

25 November 2019

Emmerson Plc (“Emmerson” or the “Company”)

PEA Demonstrates Potential for Low Capex SOP Production with Outstanding Cashflow Generation

Emmerson Plc, the Moroccan focused potash development company, is pleased to release a summary of the results of its recently completed Preliminary Economic Assessment (‘PEA’) for its Sulphate of Potash project (“SOP Project” or “the Project”) in Morocco, which takes the total post tax NPV₁₀ across its project portfolio to in excess of US\$1.8 billion.

Highlights

- SOP Project has **post tax NPV₁₀ of US\$411 million¹ and IRR of 52.1%** over an initial 20-year project life
 - Assumes flat real price of US\$675/tonne received representing a c. 10% discount to the average realised price in the last five years in the US SOP market²
- **All-in-sustaining delivered cost** to the US SOP market of **US\$411/tonne**
 - **Significantly below dominant market incumbent producer in the US market**
 - Post tax cash margins over 40% based on current SOP prices
- Robust cashflow generation at a broad range of potash price assumptions
 - Average post-tax free cash flow of **US\$70 million** per annum
 - **Less than 2 year capital payback**
- Very low total **pre-production capital cost of US\$97m** (US\$119m including 30% contingency)
 - Estimates based on three quotes from Mannheim technology providers
- **Strong potential to manufacture additional valuable by-products** by utilising waste hydrochloric acid production which have been **excluded from the economic assessment in this PEA**
 - Direct sales of hydrochloric acid
 - Treatment of phosphate rock with hydrochloric acid to produce high value animal feed (di-calcium phosphate)
 - Treatment of limestone to produce high value industrial salt (calcium chloride)
- Port of Jorf Lasfar has confirmed capacity and is zoned as an industrial area
 - Simple utility connections including electricity and gas
 - Proximal to sulfuric acid production
 - Deep water port for export, ideally located for potential customers in several markets including the US
- Post tax NPV₁₀ across **Emmerson’s project portfolio now in excess of US\$1.8 billion**
 - Khemisset Potash Project – US\$1.14bn³
 - SOP Project – US\$411 million
 - Salt Project – US\$266 million⁴
 - NPV₁₀ to Capex ratio of 3.5x

Hayden Locke, CEO of Emmerson, commented: “The PEA has shown that the production of SOP via the Mannheim process, in the Port of Jorf Lasfar in Morocco, has the potential to deliver a significant uplift in margins

¹ Nominal NPV₁₀, 2% escalation applied to operating costs and revenues

² Based on Compass Minerals Annual Reports 2015 – Q2 2019

³ Based on industry expert Argus FMB MOP price forecasts

⁴ Based on salt sales of 2Mtpa to the east coast US market

to Emmerson, taking the average, potential EBITDA across its portfolio of assets to over US\$300 million per annum.

“Emmerson has engaged with multiple reputable Mannheim manufacturers to derive its capital and operating cost estimations giving a high degree of confidence in the numbers presented. This shows a very low capital cost and highly cash generative SOP Project, with the potential to deliver an additional US\$411 million in post-tax NPV₁₀ to our already outstanding portfolio of projects.

“Importantly, due to the locational advantages of operating in Morocco, the SOP Project is projected to have an all-in-sustaining delivered cost to customer in the US SOP market of US\$411/tonne, which is approximately 35% lower than the incumbent US SOP producers operating costs, providing a strong and sustainable competitive advantage for the delivery of SOP into this market.

“The Feasibility Study for Khemisset continues to progress well, and we expect continuing news flow for the remainder of this year and early next year as we progress towards delivering the study in the first half of 2020.”

Project Overview

Emmerson continues to evaluate opportunities to enhance margins and diversify its product offerings. SOP is the second largest potassium-based fertiliser market segment and is considered a premium product on account of its low chloride content. The study completed contemplates converting approximately 25% of the muriate of potash (“MOP”) production from the Khemisset Potash Project to SOP via the well understood Mannheim process.

SOP is a low-chloride fertiliser that has typically enjoyed a premium price relative to MOP and is used in arid regions – such as the Middle East – where chlorine can build up on the soil due to low levels of rainfall. It is also being increasingly used for higher value crops such as soft fruits, vegetables, turf, and tobacco, which typically have lower tolerance for chlorine.

The Company reviewed several potential technologies capable of producing SOP from MOP including ion exchange technologies. Due to its low technical risk, low capital cost, and well understood operating cost profile, the Company selected the Mannheim process as its preferred processing route.

Approximately 50% of global SOP production comes from Mannheim producers. Importantly, none of these producers are vertically integrated potash producers, meaning they must source their MOP feedstock from the very tightly controlled potash market.

During the PEA, detailed analysis was conducted on all aspects of the project, providing a thorough understanding of the key business drivers. Based on this, the Company has identified several key areas where a sustainable competitive advantage is likely to occur, including:

- A captive source of MOP proximal to the Mannheim production facility by land;
- Low-cost sulphuric acid, ideally co-located with the project;
- Proximity to export ports and end customers;
- Production facilities located in port with gas and steam; and
- Proximity to either consumers of hydrochloric acid, sources of phosphate rock and/or alternate limestone related options to either neutralise acid or convert it into a high margin derivative product - this is key as the primary operating issue that Mannheim producers face is the disposal or monetisation of the waste HCl stream.

Based on the analysis conducted in the PEA, the Company believes Emmerson possesses an advantage over other Mannheim producers in each of these key areas:

- The Khemisset Potash Mine will provide approximately 25% of its production to the SOP facility providing significant margin enhancement to the Company and security of supply for the SOP facility;
- The Port of Jorf Lasfar has one of the largest sulfuric acid production plants in Africa, while OCP, via its Jorf Lasfar fertiliser facility, is a significant end user for both MOP and SOP;
- Jorf Lasfar is ideally located to service multiple SOP markets outside of Morocco including the premium priced US market;
- Jorf Lasfar has significant industrial sites with confirmed capacity for an SOP Mannheim facility, outstanding connections to all utilities including gas and electricity; and
- Morocco is the largest producer of phosphate rock in the world and the primary export port location for it is Jorf Lasfar. In addition, there are numerous limestone quarries within 50km of the Port; this is fundamental in management of waste by-products, especially hydrochloric acid.

Key Assumptions and Results from Study

The Company envisages an SOP Mannheim facility with production capacity of 240,000 of K₅₀ SOP per annum over an initial project life of 20 years. This will consume approximately 205,000 tonnes of MOP per annum.

Capital cost estimates include a contingency of 30% and capital and operating cost estimates have an accuracy of ±30-50%. Key assumptions and results are outlined in **Table 1** below:

Parameter	Value
Initial Operating Life	20 years
Average Annual Steady State Production Rate	240,000 metric tonnes
Flat Real SOP Price FOB Morocco	US\$675/tonne
Capital Cost (including US\$28m contingency)	US\$119 million
All-in-Sustaining Cost FOB Morocco (excluding MOP)	US\$101/tonne
All-in-Sustaining Cash FOB Morocco (including MOP at \$345/tonne)	US\$396/tonne
Average Steady State EBITDA	US\$74 million
Average Steady State EBITDA Margin	42.0%
Average Steady State Annual Post-Tax Cash Flow	US\$71 million
Average Steady State Post-Tax Cash Margin	40.0%
Post Tax NPV10 (nominal)	US\$411 million
Post Tax IRR (nominal)	52.1%
Post-tax Payback Period	Less than 2 years

Table 1: Key Assumptions and Results

Economic Sensitivity Analysis

Sensitivity analysis of the SOP Project shows it to be a financially robust project that delivers very strong NPVs and cashflows through a range of SOP prices. As expected, it is relatively insensitive to changes in capital and operating costs and by far most sensitive to changes in assumed SOP price received. A summary of NPVs at a variety of potash prices and discount rates can be seen in **Table 2** below.

SOP PRICE CFR USA	DISCOUNT RATE				
	5%	8%	10%	12%	15%
525	253,374,721	169,024,303	128,518,132	96,821,467	61,152,201
600	474,116,253	336,249,863	269,933,114	217,919,726	159,147,717
675	694,857,786	503,475,424	411,348,096	339,017,985	257,143,232
750	915,599,318	670,700,984	552,763,079	460,116,245	355,138,748
800	1,062,760,339	782,184,691	647,039,733	540,848,417	420,469,091

Table 2: NPV Sensitivity to SOP Price and Discount Rate

Key Financial Assumptions for DCF Model
Flat MOP prices over Life of Mine (Base case US\$345/tonne delivered Jorf Lasfar)
Nominal Discount Rate of 10%
Costs and revenues escalated at 2% per annum over life of mine
5 year corporate tax holiday
17.5% corporate tax rate on exported product
One year pre-production construction phase, ramp-up 50% in year 1

Table 3: Key Assumptions Used in Financial Model

Financial Metrics

Capital Cost Estimates

For the Mannheim equipment cost estimates, the Company obtained three quotes from suppliers. Costs for the Mannheim equipment are estimated at US\$4.3m per 20ktpa twin-furnace unit including piping, electrical and instrumentation. The Study capital estimate has been developed assuming an initial 120ktpa production, ramping up to 240ktpa.

Capital cost, including site preparation and civil construction for buildings, utilities connections and all associated infrastructure for 240ktpa SOP production is US\$92 million. Including a 30% contingency, the capital cost increases to US\$119 million.

Operating Cost Estimates

Key operating inputs, which form the basis of ongoing operating costs, were outlined from each of the supplier's proposals. To build up operating costs estimates, weighted average input requirements and operating and maintenance burdens were established for the various vendors and were used to establish the estimated operating expenditure (opex) budget. Mannheim is a very well understood industrial process and, predictably, so are the estimated input requirements. The Company used industry reported costs for sulphuric acid, while other input costs were obtained through quotes from local providers.

Total costs excluding MOP are estimated at US\$89/t SOP. Adding MOP cost (at US\$345/tonne delivered) and sustaining capital drives an all-in-sustaining cash cost (AISC), FOB Morocco, of US\$396 per tonne of SOP produced.

Mannheim Process Overview

The Mannheim process is a well understood process used to produce approximately 50% of global SOP supply. Furnaces work by combining between 570kg to 580kg of 98% sulphuric acid and between 850kg and 860kg of MOP at a temperature of around 600 degrees (through natural gas) to produce 1,000kg of SOP.

The by-product chlorine gas is absorbed by water in absorption towers to produce hydrochloric acid with limited atmospheric emissions. Hydrochloric acid is the primary by-product and can be problematic in terms of disposal depending on the location of the plant.

Each furnace produces a maximum of c. 10,000tpa, but they can be combined in multiple lines creating a facility capable of producing up to 500,000 tonnes per annum or more.

New technology is constantly evolving, and furnaces are now fully automated, reducing labour requirements and, thus, operating costs. Similarly, recent research into acid-resistant technology has increased the lifetime of inner-furnace components, reducing maintenance costs and making furnaces more operationally efficient.

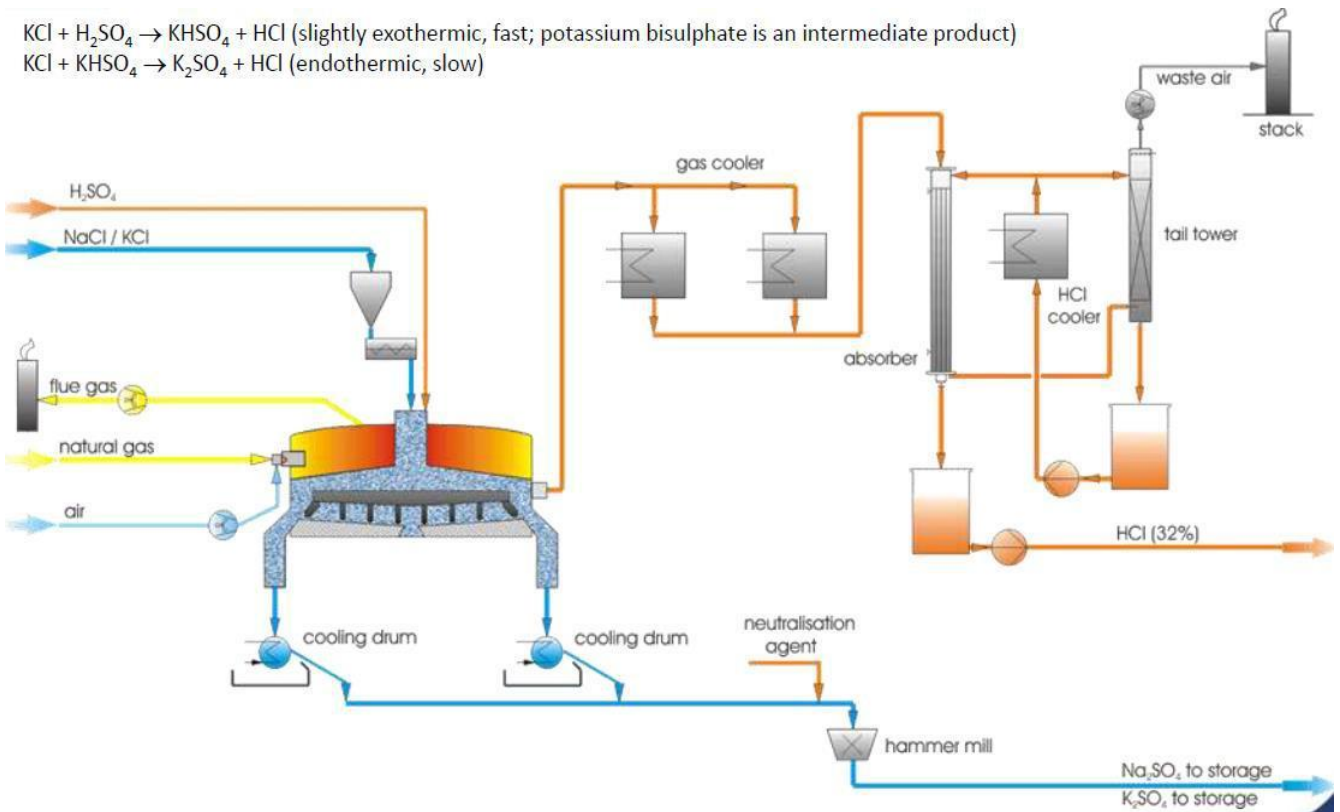
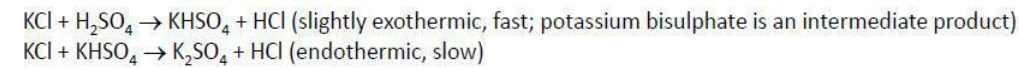


Figure 1: Mannheim Process High Level Diagram

The industrial platform of Jorf Lasfar presents a wide range of options and advantages. It is an industrial site with various infrastructure in place and multiple prepared sites available for large scale industrial plants. Jorf Lasfar is only 305Km from the Khemisset Potash Project and is connected by both road and rail.

Important aspects of the Port for Emmerson include the availability of pre-prepared industrials sites, with minimal investment required in site civil works, outstanding connections to all utilities, including electricity and water, and the potential to be co-located with a sulphur burner, which would provide highly competitive sources of sulphuric acid and co-generated steam.

Jorf Lasfar is a deepwater port capable of accepting ships of any size. It is ideally located to service multiple potential markets for SOP including the premium US and north west European markets. In addition, Jorf Lasfar and its immediate area has a number of limestone quarries; this is fundamental in the management of waste by-product hydrochloric acid, which is produced via the Mannheim process. Lastly, there is potential to expand the product offering by treating phosphate rock or limestone with hydrochloric acid to produce valuable by products. Jorf Lasfar is the major export port for phosphate rock from Morocco.

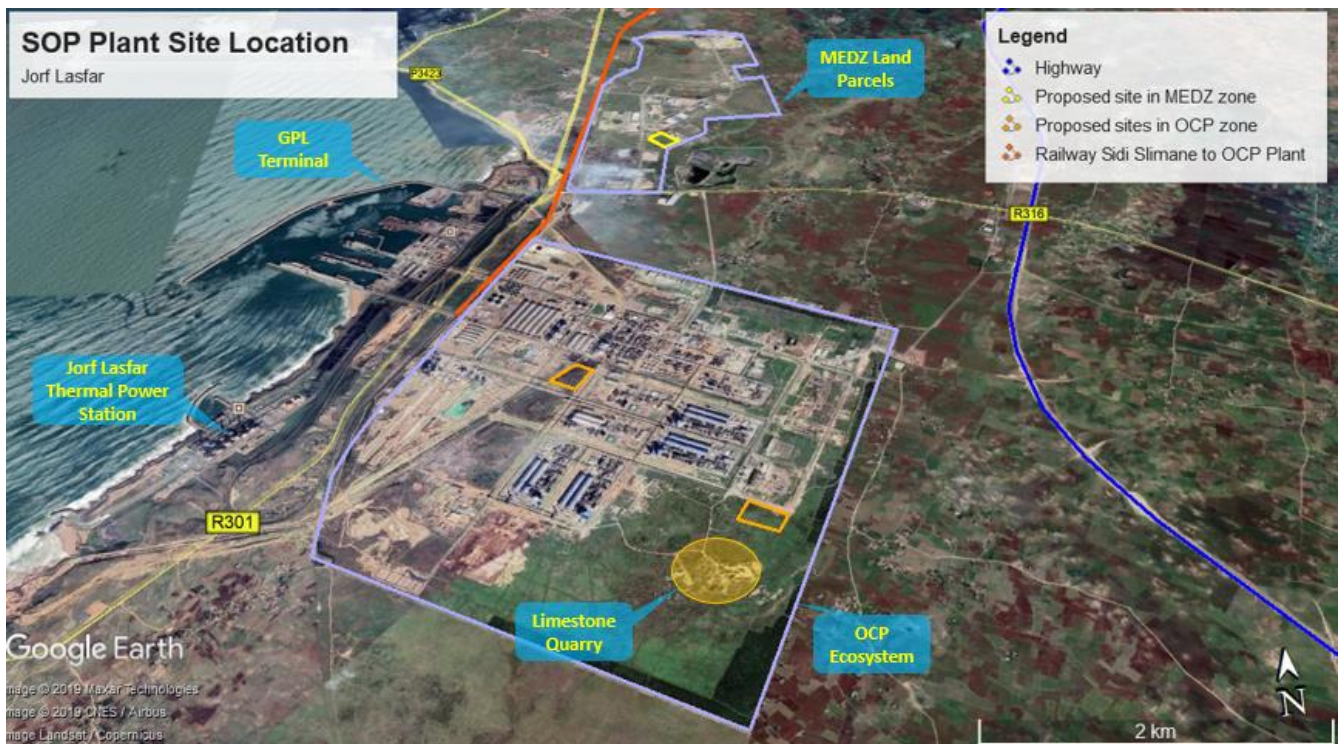


Figure 2: Overview of Potential Sites and Infrastructure at Port of Jorf Lasfar

****ENDS****

For further information, please visit www.emmersonplc.com, follow us on Twitter (@emmerson_plc), or contact:

Hayden Locke Edward McDermott	Emmerson Plc	Tel: +44 (0) 20 7236 1177
Damon Heath Isabella Pierre	Shard Capital Partners	Tel: +44 (0) 20 7186 9950
Isabel de Salis Megan Dennison	St Brides Partners Ltd Financial PR/IR	Tel: +44 (0) 20 7236 1177

Notes to Editors

Emmerson's primary focus is on developing the Khemisset Potash Project located in Northern Morocco. The Project has a large JORC Resource Estimate (2012) of 537Mt @9.2% K₂O and significant exploration potential with an accelerated development pathway targeting a low capex, high margin mine. Khemisset is perfectly located to capitalise on the expected growth of African fertiliser consumption whilst also being located on the doorstep of European markets. This unique positioning means the Project will receive a premium netback price compared to existing potash producers. The need to feed the world's rapidly increasing population is driving demand for potash and Emmerson is well placed to benefit from the opportunities this presents.

The information contained within this announcement is deemed by the Company to constitute inside information as stipulated under the Market Abuse Regulations (EU) No. 596/2014.