



elemental  
minerals limited

# **The Sintoukola Project**

**December 2014**



# Forward Looking Statement and Disclaimer

## Disclaimer:

This presentation contains statements that are "forward-looking". Generally, the words "expect," "potential", "intend," "estimate," "will" and similar expressions identify forward-looking statements. By their very nature, forward-looking statements are subject to known and unknown risks and uncertainties that may cause our actual results, performance or achievements, to differ materially from those expressed or implied in any of our forward-looking statements, which are not guarantees of future performance. Statements in this presentation regarding the Company's business or proposed business, which are not historical facts, are "forward looking" statements that involve risks and uncertainties, such as resource estimates and statements that describe the Company's future plans, objectives or goals, including words to the effect that the Company or management expects a stated condition or result to occur. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made.

## Competent Person/s Statement:

The Information in this presentation that relates to Exploration Targets, Exploration Results and Mineral Resources is based on information compiled by Mr. Andrew Pedley, Elemental's Chief Geologist and a full-time employee of the Company. Mr. Pedley is a member of the South African Council for Natural Scientific Professions (SACNASP) being a registered Professional Natural Scientist in the field of Geological Science. Mr. Pedley has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person, as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). Mr. Pedley consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

All scientific and technical information ("Information") in this presentation relating Phased Implementation Study for the Kola Deposit is based on information approved by Neal Rigby, CEng MIMMM, PhD (SRK) and Paul O'Hara P.Eng. (AMEC) (minerals processing), who are independent of the Company and have sufficient experience to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code).

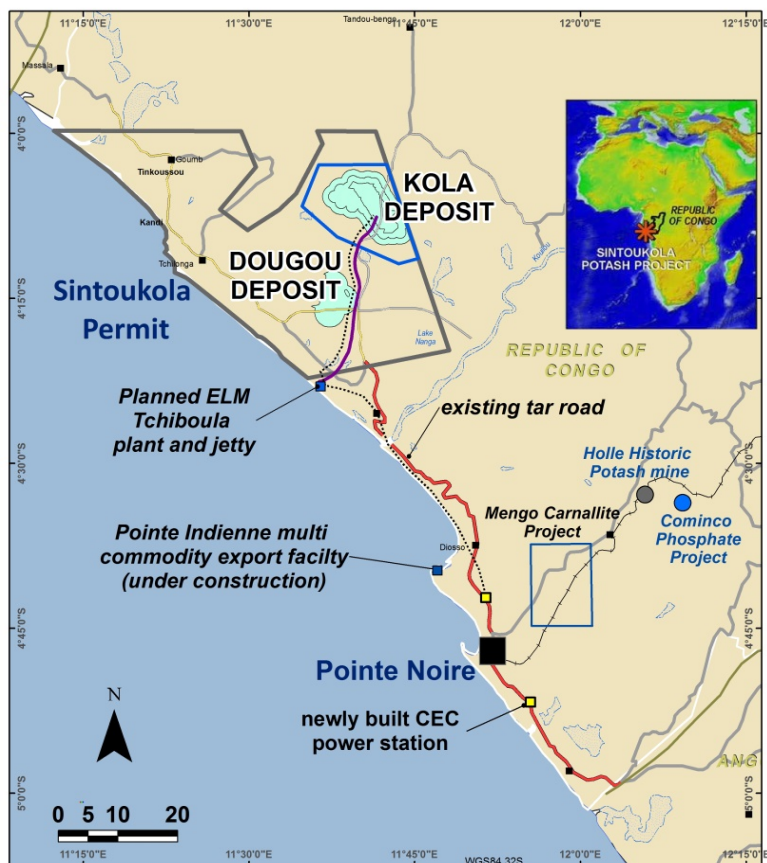
Information that relates to Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves at the Kola deposit was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. This information relating to the Sintoukola Project and Kola deposit was extracted from a Technical Report entitled "NI 43-101 Technical Report, Sintoukola Potash Project, Republic of Congo" dated September 17, 2012 with an effective date of September 17, 2012 (the "Technical Report") which is available on the Company's website ([www.elementalminerals.com](http://www.elementalminerals.com)). The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

*Strategic World Class Potash Project*





# Project - Prime Location



Very close proximity to port facilities, power and gas

## Kola Potash Deposit Credentials

- ✓ **Grade:** > 33% KCl Kola sylvinite
- ✓ **Size:** > 0.5 Billion tonnes Measured and Indicated Mineral Resource
- ✓ **Shallow:** 260 to 300 metres below surface
- ✓ **Ore Quality:** sylvinite, <0.2% insols
- ✓ **Simple Geometry:** flat lying, extensive, thick, uniformity of grade
- ✓ **Close to port:** < 60 to 90 kms for imports, marine shipping facility on site
- ✓ **Infrastructure:** available power, gas, water, and existing tarred road
- ✓ **Permitting:** Mining Permit in place, ESIA approved
- ✓ **Low LOM Opex:** US\$ 91/tonne MoP FOB
- ✓ **Capex: Phase 1** US\$ 908m
- ✓ **Economics:** NPV10 US\$ 1.84 billion and IRR 24% after tax and royalties
- ✓ **Upside:** large Inferred Resource and open, multiple deposits

Excellent Project Credentials

# Project Grade and Size

- Two deposits, both over 1 billion tonnes, both deposits open
- Kola (Sylvinite) Deposit **573 Mt @ 33.13% KCl Measured + Indicated Resource**
- High grade by global standards and highest on the African continent

	MEASURED			INDICATED			INFERRED		
	Mts	%KCl	%K <sub>2</sub> O	Mts	%KCl	%K <sub>2</sub> O	Mts	%KCl	%K <sub>2</sub> O
<b>Kola Sylvinite</b>	264	33.75	21.31	309	32.61	20.59	475	32.48	20.51
<b>Dougou Carnallite</b>	-	-	-	-	-	-	1,285	21.72	13.71

- Kola PFS defined **Proven and Probable Reserves of 152 Mt grading 31.7% KCl** for conventional underground mine

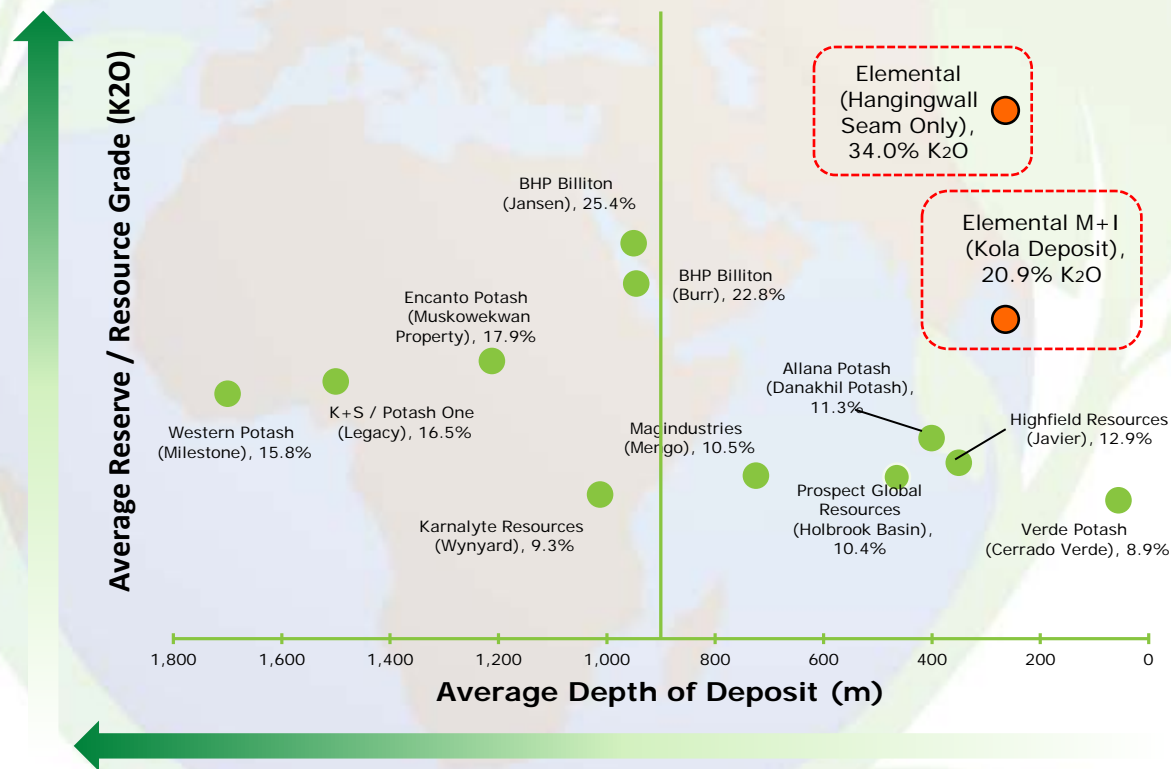
\*1 Announcement 20<sup>th</sup> August 2012

\*2 Announcement 9 July 2014

Two large, excellent grade and scalable Potash Deposits 15 kms apart close to the coast with the potential to share infrastructure

# Kola: A Top Tier Potash Asset

## Potash Assets Ranked by Grade (K<sub>2</sub>O%) and Deposit Depth



A shallow depth of 260-300 m and an average grade of 20.9% (K<sub>2</sub>O) with upside potential from the Hangingwall Seam make Kola the premier potash project

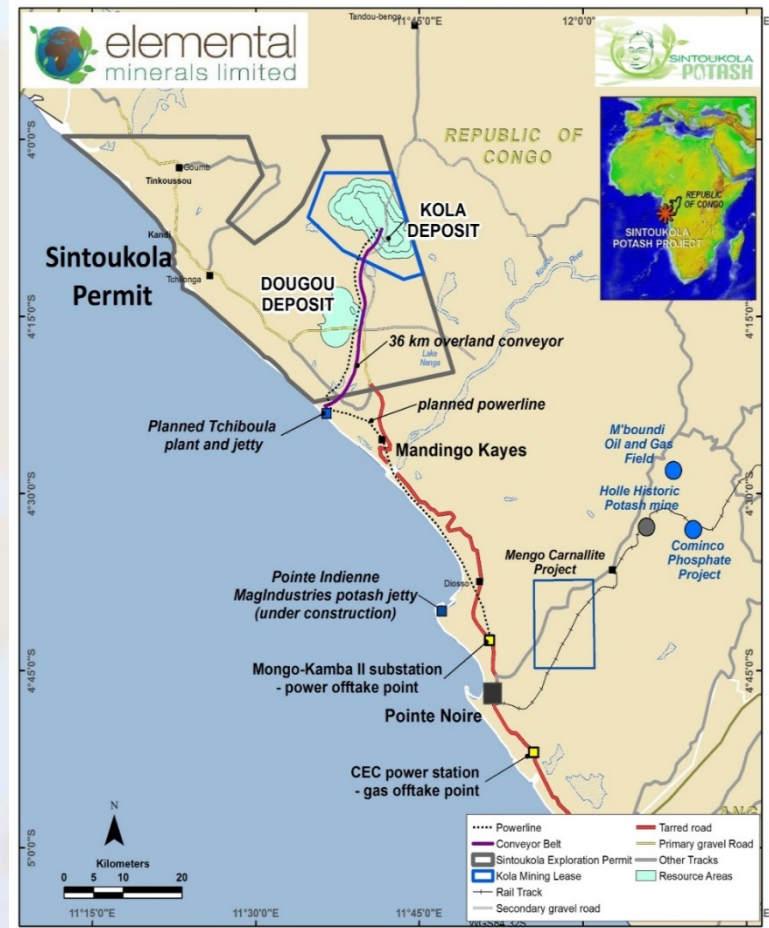
Strategic World Class Potash Project

Source: Company Reports, NI 43-101 Technical Report, Sep. 17, 2012



# Project Infrastructure

- Kola located **36km from the coast** (opex is “on the ship”)
- Located **80km from Pointe Noire** – simple logistics for construction and operations
- **CEC power plant 90km from the project** (300MW capacity – currently 90MW used)
- **Abundant gas** available at the power plant
- Abundant fresh water available in the project area
- **National road:**
  - Passing within 2km of the shaft site
  - “Tarred” to within 15km of the plant
  - Government is currently upgrading this



High grade sylvinite deposit with production and marine facility on the coast

# Independent Project Configuration

## Production

- Conventional Mining: Phased Implementation  
Phase 1: 1.0Mtpy MoP, Phase 2 1.0Mtpy MoP

## Transportation

- 36km Conveyor for run-of-mine ("ROM") ore

## Port

- Jetty facility at Tchiboula adjacent to plant

## Processing Facility at Coast

- Scalable process plant located at the coast
  - test work demonstrates low insolubles and high process recovery
  - brine disposal in the ocean
  - trucked gas for product drying – 2,820scm/h

## Power

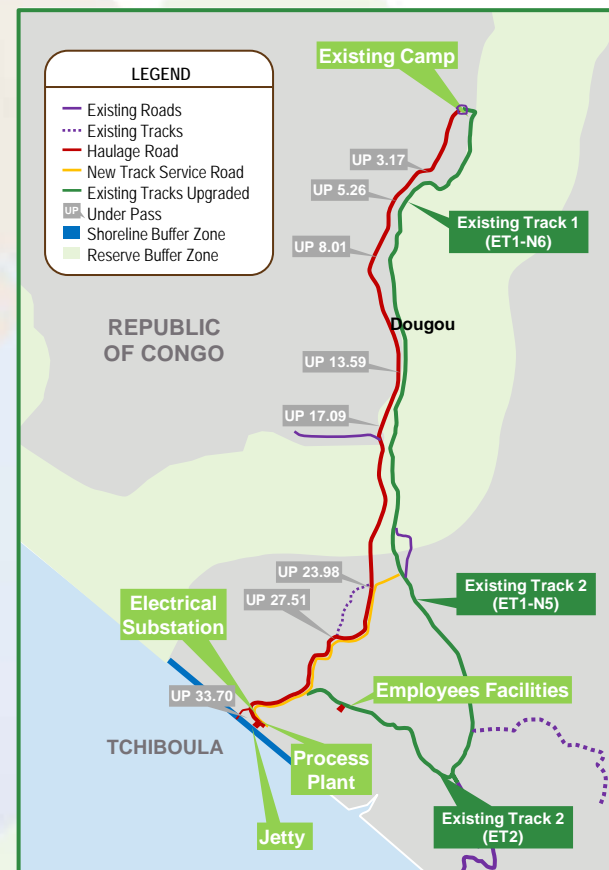
- 42 MW required from national grid

## Water

- Water sourced from ocean and well field

## Labour

- Employment of approximately 950 people



Source: Company Reports

Strategic World Class Potash Project

Source: Announcement dated 23 October 2014



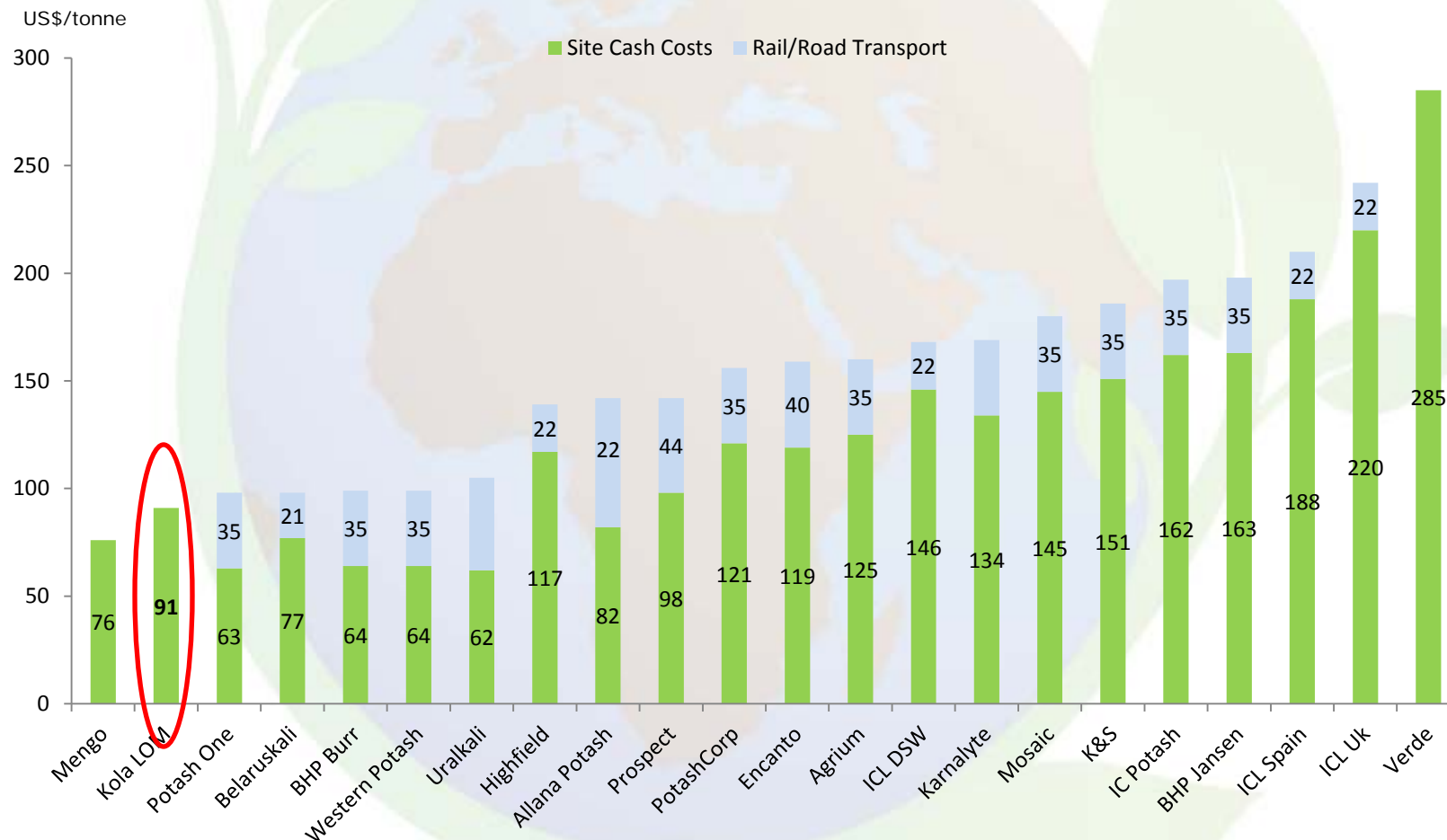
## Kola Project – Phased Implementation Study Results

- Phase 1 project capital expenditure of US\$908 million
- After-tax NPV10% of US\$1,836 million, IRR of 24.0%
- Revised to start production of Phase 1 (1mtpa MoP) in 2018 and ramp up to Phase 2 (2mtpa MoP) by 2022
- Average, after-tax Free Cash Flows of US\$220m/annum during Phase 1 and US\$550m/annum during Phase 2, using latest potash price forecasts
- Received Expressions of Interest from potential partners to build, own, operate and maintain (BOOM) components of the project to reduce LOM capex by \$418 million (included in reduced US\$908m capex)
- Life of Mine average operating costs of US\$91/t
- Long term steady state operating costs of US\$75/t will place Kola as one of the lowest cost producer globally

*Strategic World Class Potash Project*

Source: Announcement dated 23 October 2014

# Opex Benchmarking Kola vs. Peers (estimated FOB cost)



Strategic World Class Potash Project

Source: Coy Reports, Urakali, GMP, Scoping Study

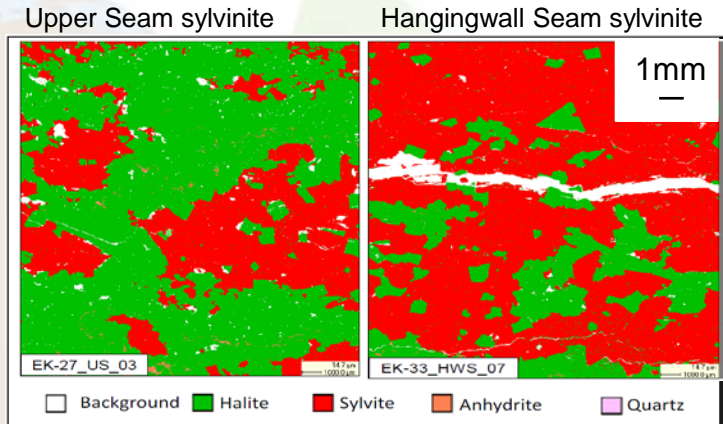
# Kola: Exceptional Ore Quality

## ➤ Insoluble content:

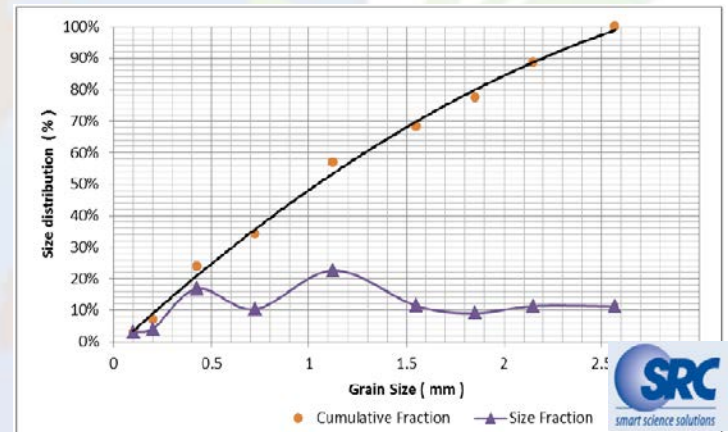
- Contribute to process recovery losses and flowsheet complexity
- >5% typical in Canada and elsewhere
- **Kola and Dougou insols < 0.2%**
- An exceptionally 'clean' ore

## ➤ Metallurgical testwork

- Undertaken by the SRC (Saskatchewan Research Council)
- **Excellent flotation kinetics** of the ore confirmed
- Large liberation size
- Ore is sylvinite only



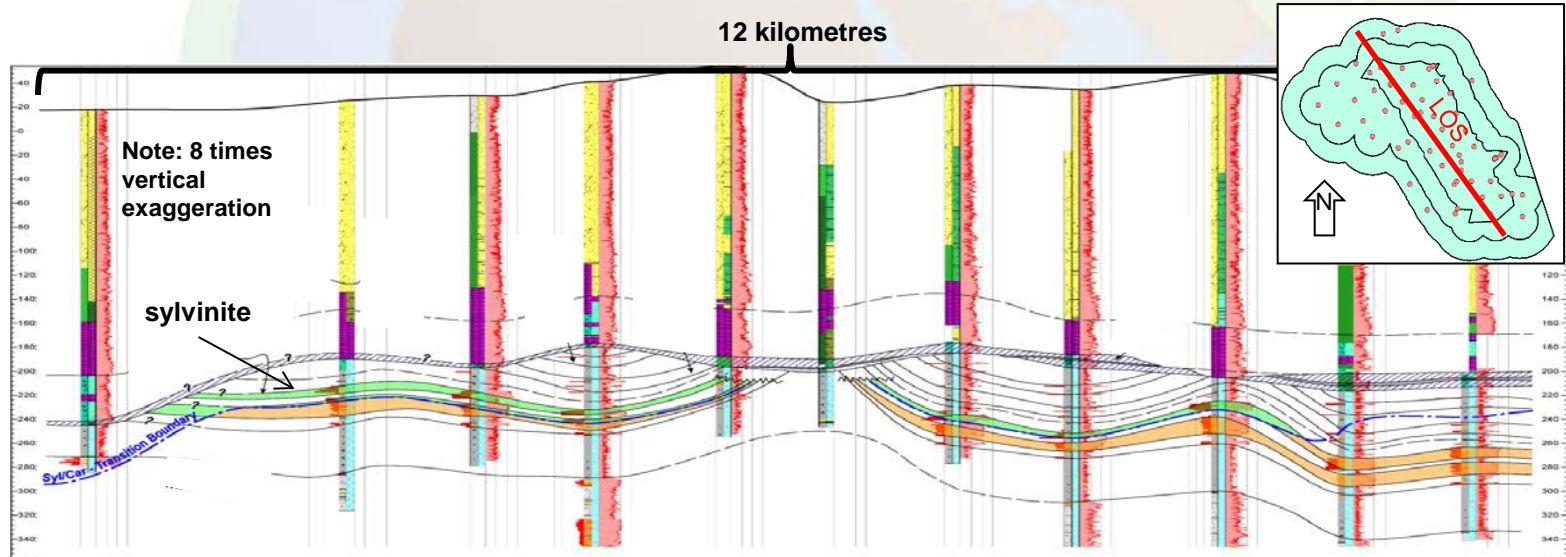
False colour QEM scan



Extremely clean sylvite ore with excellent flotation kinetics

# Kola: Simple Sylvinite Orebody

- Seams are **flat or gentle dip**
- Continuity: **seams can be followed many kilometres** with small thickness variation
- No unstable material such as bischofite or shale/clay above/below the potash seams
- **Uniformity of grade**: sylvinite grade varies by less than 10% across the deposit
- All contribute to **ease of mining** and the **low opex**



Flat lying, continuous sylvinite mineralisation and open in most directions



# Permitting and Fiscal Regime

Source: public domain

## ➤ *Permitting*

- Equator Principles compliant ESIA approved in 2013
- **Mining License awarded for Kola (25 years)**
- Land rezoning completed

## ➤ *Fiscal regime*

- **MagIndustries likely to be first potash producer in Africa**, is under construction: 1.2Mtpa MoP
- Xstrata, Sundance and MagIndustries have all recently signed mining conventions

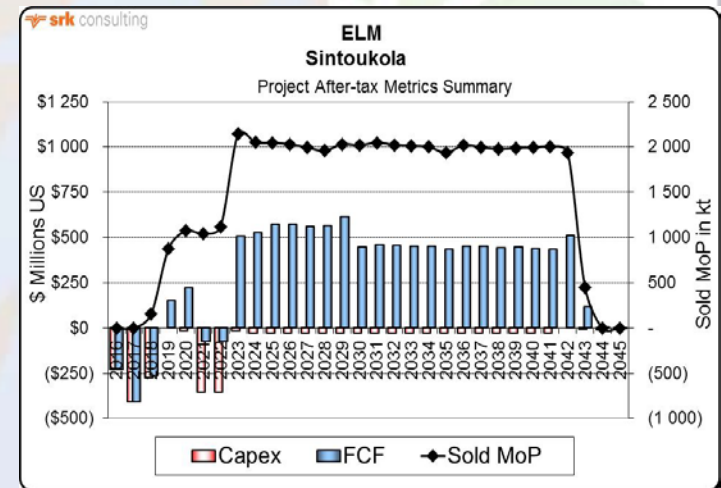
	Sundance	MagIndustries	Zanaga Iron Ore
Date	July 2014	August 2010	August 2014
Mining Convention	25 years + 15 year renewal	25 years	25 years + 15 year renewal
Tax Years 0-5	0%	0%	0%
Tax Years 5-10	7.5%	0% <sup>(1)</sup>	15%
Tax Years 11+	15%	30%	15%
Royalty	3% on ore value	3%	3%
Government Carried Interest	10%	10%	10%
Import Tariffs	Exemptions on capex and consumables	Exempt	Exempt



Mining license awarded with a favourable fiscal regime

# Kola: Project Economics

- *PFS completed in September 2012:*
  - Reputable consultants: **SRK (Denver), Egis, AMEC, AAE**
  - Cost estimates **based on site specific data**, not assumptions: geotech and hydrogeo surveys (mine and the surface infrastructure), metocean studies, etc.
- *Phased Implementation Study (announced 23 October 2014)\**
  - **NPV10% = \$1,836m, IRR = 24%,**
  - LOM 25 years
  - **Phase 1 capex of \$908m for 1 Mtpa MoP**
  - Phase 2 capex of \$683m (**can be financed with FCF from Phase 1**) for 2 Mtpa MoP
  - LOM opex of \$91/t, with a long term **steady state opex of \$75/t MoP “on the ship”**

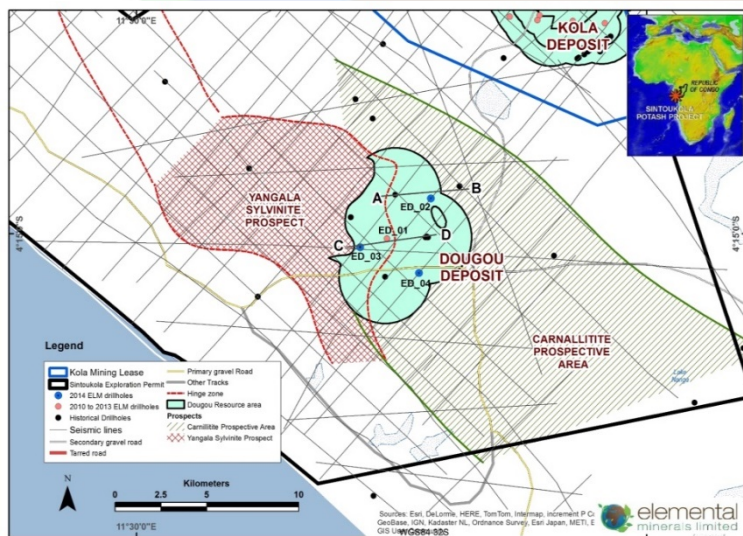


Phased Implementation study provides opportunity to significantly reduce initial capital requirement

\* Source: Announcement dated 23 October 2014

# Dougou Deposit

- High grade carnallite, **higher grade than some sylvinite deposits...** Reflects the purity of the Hangingwall Seam Carnallite (>90% carnallite)
- **Inferred Resource of 1.29 billion tonnes grading 21.72 % KCl**, including 520 Mt grading 24.58 % KCl within the Hangingwall Seam \*1
- Resource Update and **Scoping Study underway by Ercosplan** \*2



Dougou Carnallite Deposit – Potentially ideal for solution mining

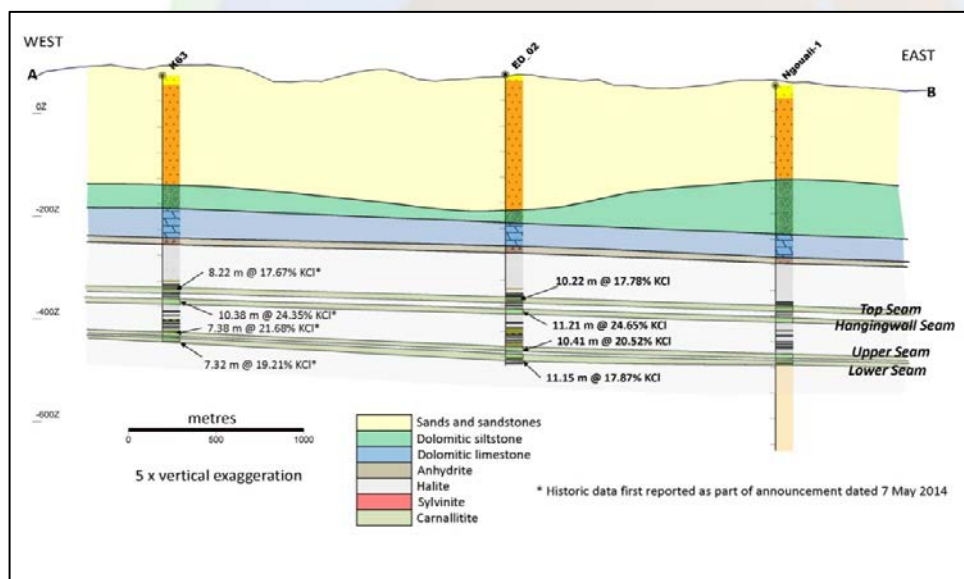
\*1 Announcement 9<sup>th</sup> July 2014

\*2 Announcement 10<sup>th</sup> November 2014



# Dougou Deposit

- Combined thickness of **30 to 45 metres of carnallite**, hosted by 4 seams
- Deposit open and **potential to expand significantly**
- **Flat, continuity, consistent grade and thickness, insols <0.2%**
- No unstable material such as bischofite or shale/clay in HW or FW..

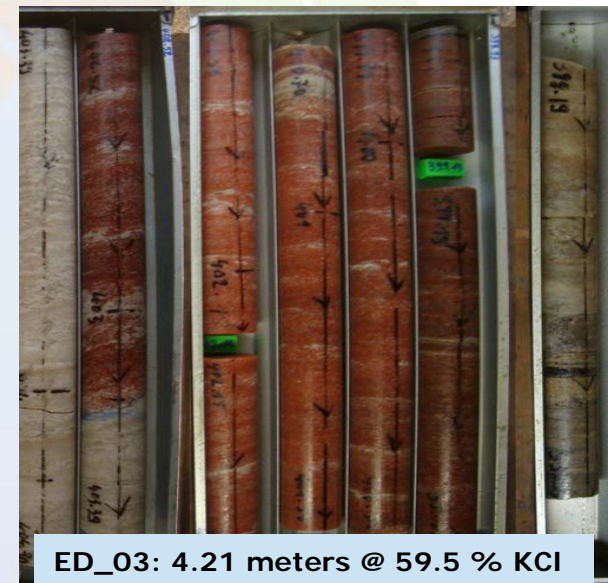
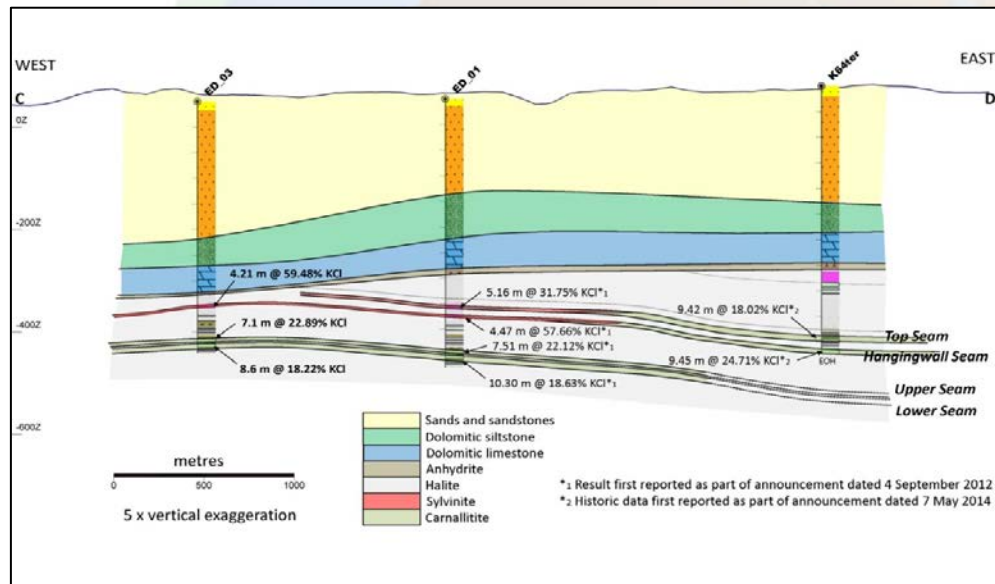


Dougou High-Grade-Carnallite deposit open in most directions



# Yangala Sylvinite Prospect

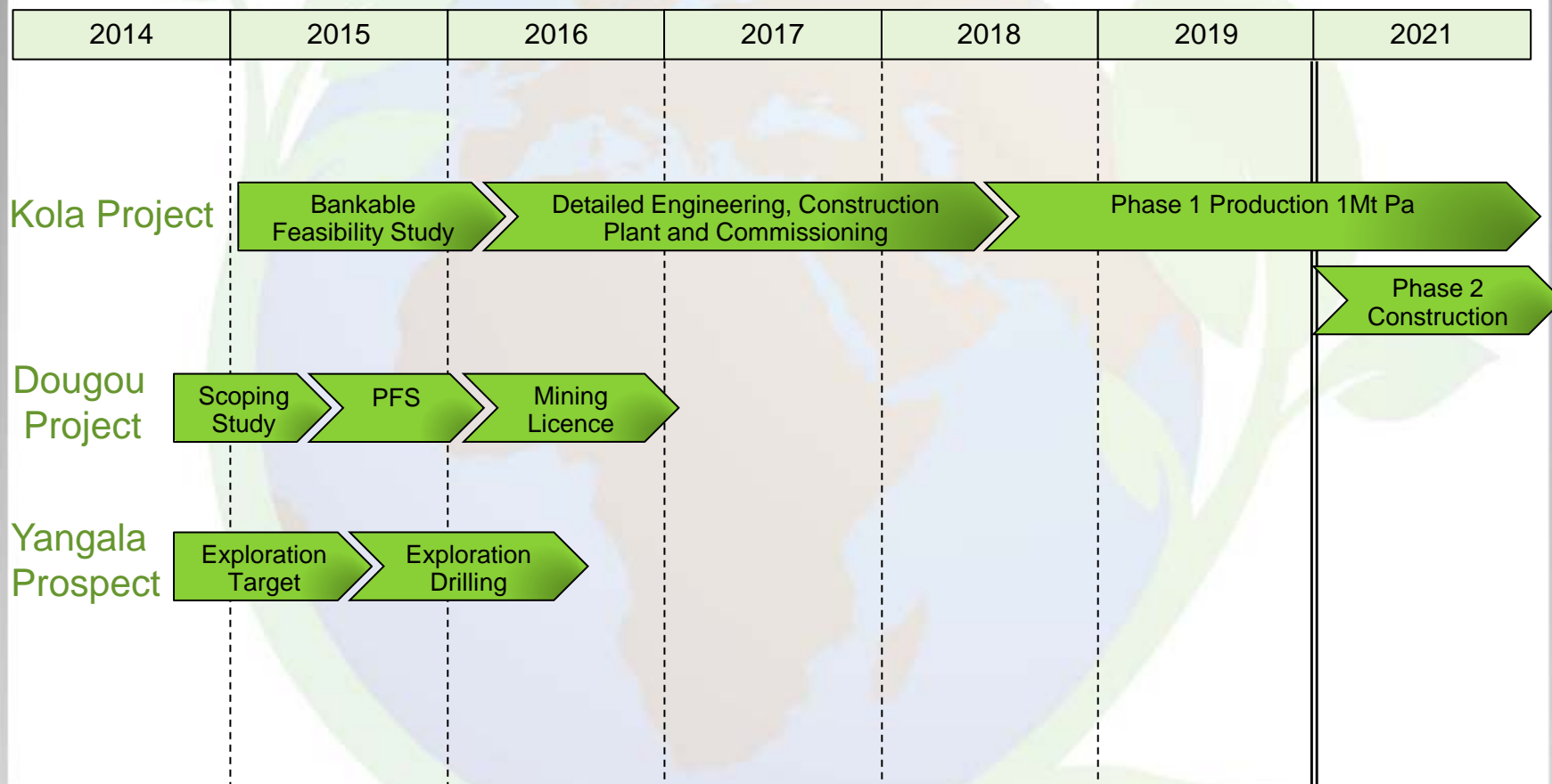
- **Only two boreholes drilled** into this area, 1.4 kms apart, both intersected Hangingwall Seam Sylvinite **over 4 metres thick and grading 57-60% KCl\*<sub>1</sub>**
- Exceptional grade reflects purity (90%) of precursor carnallitite
- Prospect 12 x 7 kms. **Exploration Target being prepared.**



A candidate for the highest grade sylvinite seam globally

\*<sub>1</sub> Announcement 9 September 2012  
and 20<sup>th</sup> October 2014

# Forward Programme



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## Summary

### Kola Deposit:

- Size & Grade, Ore Quality, Simple Deposit
- Location, Available Infrastructure
- Permitting, Fiscal Regime
- Economics, capex, opex



### Dougou and Yangala:

- Dougou: the perfect solution mining opportunity? >billion tonnes high-grade-carnallite and open.
- Yangala: HWSS >4 m thick and 57-60% KCl...a league of its own

### Next Milestones:

- Scoping Study and Resource Update for Dougou
- Kola DFS
- Exploration Target for Yangala

# Appendix 1





# Executive

## Tom Borman

*Chairman*

- 20 years experience in the mining and minerals industry. 11 years with the BHP Billiton Group (“BHP”) in various senior managerial roles, Project manager for the integration of the BHP and Billiton merger with extensive global business experience.
- Established and consolidated the Optimum group of companies, that was acquired by a Glencore. Is a Non-Executive Director for Alphamin Resources Corp, Metmar, a director of Beacon Rock Corporate Services and Univeg group of companies.

## John Sanders

*Managing Director*

- 32 years experience in mining and exploration in Africa. Served as General Manager of Elemental Minerals 2009 to 2012, currently MD and CEO July 2014 to Present
- Previously VP Exploration for UraMin Inc. and CEO of Niger Uranium, Regional east and west Africa Exploration Manager AngloGold Ashanti

## Michael Golding

*Non-exec Director*

- A Chartered Accountant with over 20 years experience in corporate and project finance and private equity, and has held senior positions in Billiton Plc, HSBC, Actis Plc and Imara Holdings Ltd. Runs a project finance advisory firm, where he provides advisory services to companies active in the mining, oil and gas sectors in Sub-Saharan Africa.

## Sam Middlemas

*Non-exec Director*

- Chartered Accountant with over 20 years mining experience, extensive corporate and management expertise

## Leonard math

*Non-exec Director*

- Chartered Accountant with over 10 years experience in mining, Manager Corporate Services with GDA Corporate, previously with Deloitte, currently also Company Secretary for Elemental Minerals

## Julien Babey

*MD, Sintoukola  
Potash SA*

- Experienced General Manager in energy and mining industry
- Former CEO of AREVA Mongolia

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# Kola Deposit – Check List

Grade	33.1 % KCl (20.9 % K <sub>2</sub> O) Kola deposit (M+I)
Tonnage	Kola Deposit: 573 Mt Measured + Indicated 474 Mt Inferred <b>151Mt Proven and Probable Reserve and a 25 year LOM</b>
Ore Quality	Low insoluble Content (<0.2%) Simple mineralogy = clean sylvinite, excellent flotation kinetics
Simple orebody	Depth = 200-300 m <b>Continuity, sub-horizontal, ~4 m thick seams, no bischoffite or other difficult lithologies</b>
Location and Logistics	Located 90km from Pointe Noire; 36km from the coast
Infrastructure	<b>Surplus electricity (CEC powerstation) located 70km from the process plant</b> Abundant gas available 90km from the project site <b>National road within 2km of the shaft site; tarred to within 15km</b> Abundant fresh water available in the immediate area
Permitting	Equator principles compliant ESIA approved in 2013 <b>25 year mining license awarded</b>
Fiscal regime	ROC government is now awarding 10 year tax holidays rather than 7 years
Advanced project	Kola PFS completed September 2012 (SRK, AMEC, Egis, AAE)
Lowest quartile opex	91 \$/t MoP on the ship (LOM opex) <b>75 \$/t MoP on the ship (steady state costs)</b>
Low capex	Initial Capex (for 1Mtpa MoP) of \$908m
Excellent economics	<b>NPV10% = \$1,836m; IRR = 24.0%; using latest Fertecon price forecast</b> Dougou Deposit = Inferred Resource of 1.29 billion tonnes @ 21.72% KCl
Upside	<b>Yangala Sylvinite Prospect = HWSS grading 58-60% KCl and &gt; 4 metres thick</b> Scalable infrastructure designed to ramp up production

High grade deposit with excellent ore quality and flotation kinetics

# Financial Overview

## Capitalisation Summary

Exchange Listing: ASX		A\$
Share Price	(A\$/share)	0.22
52 Week High / Low	(A\$/share)	0.48 / 0.14
Shares Outstanding	(m)	381
Options (unlisted)	(m)	19.7
Options (listed)	(m)	78.9
Market Capitalisation-undiluted	(A\$m)	84.0
Cash & Equivalents (Sep '14)	(A\$m)	~9.0

## Major Shareholders

Name	Holding
Harlequin Investments	19.17%
EMC	9.57%
Dingyi Investments	9.53%
Genesis Management	5.69%
Top 20	67.20%

## Recent Share Price



Strategic World Class Potash Project

Source: Cap IQ, \*Founder Shareholders

