.

However, although some global uncertainties which plagued the 2012 markets could continue to affect the fertiliser industry in the short term, the sector has strong long-term fundamentals, which is why precisely the same producers are continuing to ramp up capacity. The scenario for fertiliser minerals is simple: people need food and therefore fertilisers.



EuroChem’s skip shaft at VolgaKaliy