

POTASH FEEDING A GROWING PLANET WITH LESS ARABLE LAND



POTASH Key Facts



CHEMICAL FERTILISERS AND POTASH

Together with nitrogen (N) and phosphate (P), potash (K) is one of the three key plant nutrients. Potash is a crucial fertiliser nutrient that plays a key role in promoting plant growth and increasing crop yields.



MOP

Muriate of potash (MOP), also known as KCl or potassium salt, is the most commonly used potassium fertilizer (90% of global demand) and plays a central role in the agricultural industry.



PRODUCTION

The global MOP market stood at 70 million tonnes in 2021. The European market is 7 m tonnes. The Muga project in northern Spain will produce 1 m tonnes.



GROWING MARKET

Demand for K_2O is expected to outperform that of other macronutrients in the long term, driven by changes in the global crop mix and policy shifts to develop balanced fertilizer use in countries such as China.



LIMITED SUPPLY

Current supply is tight due to recent mine closures (specially in Europe), supply discipline from key producers, and a complex geopolitical environment.



PRICES

A lack of new MOP projects globally plus steady demand growth bodes well for long term price dynamics. Additional geopolitical tensions further underpins the strategic relevance of a new project in Europe.

Potash is a general term for mined and manufactured salts containing the element potassium (K). Its name comes from the early production technique where potassium was dissolved from wood ash, boiled and precipitated in large iron pots (hence: "pot-ash").



Potash market by product: MOP vs SOP

1. MOP In mining, potash usually refers to potassium chloride (KCl, also known as muriate of potash, or MOP), the most widely used K fertiliser for direct application or for blending in N-P-K fertilisers.

2. SOP The other main type of K fertiliser is sulphate of potash (SOP, also known by its chemical formula K_2SO_4).

MOP represents 90% of the global market, with annual production in 2021 standing at 70Mt. SOP production in the same year stood at 6Mt, representing approximately 8% of the market.

For traditional crops which are chlorine resistant such as soya, rice, wheat and barley, farmers always prefer MOP, which contains a much higher K content than SOP, and is available at lower prices.

SOP, which contains no chloride and requires a higher degree of mine complexity, is regarded as a more niche product for chlorine-sensitive crops such as oranges and avocados.

Potash mining by method: Traditional vs evaporation

1. Traditional mining methods are more typical in the production of MOP. MOP is mined from ore deposits (usually sylvite or carnallite) situated underground or in salt lakes or brines. It is separated from crude salt (mostly sodium chloride, or NaCl) by thermal dissolution, flotation and crystallisation, or alternatively through a dry process known as electrostatic differentiation.

2. Extraction via evaporation and/or chemical methods is more typical in SOP. SOP, which contains around 40% K_2O , can be made synthetically from KCl or by extracting potassium and sulphate ions from naturally occurring complex ores or brines, via evaporation and/or chemical methods. Total global production of SOP is split approximately 50/50 between naturally produced and synthetic SOP.



Highfield Resources' Muga project in northern Spain is expected to produce 1Mt of MOP per annum, following two phases of development. The company will use traditional underground room and pillar mining, with declines providing access to shallow mineralisation. Processing will be via conventional flotation and crystallisation.

In summary, the Muga project is based on traditional and well tested mining and processing methods and an easy access to the mineralisation.

Global market dynamics in MOP

MOP is by far the most common type of potash, accounting for approximately 90% of the global market.

The global MOP market has operated with a very concentrated supply dynamic for decades, only shifting in the wake of Russia's invasion of Ukraine. Most of the world's supply lay in the hands of three exporters: Russia and Belarus, with supply sold through the exporting firm BCP (the joint venture between Belaruskali and Uralkali that ended in 2013 when the latter walked away), and North American exports were all made via Canpotex.

More than half of the world's supply of potash comes from just Russia, Belarus, and Canada, and the global price floor continues to be set by whichever of the three major exporters, Uralkali, Belaruskali, and Canpotex, first signs a deal with India or China.

Global potash pricing was benchmarked against the deals these exporting companies made with Chinese and Indian buyers on a yearly basis.

This arrangement was only slightly disrupted in 2013, when Uralkali and Belaruskali parted ways. But otherwise, the global potash market remained largely unchanged.

This concentration of supply came into sharp relief in early 2022, as sanctions imposed on Russia and Belarus following the invasion of Ukraine threatened to cut off supply from two of the three top exporters. Prices skyrocketed as a result.

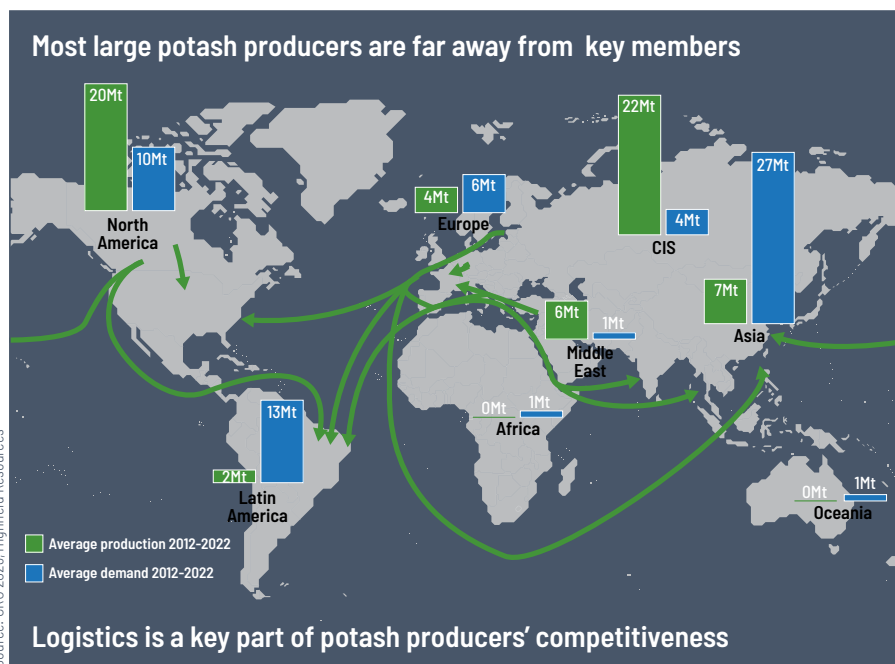
But today MOP prices are less than half of the highs set during the early stages of the war, as greater volumes of Russian and Belarusian supplies have found their way to global markets than expected.

Still, a long-term drought of new projects and underinvestment in expansion means that there is almost no idled capacity, and precious little brownfield potential, especially in Europe. China and Israel are also major producers and the geopolitical situation is becoming more complex with re-evaluation of dependence

on Chinese supply, and now compounded by the recent Palestine/Israel conflict.

The only major new project coming on line is in Saskatchewan, Canada, and is being developed by mining giant BHP.

The outlook is for more of the same: the UN forecasts total world population to reach 8.6 billion by 2030 and 9.8 billion in 2050, driving predictable long-term demand growth as the basic need to feed everyone continues.



European market dynamics in MOP

European MOP prices have been historically the highest in the world due to global market dynamics, with the price premium finding even more support of late by lower access to Russian and Belarusian supplies.

This premium is likely to sustain for the foreseeable future, with limited new supply options and an ageing mine network in Europe.

The fact MOP prices have yet to return to pre-pandemic levels reflects growing wariness among European customers of being dependent on Russia and Belarus. Interest in alternative sources of supply is therefore on the rise.

ASX-listed Highfield Resources is widely predicted to be the 'next cab off the rank', with construction at its Muga project in northern Spain set to begin by early 2024. Highfield is targeting relatively shallow potash beds, starting at 350m below surface, over an area of 46 km², straddling the border between the provinces of Navarra and Aragón.

Muga's location, on the doorstep of strong demand centres in Europe, counts heavily in its favour, especially given logistics, and the distance from mine to market, are key drivers of competitiveness for potash miners.

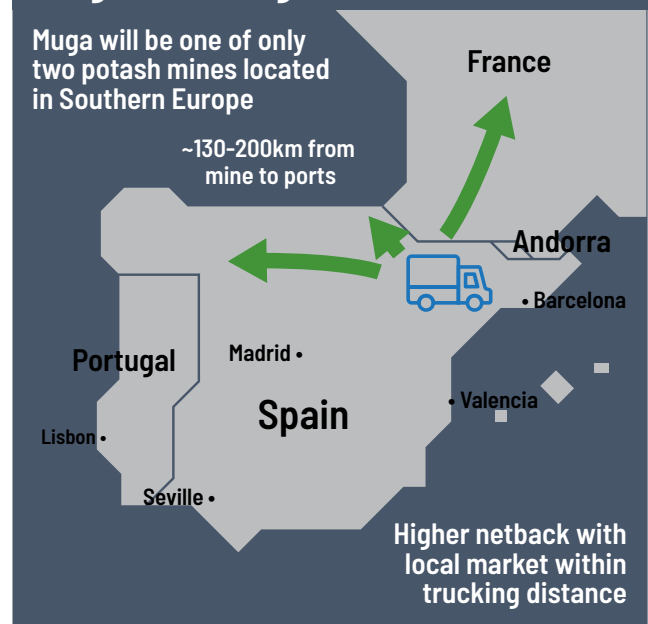
The ongoing ability of consumers to source product from Russia and Belarus despite sanctions is expected to exert more bearish pressure on prices through the remainder of 2023. However, demand is expected to tick higher moving into 2024, triggering a rise in capacity utilisation from producers, with prices moving higher as they have done previously.



Muga's strategic location

Muga will be one of only two potash mines located in Southern Europe

~130-200km from mine to ports



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