



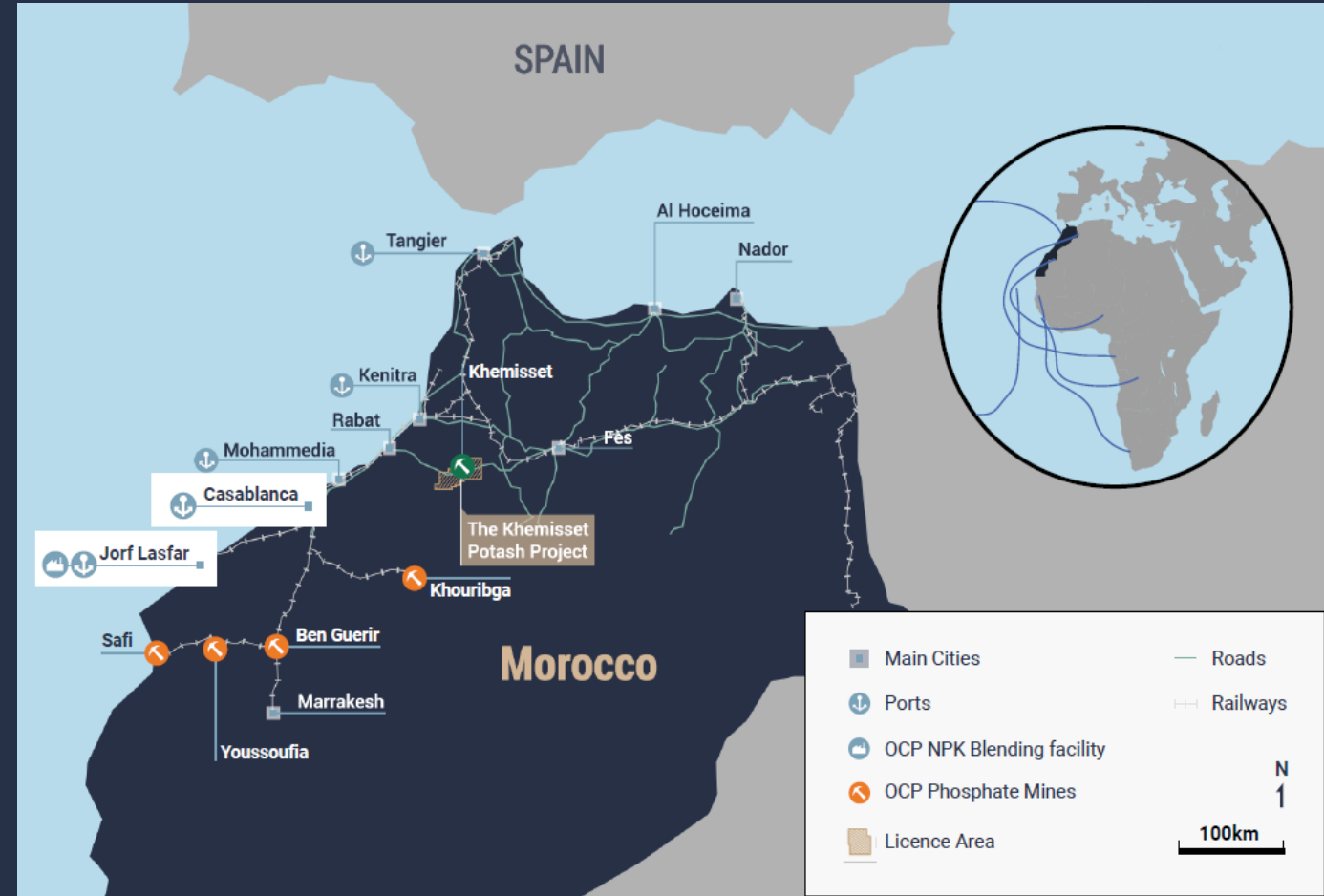
EMMERSON PLC

Khemisset Multi-mineral Process Transformational Enhancement to Khemisset Project

February 2024

KHEMISSSET PROJECT AT A GLANCE

- New potash project producing over **0.7mtpa MOP over 19 year mine life**
- Well-situated **with excellent infrastructure**, 195km from deep-water port
- Africa's **first source of MOP in 25 years** – set to meet the demands of the world's fastest-growing population
- JORC Resource of **537Mt @ 9.24% K₂O** and strong exploration potential
- Original design shows **robust economics** – innovative new process adds significant value
- New sustainable process (KMP) eliminates deep-well injection and **reduces process water consumption by up to 60% (total water by 50%)**
- KMP will **produce new slow-release fertiliser** products well-situated for burgeoning African market as well as MOP

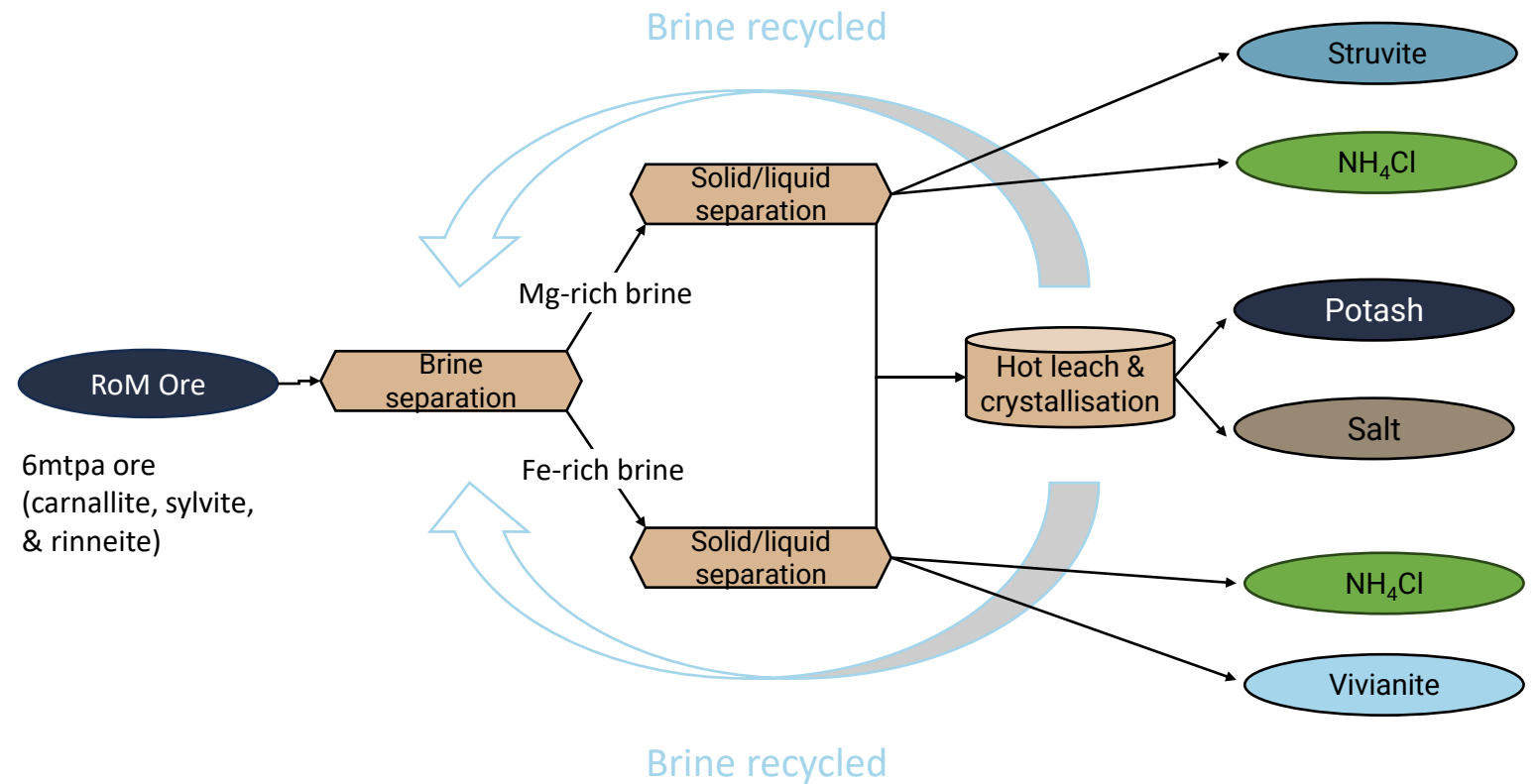


KHEMISSSET MULTI-MINERAL PROCESS (KMP) – A TRANSFORMATIONAL DEVELOPMENT

- Scoping Study complete for a transformational enhancement to the Khemisset Project
- KMP involves the treatment of magnesium and iron-rich brines to create **struvite** and **vivianite** and by-products of **salt** and **ammonium chloride**, before recycling the brine
- Struvite and vivianite are **high-value, slow-release fertilisers** which command a premium price, likely to be well-suited to African market
- Significant environmental benefits
 - Eliminates need for **Deep Well Injection (DWI) completely**
 - Reduces **water consumption by 50%**
 - **Slow-release fertilisers** combat **phosphate run-off** and **reduce application rates** for farmers
 - Increases **potash recovery** from **85% to 91%**
- Minimal changes required to plant design – net capex reduced by US\$14m
- Economics substantially enhanced - increases **NPV₈** from **US\$1.0bn to US\$2.2bn** and **IRR** from **26% to 40%**
- KMP is patent protected as a breakthrough discovery – **this novel process is applicable to other carnallitic and rinneitic potash deposits and has potential to generate a licencing revenue stream**

KMP PROCESS – SIMPLE CHANGES TO PROCESS WITH MAJOR BENEFITS

- Khemisset potash ore is a mix of three types – sylvite (pure KCl), carnallite (includes Mg), and rinneite (includes Fe)
- KMP separates carnallite and rinneite ores to create two discrete brines
- Struvite then extracted from Mg-rich brines, and vivianite from the Fe-rich brines, by addition of phosphate (DAP) and ammonia
- Potash and salt recovered from the clean brines, which are then recycled



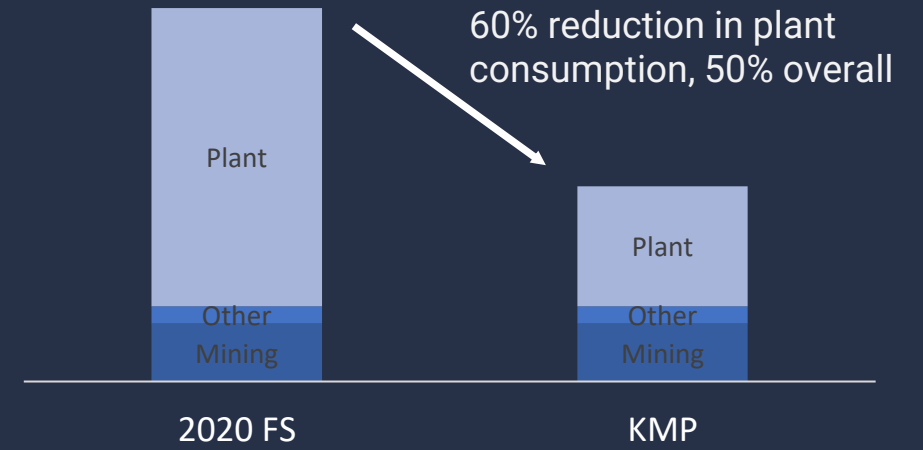
Recycling process reduces project water consumption by 50%, eliminates need for DWI completely



CONSIDERABLE ENVIRONMENTAL BENEFITS

- KMP initially developed as an alternative to DWI
- KMP **eliminates DWI** by recycling brine rather than disposing of it as waste
- It thus **reduces water consumption by 50% and process water by 60%** compared with the 2020 FS - major improvement in context of water issues in Morocco
- Struvite and vivianite have environmental advantages by being slow-release fertilisers
 - Reduced phosphate run-off into rivers/streams, avoiding eutrophication and damaging algal blooms
 - Low solubility allows less frequent application by farmers
- New fertiliser products enhance **Morocco's position as a fertiliser hub** and a key player in global food security

Water consumption



A COMPELLING FINANCIALS PROPOSITION

- KPIs from 2020 Feasibility Study updated for cost inflation and design changes / optimisations
- Impact of KMP on economics was modelled based on these updated financials to allow a like-for-like comparison with the Original Design
- Cost inflation has increased capex/opex, while MOP price assumptions are currently in line with those in 2020
- Original Design remains attractive – US\$258m EBITDA, US\$1.0bn NPV₈, 26% IRR
- **KMP unlocks significantly improved returns US\$440m EBITDA, US\$2.2bn NPV₈, and 40% IRR**

	2020	2023 Revised Updates	
	Feasibility Study	Original Design	With KMP
Mine life	19 years	19 years	19 years
Ore extraction rate	6 mtpa	6 mtpa	6 mtpa
MOP price	US\$412/t	US\$412/t	US\$412/t
Struvite price	-	-	US\$500/t
Vivianite price	-	-	US\$299/t
Potash (MOP) production	733 ktpa	733 ktpa	782 ktpa
Struvite production	-	-	748 ktpa
Vivianite production	-	-	134 ktpa
MOP cash cost FOB Casablanca	US\$147/t	US\$164/t	US\$156/t
MOP cash cost CFR Brazil	US\$157/t	US\$177/t	US\$169/t
Capex	US\$411m	US\$539m	US\$525m
Payback	2.5 years	3.5 years	2.5 years
Average annual EBITDA LOM	US\$286m	US\$258m	US\$440m
After-tax NPV₈ (nominal)	US\$1.4bn	US\$1.0bn	US\$2.2bn
After-tax IRR (nominal)	40%	26%	40%



KMP improvements align the project more closely with the United Nations Sustainable Development Goals (SDGs)



- | | | | |
|--|--|---|--|
|  <p>1 NO POVERTY</p> | <p>Creates employment in a developing province in Morocco</p> |  <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> | <p>Eliminates the requirement to dispose of waste brines through DWI and sourcing project water by recycling grey water</p> |
|  <p>2 ZERO HUNGER</p> | <p>Strengthens African food security with fertiliser production in Morocco</p> |  <p>13 CLIMATE ACTION</p> | <p>Improves the project's carbon footprint and uses recycled water</p> |
|  <p>6 CLEAN WATER AND SANITATION</p> | <p>Reduces process water consumption by 60%</p> |  <p>14 LIFE BELOW WATER</p> | <p>Converts DWI waste into two slow-release fertiliser products, limiting eutrophication</p> |
|  <p>7 AFFORDABLE AND CLEAN ENERGY</p> | <p>Uses predominantly renewable sources of electricity</p> |  <p>15 LIFE ON LAND</p> | <p>Frees up excess water for agricultural or other beneficial purposes</p> |
|  <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> | <p>Introduces a new, innovative concept that could be adopted in Morocco and beyond</p> |  <p>17 PARTNERSHIPS FOR THE GOALS</p> | <p>Envisages partnerships with community and government agencies for sustainable development</p> |



STRUVITE & VIVIANITE – PREMIUM MULTI-NUTRIENT FERTILISERS

STRUVITE



Granulated struvite
taken from early tests

- Slow-release fertiliser containing nitrogen and phosphorous (macro-nutrients) plus magnesium (a micro-nutrient)
 - 5% nitrogen, 28% phosphate, 0% potassium, 16% magnesium (expressed as 5-28-0 + 16Mg).
- Currently manufactured in small quantities - 250ktpa – but limited by production. (KMP would produce c. 800ktpa)
- Low-solubility offers environmental benefits as well as efficiency of application (lower cost to farmers)
- Struvite commands a premium due to being multi-nutrient fertiliser, as well as environmentally beneficial
- Nutrient base case price of US\$424/t. Current prices in North America are approximately US\$800-1,300/t
- Economic model shows strong profitability at a conservative price of US\$500/t

VIVIANITE



Vivianite
sample



- Also slow-release fertiliser, containing phosphates and the micronutrient iron
 - 0% nitrogen, 26% phosphate, 0% potassium, 30% iron (expressed as 0-26-0 + 30Fe).
- Not currently produced in large quantities as a fertiliser but similarities with struvite
- Premium price achievable, however, financials assume a price of US\$299/t, based on the value of the nutrients (phosphates and iron) it contains



CAPEX – INFLATION INCREASES BUT KMP LOWER

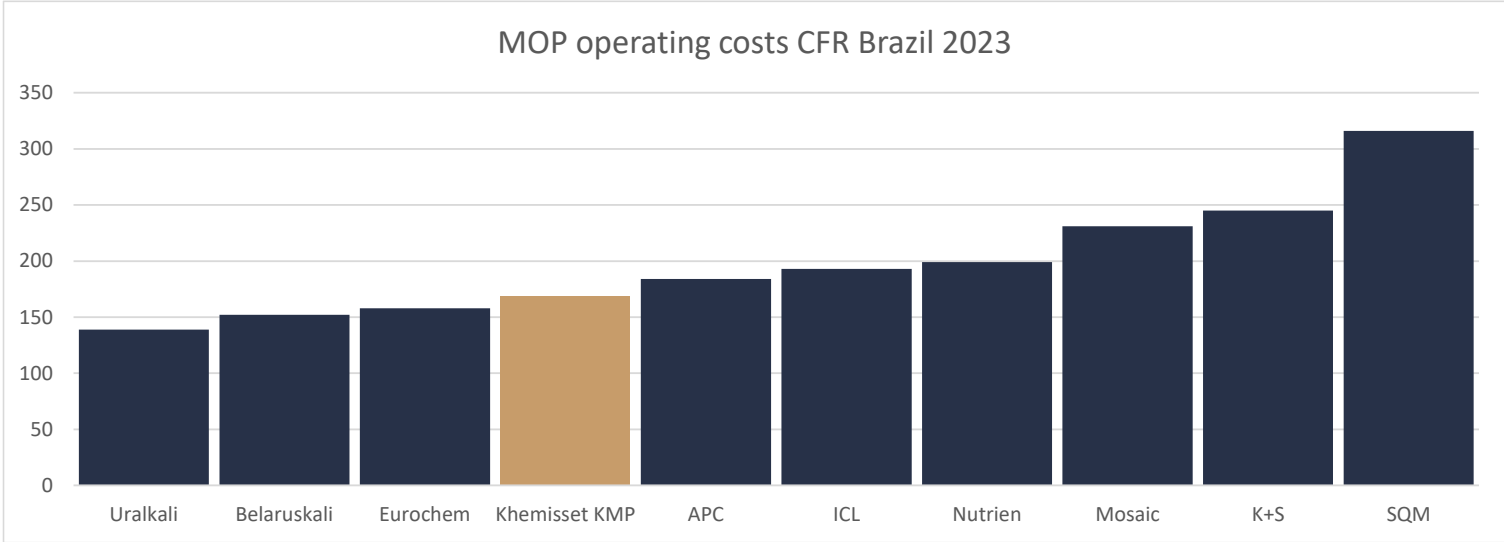
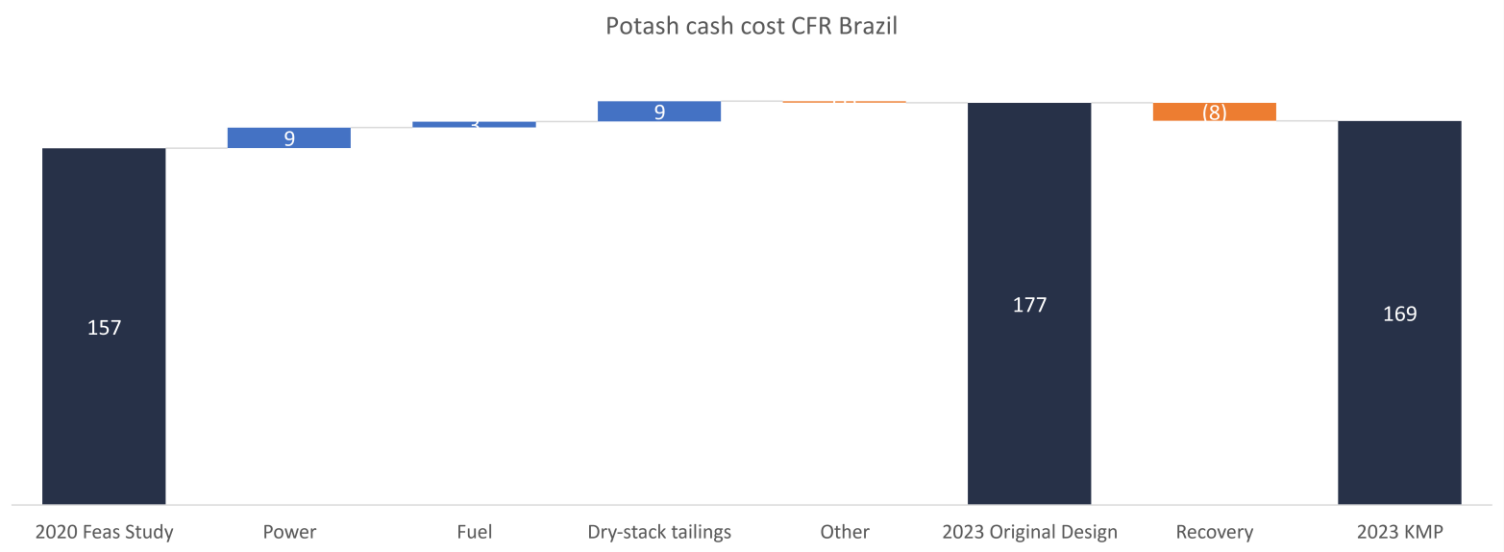
- Capex costs from 2020 revised in light of cost inflation of plant and equipment
- CEPCI process plant index has increased by >30% since 2020
- Design optimisations from Basic Engineering have also been included in updates:
 - Mine access based on 4 declines not 2
 - Water sourcing now from wastewater treatment plant
 - Process plant costs prepared in detail by Barr Engineering
- KMP lowers capex by US\$14m - US\$11m of incremental capex in the process plant, offset by removal of US\$25m of DWI capex

US\$'000	2020	2023 Updates	
	Feasibility Study	Original Design	KMP
Mine and mine access	100	133	133
Site development	4	8	8
Processing	153	200	200
Site infrastructure	14	37	37
Tailings facility	8	9	9
DWI Capex	22	25	-
KMP additional plant	-	-	11
Contingency	46	45	45
Subtotal Direct	347	457	443
Support and other	31	39	39
EPCM	33	43	43
Subtotal Indirect	64	82	82
Total	411	539	525



KHEMISSSET ATTRACTIVE POSITION ON COST CURVE

- Potash unit costs US\$169/t CFR Brazil for KMP (US\$177/t for Original Design)¹
- Increases since 2020 FS due to power (electricity) and fuel price rises, & design changes (inc selection of safer, dry-stacking option for salt tails)
- Prices as at Nov 2023 – electricity prices in Morocco expected to decrease in line with global trends, presenting upside
- KMP process results in increased recoveries (85% to 91%) due to recycling brines
- Khemisset highly competitive on cost curve – only Russian/Belarus producers lower



¹ potash costs exclude benefit of new KMP products

Source: Argus Media and company websites



STRUVITE & VIVIANITE BOTH PROFITABLE PRODUCTS

- Struvite and vivianite marginal cost primarily driven by phosphate (DAP) and ammonia used as reagents
- Struvite price of US\$500/t estimated as a premium over nutrient value (c. 18%). Current struvite prices in North America exceed US\$1,000/t (in smaller quantities)
- At Struvite prices of US\$750/t and US\$1,000/t, IRRs increase to 53% and 64% respectively
- Vivianite is currently less commonly used so US\$299/t price forecast is nutrient value only
- Ammonium chloride is produced alongside struvite and vivianite, and can be sold as a fertiliser (among other uses), and is therefore shown as a credit

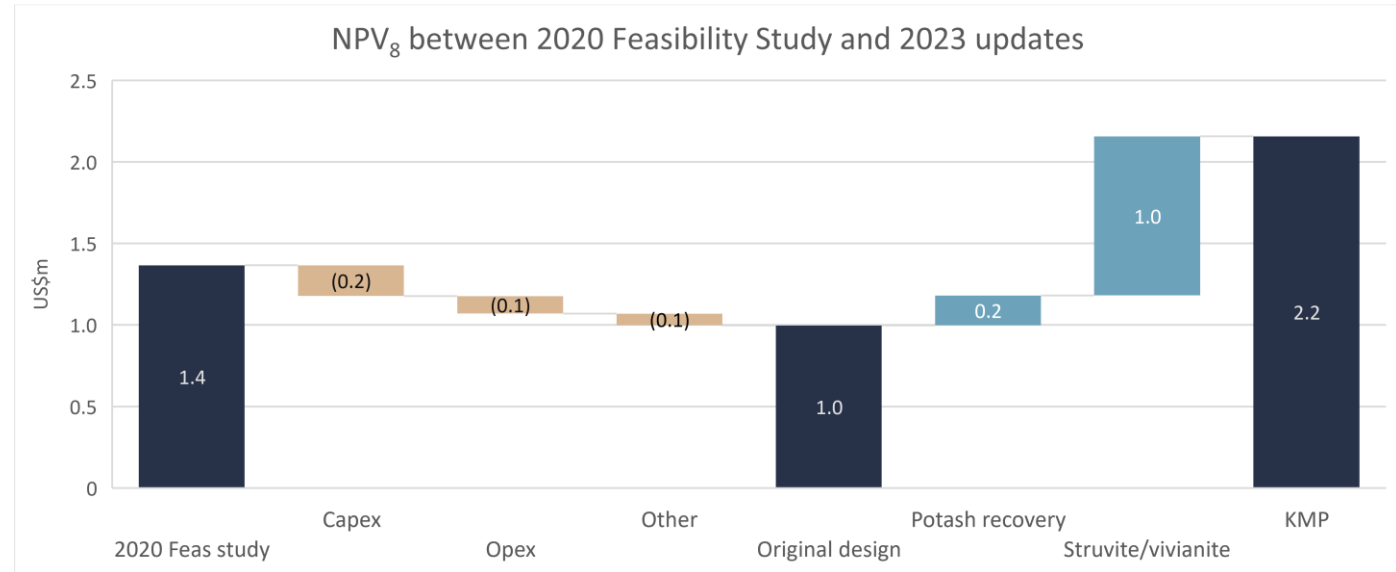
Unit Margin	MOP	Struvite	Vivianite
Sales price	412	500	299
Production costs	135	1	1
DAP	-	307	301
Ammonia	-	34	33
G&A	3	-	-
NH ₄ Cl credit	-	(55)	(80)
Production cost	138	287	254
Gross product margin	274	213	45
Gross product margin %	67%	43%	15%

Struvite and vivianite offer additional economic value even at conservative pricing assumptions



KMP INCREASES KHEMISSSET VALUE BY 120% to US\$2.2bn

- NPV₈ of **US\$2.2bn** and **IRR of 40%** using MOP prices of US\$412/t and struvite prices of US\$500/t
- KMP adds US\$1.2bn of NPV₈ compared with the Original Design
- Struvite prices currently attract premium prices over nutrient content
 - US\$750/t -> IRR of 53.1% and NPV₈ of US\$3.6bn
 - US\$1,000/t – IRR of 64.1% and NPV₈ of US\$5.1bn
- Project remains attractive at lower MOP prices (NPV₈ US\$1.4bn at US\$300/t)



KMP - IRR		Struvite price US\$/t						
		400	450	500	550	600	750	1000
MOP price US\$/t	300	22.4%	26.2%	29.7%	32.8%	35.8%	43.8%	55.4%
	325	25.1%	28.7%	32.1%	35.1%	38.0%	45.9%	57.3%
	350	27.8%	31.2%	34.4%	37.4%	40.2%	48.0%	59.3%
	375	30.4%	33.7%	36.8%	39.7%	42.5%	50.0%	61.2%
	412	34.2%	37.3%	40.3%	43.1%	45.7%	53.1%	64.1%
	425	35.5%	38.6%	41.5%	44.2%	46.9%	54.2%	65.1%
	450	38.0%	41.0%	43.8%	46.5%	49.0%	56.2%	67.0%

KMP - NPV US\$		Struvite price US\$/t						
		400	450	500	550	600	750	1000
MOP price US\$/t	300	0.8bn	1.1bn	1.4bn	1.7bn	2.0bn	2.9bn	4.4bn
	325	1.0bn	1.3bn	1.6bn	1.9bn	2.2bn	3.0bn	4.5bn
	350	1.1bn	1.4bn	1.7bn	2.0bn	2.3bn	3.2bn	4.7bn
	375	1.3bn	1.6bn	1.9bn	2.2bn	2.5bn	3.4bn	4.9bn
	412	1.6bn	1.9bn	2.2bn	2.5bn	2.7bn	3.6bn	5.1bn
	425	1.7bn	2.0bn	2.2bn	2.5bn	2.8bn	3.7bn	5.2bn
	450	1.8bn	2.1bn	2.4bn	2.7bn	3.0bn	3.9bn	5.4bn



KHEMISSSET UNDERVALUED VS OTHER POTASH PROJECTS

Company	Market Cap (US\$)	Flagship Project	Country	NPV ₈ US\$	Cap-Ex US\$	IRR	Market Cap as % of NPV
Emmerson KMP	26.1m	Khemisset	Morocco	2,200m	525m	40.3%	1.9%
Western Resources	43.8m	Milestone	Canada	163m	110m	20.4%	27%
Gensource Potash	21.6m	Tugaske	Canada	268m	258m	19.5%	11.5%
Highfield	80.2m	Muga	Spain	1,965m	794m	23%	5.5%
Kore Potash	31.4m	Kola	Republic of Congo	1,452m*	2,100m	17.2%	1.5%
Karnalyte Resource	6.3m	Wynyard	Canada	372m*	580m	26.1%	2.5%

*NPV₁₀

Prices correct as at 25 Jan 2024



FURTHER OPPORTUNITIES AVAILABLE TO ADD VALUE

- Update mine plan to incorporate additional mineral recoveries from ore
- Further operational enhancements to KMP under consideration:
 - Using lower-cost phosphate to reduce unit costs
 - Recycle ammonium chloride into plant, reducing ammonia consumption
 - Investigate further Fe/Mg phosphate products
- KMP IP could be transferrable to other carnallite/rinneite potash operations in Morocco and beyond
- Develop capability to upgrade NaCl to industrial salt –additional revenue stream, while reducing surface tailings
- Potential to create own blended fertilisers on site



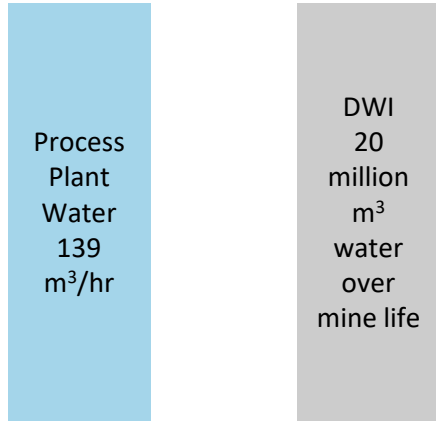
INNOVATIVE PROCESS ENHANCES PRODUCT OFFERING, ENVIRONMENTAL IMPACT, FINANCIAL OUTCOMES

ORIGINAL DESIGN

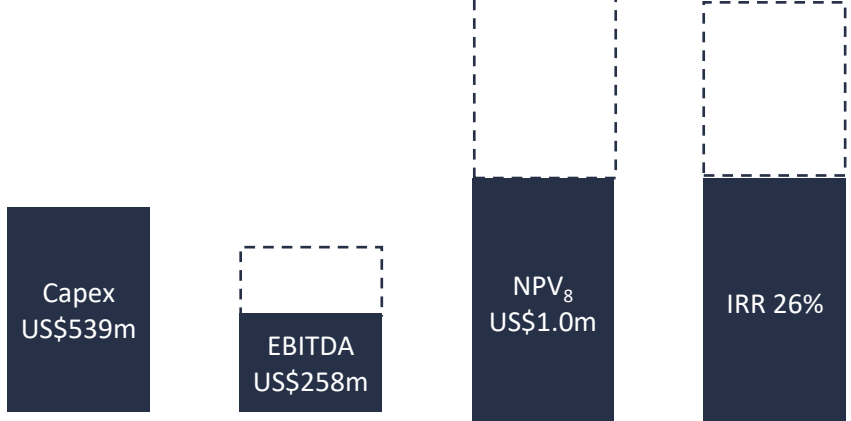
Greater product offering



Lower environmental impact

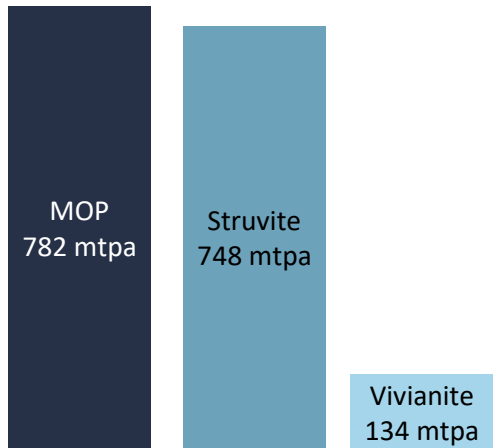


Significantly enhanced financial outcomes



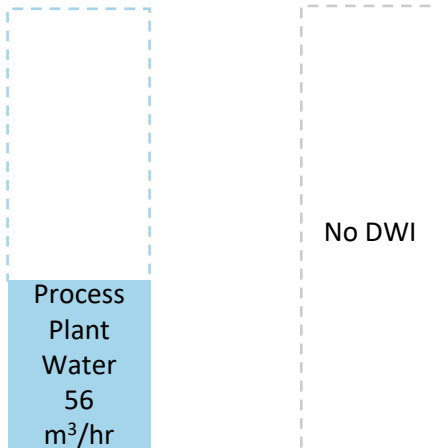
KMP

Slow-release fertilisers well-suited to Africa

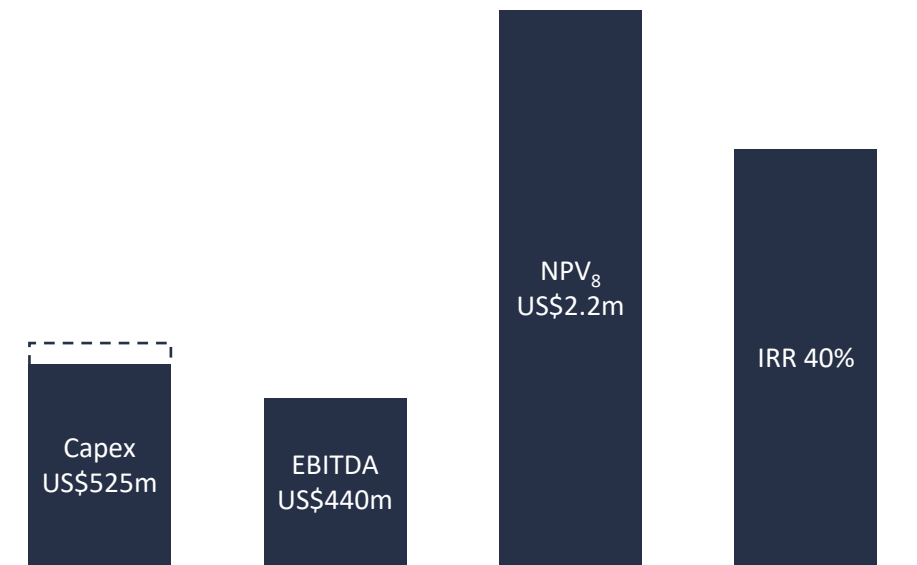


+6.6% +100% +100%

Process plant water usage 60% less, with no brine disposal



-59.7% -100%



-2.6% +70% +120% +54%



NEXT STEPS

- Negotiate offtake agreements for new products
- Engage with phosphate and nitrogen suppliers
- Finalise remaining testwork as required (including agronomic trials)
- Optimise and update life of mine plan to incorporate KMP products and efficiencies
- Incorporate results into revised Bankable Feasibility Study
- Secure financing ahead of construction



Sustainability & Water

- Eliminates disposal of waste brines through DWI
- Reduces process water consumption by 60%
- Frees up excess water for agricultural or other beneficial purposes
- Aligns with Moroccan authorities' water and waste management priorities

Large Value Upside

- Increase in Capex offset by removal of DWI Capex of US\$25m
- Increases NPV_g from US\$1.0bn to US\$2.2bn, and IRR from 26% to 40%
- Allows more efficient mining of resource and processing of ores
- Potential to increase reserves and improve mine plan
- Option to develop on-site blending

Morocco

- Adds potash and additional phosphate products to Morocco nutrient portfolio
- Strengthens Morocco's position as agriculture and fertiliser lead in Africa
- Creates potential for IP transfer to other operations in Morocco and beyond
- Leverages Morocco's phosphate resources



CONTACTS

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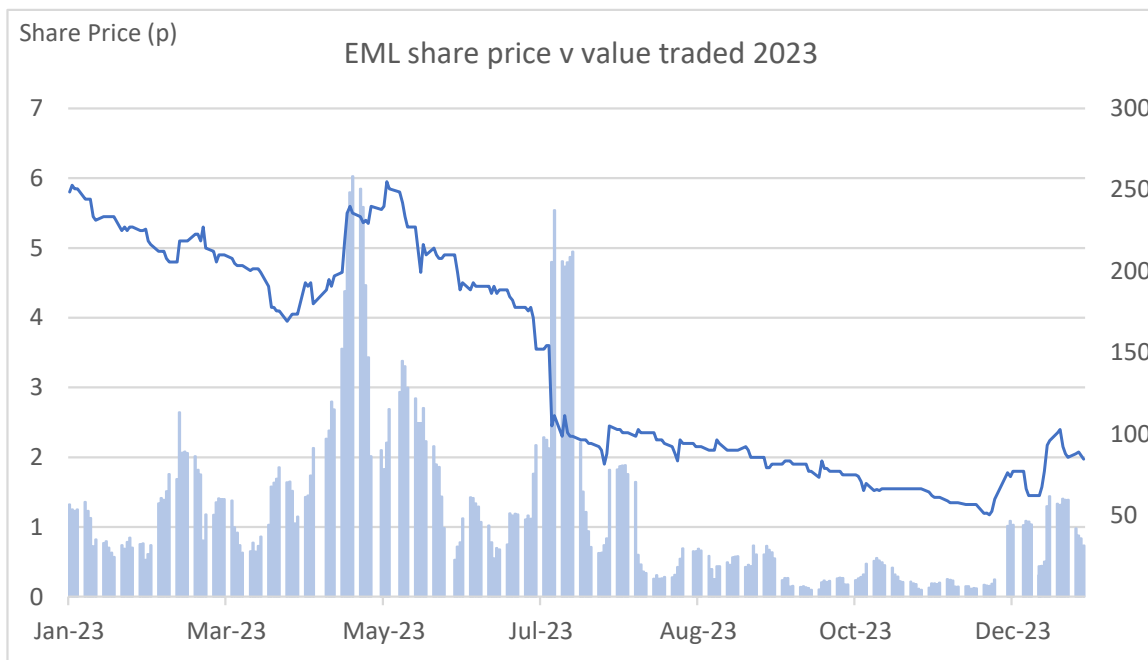
 @emmerson_plc

 Emmerson PLC



APPENDICES

EMMERSON PLC



(Share Graph as of 25 Jan 2024)

LISTING AND TRADING

Share price
(25 Jan 2024) **2.00 GBP**

Market Cap
(25 Jan 2024) **US\$26m**

52 week low/high (£) **1.18/ 5.95**

Shareholder	Number of Ordinary Shares	Percentage of Issued Ordinary Shares
Global Sustainable Minerals	137,770,562	13.4%
Hargreaves Lansdown Nominees Limited Clients	114,894,995	11.2%
Jarvis Investment Management Nominees Limited Clients	98,439,533	9.6%
Interactive Investor Services Nominees Limited Clients	68,496,206	6.7%
Robert Wrixon (Director)	46,233,411	4.5%
Heshin Kim	34,941,511	3.4%
HSDL Nominees Limited Clients	32,406,909	3.2%
AJ Bell Clients	32,141,239	3.1%
Above is the list of key shareholders as at 25 January 2024 which hold more than 3% in the Company		
% of shares not in public hands – 19.1% There are nil shares held in treasury		



BOARD & CFO



Graham Clarke – CEO

Highly experienced potash mining executive. During a career spanning 35+ years, Graham has gained extensive experience managing large multi-disciplinary teams for underground fertiliser mines.



Dr. Robert Wrixon – Executive Director

Founder of Moroccan Salts, Rob has 18 years' commercial experience in mining. He is a Director and founding partner of a natural resource PE group and holds a PhD in mineral engineering from the University of California, Berkeley.



Jim Wynn – CFO

Experienced finance professional and chartered accountant with significant corporate experience, particularly in the resource sector. He has held senior management positions for a number of resource companies.



Hayden Locke – Director

Mining executive with ~15 years' experience in mining, private equity and investment banking.



James Kelly – Non-Executive Chairman

A corporate finance, strategy and capital allocation expert with over 20 years experience in the mining and natural resource industry.



Rupert Joy – Non-Executive Director

In a diplomatic career of more than 25 years, Rupert served at diplomatic missions in Yemen, Saudi Arabia, Iraq, Uzbekistan & Morocco. He has over seven years' experience as a diplomat in Morocco, as Deputy Head of Mission at the British Embassy from 2000-03 and as EU Ambassador & Head of the EU Delegation from 2013-17.



MANAGEMENT TEAM

CREDENTIALS

Charles Vaughan (Head of Investor Relations)

- Charles spend over ten years working in the City with a focus on raising capital for companies developing natural resources projects, mainly from London based institutional investors.
-

Lahcen Alloubane (General Manager)

- A Moroccan national with a Masters of Business Administration and over 10 years' experience in the mining sector including with Moroccan based tin developer Kasbah Resources.
-

Haitam Ennadif (Engineering Manager)

- A Moroccan national and passionate senior metallurgist with 12 years experience within the mining sector in roles including Mineral Processing Project Manager with Managem, Process Plant Project Manager with Fluorspar and Development Manager with SSAB across Morocco and North Africa.
-

Phil Cleggett (Head of Corporate Development)

- A BCom qualified accountant with 12 years' experience in mining and investment banking. Prior to his role at Emmerson PLC, he was Manager of Corporate Development & Strategy at ASX listed potash developer Highfield Resources.
-

Luke Jarvis (Sales & Marketing Manager)

- A market strategy specialist with over 30 years of experience in senior roles leading to bankable off-take agreements, strategic partnerships and structured finance arrangements for new entrants in the resource sector with organisations such as Salt Lake Potash, Helm Chemicals, Nutrien Inc and Sirius Minerals. Also consulted for organisations such as BHP, ICL, Circum Minerals, Peak Minerals and Highfield Resources.
-

Jakub Zmuda (Project Manager)

- Holder of an MEng in Geology awarded from the Academy of Metallurgy and Mining in Krakow, Jakub has 20 years experience within the mining sector in roles from Geologist to Project Manager.
-

Josh Mitchell (Project Control Manager)

- An BA qualified project delivery expert with close to 15 years experience in the development and implementation of project execution strategy on capital projects with values of up to \$4.2B within the mining sector.
-

Matt Wilmot (Technical Services Manager)

- A BEng qualified mining professional with over 20 years of experience within the development and operation of coal & potash mines. A member of the Association of Camborne School of Mines (ACSM) and one of few holders of a Mine Surveyors certificate awarded from the UK HSE Mining Qualifications Board.
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Enrique Sanz (Project Geologist)

- A geologist with 20 years' experience in industrial minerals, primarily evaporite minerals. Formerly project geologist for worldwide exploration with Rio Tinto PLC. Extensive experience in Khemisset Basin and other Triassic – Liassic salt basins of Morocco. Enrique holds a PhD in evaporites.
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