

# Phosphate prices are preparing for a significant increase in the long term

☒ Phosphorus is perhaps the essential element in mineral fertilizers such as phosphate. Those who are strong proponents of manmade climate change theories will find little comfort in the fact that last April the IPCC (Intergovernmental Panel on Climate Change) has issued a warning that phosphorus risks literal extinction at the end of this century. Phosphorous is the crucial ingredient in fertilizers and for food production. It would not be unfair to suggest that the depletion of phosphorous would be even more tragic than the depletion of oil resources for the survival of mankind. Regardless of the credibility of the IPCC report, the warning has certainly highlighted the value of phosphate. Even if the phosphate market should endure some short term bearish price fluctuations, the long term prospects are decidedly bullish, considering the proliferation of warnings about the risk that the world will soon be running out of it.

There is an additional bullish factor. One of the main risks associated with phosphate is geopolitical. Phosphate reserves are located in only a few countries such as Morocco, China, Jordan, Tunisia or Syria. Surely, the USA also produces phosphate but, most of it addresses domestic demand. Nevertheless, three quarters of global reserves are in Morocco, especially in the Western Sahara. Within a few decades, Morocco – and perhaps Jordan, the second largest producer – could be enjoying a virtual phosphate monopoly if more resources are not developed.

In the long term there is only a bullish case for phosphate. Global demand for phosphate rock can only increase in order to meet the needs of a growing population and more diverse diets

in rapidly growing countries, richer in meat. There is also an increasing use of biofuels, which will drive a more industrial aspect of agricultural demand. However, and this is the 'good news' for investors, phosphate is not infinite and it has no alternative. In the very short term phosphate prices will remain stable and not very exciting. In October 2013, rock phosphate cost USD\$ 120/ton. In March 2014, the price was USD\$ 108/ton and the low point in the interim was in December 2013 at USD\$ 102/ton. Prices for commonly used phosphate derivatives such as urea or DAP have hovered in the USD\$ 300-400 range. Phosphate is usually processed to deliver higher quality products as well as urea. The next few months should lead to a slight phosphate price increase. Nevertheless, in Australia, farmers have been forced to delay planting because of a lack of phosphate fertilizers. The fact that Australia, which produces 80% of its fertilizer needs, finds itself in a situation of shortage, illustrates the phosphate market's potential. In one year, the price of DAP, phosphate of ammonia – this is the most commonly used phosphate derivative – increased by 50% to over \$ 400 per ton since the start of 2013.

The tension Ukraine and Russia has pushed prices for wheat and seeds higher, but US demand is not expected to increase due to the poor weather conditions in winter 2014. Dry weather in southern Russia and Kazakhstan, large wheat producers, has also contributed to higher prices. Corn planting in the US could be less bearish than the USDA has predicted, while lower prices have helped raise demand for corn feed. However, in 2013, there was a phosphate shortage because global fertilizer prices, phosphate in particular, were low. Export demand rose at the same time creating delivery bottlenecks, which will likely help sustain higher prices in some regions of the world. In the longer term, a report by Transparency Market Research entitled "Biofertilizers (Nitrogen Fixing, Phosphate Solubilizing and Others) Market for Seed Treatment and Soil Treatment Applications – Global Industry Analysis, Size,

Share, Growth, Trends and Forecast, 2013 – 2019”, demand for fertilizers such as phosphate will be increasing from an average of USD\$ 440.0 million in 2012 to USD\$ 1,028.7 million in 2019.

Africa will be one of the main factors contributing to higher world phosphate demand. Africa has the potential to increase the value of its annual agricultural output of \$ 280 billion in 2010 to \$ 500 billion by 2020 according to the African Development Bank (ADB). It also highlights that Africa has the potential to attract 880 billion dollars of investment in agriculture by 2030, generating high demand for products such as fertilizers, seeds, pesticides and machinery.

Despite recent financial and food crises, the prospects for African agriculture’s long-term growth are brilliant, especially if small farmers are helped to develop and specialize, adding value and reaching wider markets. The rise in food prices that peaked in 2008 and their continued volatility provide a unique opportunity for Africa to increase their investments in agriculture in order to ensure food security and stability. The main phosphate market trendsetter is Morocco’s OCP, which is by far the largest producer. Interest in phosphate is also bringing foreign investment back to Tunisia where the local state controlled Celamin has managed to attract Polo Resources (AIM and BSX: POL) has taken a 12.7% stake in the company to secure a phosphate resource to its agri-sector portfolio. Indeed, phosphate is valuable by itself in rock form and is also used in the manufacturing process of chemical fertilizers, essential components in the production of food.

---

# Al-Qaeda the latest threat to phosphate security



Al-Qaeda and rising gasoline prices in Morocco have the potential to upset the phosphate apple-cart.

Morocco, as we know, is the key phosphate player with its enormous reserves and being the world's largest exporter of rock phosphate. It looks to become even more dominant; as reported here on Investor Intel, the country is planning its production of phosphate rock will expand from the present 30 million tonnes a year to 50 million tonnes a year by 2017, while downstream fertiliser production is set to expand from 3.5 million tonnes to 10 million tonnes over the same time period.

But this week we have heard of two developments that could just unsettle and unnerve the phosphate sector. And Morocco.

Here's the thing: while phosphate prices are subdued, that situation inhibits new mines around the world and leaves Morocco setting the pace. It has the money and skill to increase its production – which will act to keep prices low. However, any interruption to Morocco's supplies will see the phosphate price climb – and open the door for other projects to get up and running.

It is not just Morocco. As London brokers Libertas set it out in a comprehensive phosphate review: “The North African Kingdom of Morocco alone supplies more than one-third of global exports and the seven politically unstable



countries in the Middle East and North Africa (Morocco, Algeria, Tunisia, Egypt, Jordan, Syria, and Israel) have 79% of world reserves and produce 27% of the world’s output.”

So back to those two events.

News reports say Moroccan petrol prices jumped on Monday as the cash-strapped government began implementing a fuel price indexation system aimed at reining in oil subsidies and plugging a budget deficit, officials said. And then the All-Africa news service – each day it aggregates reports from 130 African news services – has posted that al-Qaeda in the Islamic Maghreb (AQIM) launched a 41-minute provocative video about Morocco which looks like spelling intent to cause trouble in the country.

On the petrol prices front, this will work its way through to food (and other prices) – and no one can forget that the so-called “Arab Spring” was triggered by a protest (and a self-immolation) over rising food prices in Tunisia. We shall have to wait and see whether the Morocco action triggers any demonstrations; after all, the phosphate industry heaved a big sigh of relief when the initial Arab Spring problems did not spread to Morocco although there were fears it might. This week diesel in Morocco rose 8.4% and petrol by 4.3%. The government was left with little choice as its budget deteriorated: fuel subsidies cost it more than \$6 billion a

year.



And then there is al-Qaeda.

According to All-Africa, the internet video mocks the domestic and foreign policy of the country and its efforts to fight terrorism. It also shows an image of the Moroccan monarch engulfed in flames and includes footage of al-Qaeda militants training in the forests and mountains of Algeria, ending with a call for young people to join the ranks of jihadists.

According to Mohamed Darif, a Moroccan researcher specializing in Islamic groups, al-Qaeda has been frustrated and increasingly angered by the fact that – while it has penetrated into Libya, into Egypt's Sinai and along the Algerian-Tunisian border – it has not managed to acquire a foothold in Morocco. According to terrorism experts, al-Qaeda feels it needs to carry out an operation that will shake the resolve of the Moroccan government.

Political stability is vital to Morocco's phosphate plans and influence. Shake that stability, and the industry is in a new ball game.

---



# Morocco's shift in Phosphate Strategy opens Opportunity for D'Arianne Resources

☒ D'Arianne Resources Management ('Arianne', **TSX.V: DAN**) is one of the few phosphate mining companies operating in Canada, or North America for that matter. Arianne is developing the Lac-a-Paul phosphorous titanium property, aiming to produce high grade apatite concentrate at 39% P2O5. This level of concentration is very high and higher than Moroccan phosphate which is about 30%. Apatite is a source of phosphate and has many uses, including as a gemstone, but it is mainly processed to produce fertilizer as it is rich in phosphorus. In North America, apatite derived fertilizers are used to promote the growth of a wide variety of crops are used to supplement the nutrition of many agricultural crops by providing a valuable source of phosphate.

Apart from the high mineralization grades at the Lac-a-Paul property, Arianne could earn a significant space within the context of the North American phosphate market. While potash is abundant, North America needs to import most of the phosphate it needs. Agrium's phosphate mine in Kapuskasing, Saskatchewan is scheduled to close while production in Florida, one of the few known phosphate sources in North America, is limited by environmental concerns. Most of the world's phosphate is produced in North Africa (Morocco, Tunisia) and the Middle East (Jordan, Syria). Such is demand for phosphate that there are projects to develop underwater phosphate deposits off the coasts of Namibia and New Zealand. Morocco, as the world's largest producer of phosphate, has a dominating position on the industry; therefore, its response to world demand offers valuable insights into current market conditions for this commodity.

Morocco is planning to boost production, also in response to much lower supplies from Tunisia due a longstanding labor problem. Yet, high-grade phosphate ore sources are declining, a problem that producers have so far confronted by beneficiating (washing, flotation or calcining) lower grade ores. Morocco is increasingly moving toward higher end processed phosphate fertilizer products (monoammonium phosphate-MAP and diammonium phosphate – DAP) through massive investments in beneficiation, which will use up much more of its rock phosphate. This suggests that Morocco will cut back exports of phosphate rock, notably to North America where companies like Mosaic uses it to produce its own line of DAP. Mosaic (NYSE: MOS), for instance imports lower grades of rock phosphate from Morocco for this purpose.

Morocco's shift of phosphate focus should be idea for Arianne, leaving it a great opportunity to compensate for the projected shortfall. Populations in developing economies such as China and India are also demanding more varied and richer diets, requiring increased food production and, consequently, more fertilizer. India is the world's largest phosphate importer while China has indigenous resources, deemed strategic by the government and therefore not – officially – exported. Arianne is therefore a very interesting prospect as it offers a high grade product without some of the risks and costs – transportation – linked to phosphate sourced in its areas where it is more typically mined.

Last summer, Arianne started working on a Bankable Feasibility Study (BFS) and its completion is a top priority this year as is divestment. Arianne expanded the drilling zone, increasing the drill holes from 48 (November 2011) to 123 in late 2012. The results of the new definition drilling will be available in the first months of this year and which will be used for the BFS. Arianne said it would divest all non-phosphate properties (including Heva, La Dauversière, Black Dog, Chico, Dulain, and Terres Rares) during 2013. The Company expects to



complete the divestment process in order to become “a leading Canadian Phosphate producer” as it moves from exploration to actual mine development. Arianne Resource’s flagship 25,000 hectares project at Lac a Paul is located about 200 km. north from Saguenay. The property has convenient access along the Chute-des-Passes logging road also used by Rio Tinto and Alcan. The government of Quebec will help the project, providing assistance for additional infrastructure, including a railway that will enable the Company to transport phosphate concentrate directly from the mine to the port of Saguenay to facilitate international export.

Arianne’s field data has validated the projections, which indicates that Lac-a-Paul has even greater production capacity than expected as a result of drilling in the Lise, Nicole, La Traverse and Lucie zones. Before, the new exploration program, measured and indicated resources at the property amounted to a combined 347.7 million tons at an average 6.50% P<sub>2</sub>O<sub>5</sub> and 8.43% TiO<sub>2</sub> and 114.3 million tons of 5.46% P<sub>2</sub>O<sub>5</sub> and 6.19% TiO<sub>2</sub> inferred resources. The new findings at similar grades suggest, according to Arianne, a potential for 750 million tons.