

Potash – Hold the Salt!

The past six years have seen a wild ride in sentiment towards potash. The initial move up was prompted by the rush into agricultural commodities at the very peak of the generalized global asset boom. Unlike much of the other speculative activity, the push in wheat, corn and soy prices had a strong grounding in rising demand in Asia and other emerging economies (though with the somewhat bogus ethanol frenzy underlying corn's rise).

Potash is fertilizer found primarily in two forms: muriate of potash (KCl) and sulfate of potash (K₂S₀₄). Both forms provide potassium (K), a necessary nutrient for plant and animal life with no known substitute. About 90% of all potash produced is used as fertilizer with the remainder being used in the chemical industry.

MOP versus SOP

There are good reasons that higher-margin Sulphate of Potash (K₂S₀₄), or SOP for short, trades at a significant premium to MOP. The principal use of SOP is as the preferred fertilizer for most fruits, nuts, tobacco and vegetables, as it does not contain chloride, which can be harmful to some crops.

Crops that are less sensitive may also require potassium sulfate for optimal growth if the soil accumulates chloride from irrigation water.



The main points in SOP's favour are:

- Used on chloride-sensitive and high-value crops
- Advantageous in saline and arid soils
- Sulfur deficiency is a growing issue
- Enhances nutrient uptake, plant health and drought

tolerance

- Improves taste, crop yield, quality and shelf life
- Estimated 4-6% CAGR for consumption to 2020, depending on region

Sub-Saharan Africa is the poster-child for the environmental problems of desertification and salt build-up, which are further compounded by burgeoning populations. The table below shows the serious need for fertilizers in light of past over-cropping, climate change and associated problems.



While the first instinct is to think of this in terms of basic crops (and thus use of KCl) the area however is so damaged that SOP is a more suitable choice for these regions. Moreover the area is also host to some high value export crops, most notably it's the centre of global cacao production and important for groundnuts (i.e. peanuts).

The table below shows the major high-value agricultural commodities for which SOP is the preferred fertilizer to be applied.



There are few places on earth where this form of the nutrient is found naturally including Ethiopian/Eritrean borders (site of Allana's and South Boulder's projects), the Atacama desert in South America; the Luobupo project in Xinjiang, China; the polyhalite deposit of IC Potash and several wet and dry brine deposits in Utah (Compass and EPM Mining).

Prices

In its 2008-9 heyday, potash prices made a bigger jump than many of the agricultural products that use potash as a fertilizer. The party rapidly ground to a halt when the global financial crunch descended. Speculators offloaded stockpiles

they had been hoarding, some countries reduced their imports and the price tumbled.

While fertilizer demand can be fairly non-responsive to price trends in the West where the commodity is a smaller part of the price composition of a grain harvest, in many developing economies a hike in prices tends to prompt small-scale farmers to cut usage, with effects on yields but reducing their upfront capital commitments towards a season's planting.

Interestingly SOP prices have exhibited better stability since the breakup of the Belarus Potash Cartel last year as the chart below shows.



Source: IC Potash

It is important to remember that SOP demand and pricing mechanism are driven by high-value crops.

Additionally, the SOP market is influenced more by direct shipments (spot pricing) vs MOP's contractual nature (i.e inventory management by large distributors and sovereigns influences pricing). And the nature of the goods that SOP services (tobacco, fruits and vegetables etc) have more stable first world demand.

Supply & Demand

The biggest factor though in the potash dynamic is the China (and India) possibilities. In a meeting we had with Potash One, before it was taken over, they stated to us that they felt that China was using 8 mn tonnes per annum of potash but they really needed to be using around 20 mn tpa.

In response to this perceived demand growth potash capacity has continued to be developed worldwide, but at a slower pace since 2011. About 20 expansion projects are being carried out by established producers for completion between 2014 and 2018.

Since 2012 only around six million tonnes (KCl) of new capacity has been brought on-line, mainly as a result of completion of brownfield projects by Uralkali (Berezniki-4), Potash Corp (New Brunswick, CorryII and Allan) and Mosaic (Colonsay).

According to Fertecon, a total of 17 million tonnes of KCl capacity is forecast to be constructed over the next 11 years, composed of:

- Brownfield expansion representing around 6 million tonnes
- Possible greenfield developments representing the balance

In contrast, according to the International Fertiliser Industry Association (IFIA) global potassium capacity is forecast to increase from 49.7mn tonnes of K₂O in 2013 to 60.7mn tonnes in 2018. This would represent only an 11mn tonne net increase.

Looking at various projections for new projects can be frustrating and confusing. Most of the commentators are totally over-looking the mid-tier projects and are only focusing on the mega-projects. Thus one source claimed "Only three greenfield projects are planned for completion before 2019, in Canada and Russia". This is plainly wrong and anyone basing their premises upon that type of thinking is bound to be disappointed. Seemingly, not only is Potash a cartel of product but also a closed circle of ideas and perceptions as well. The medium sized players are therefore advancing stealth-like (though anyone doing the vaguest investigation would know they are progressing). The implication is that if several of the smaller projects get to production then they would make less viable one or more of the major projects. Already several of the major greenfield projects including Vale's Rio Colorado (in Argentina) and BHP's Jansen (in Saskatchewan) remain uncertain (but are included in forecast

greenfield capacity increase). With Rio Colorado alone predicted to cost \$11bn in capex, one can see that one tenth of the capex would move three of the mid-tier projects to production.



Source: IFIA, 2014

IFIA estimates global demand for potassium at 38.3mn tonnes K2O in 2018, equating to an average annual growth rate of 3% between 2013 and 2018. In their version, global demand would grow in parallel with supply until 2016. By 2017 the annual incremental supply would accelerate and start to exceed global demand growth.

Under this slow demand growth scenario, the five-year global supply and demand would show relatively stable potential surpluses of 9-10mn tonnes of K2O between 2013 and 2017, followed by an increase to 11.5mn tonnes in 2018. This implies a 23% idling factor in the industry. It is therefore no wonder that Vale desisted with its Argentine project (though Marubeni were said to be considering picking it up).

The Association of course largely represents the establishment (read the Cartel) and thus it has a vested interest (particularly at this time) in putting the frighteners on potential interlopers with a grim demand scenario. Therefore we take the 3% growth scenario with a pinch of salt (to mix allusions).

The Potash Lifecycle

Unlike other specialty metal “lifecycle” charts we have produced, the one for potash/phosphates has long had a well-populated (and profitable – immensely so) right side with the cartel members firmly in control of production.



In many mining sub-sectors, this chart tends to have almost no producers and a plethora of wannabes over to the left. However in the potash space there is a healthy pack of 800lb gorillas bunched on the right, with the potential should they so choose to discipline all the other players. However with their solidarity now broken some of the more daring wannabes are likely to be transformed into real live producers, upsetting the "natural order of things" in the Cartel's outdated view. If we had looked at this chart two or three years ago most of those now in funding/permitting mode would have been in discovery mode. So this is one of the few mining sub-sectors where significant progress has been made towards production DESPITE the tough financing conditions.