

Gemfields plc

("Gemfields" or "the Company")

Kagem Emerald Mine JORC Resource & Reserves Update

23 September 2015

Gemfields plc (AIM: GEM), the world's single largest coloured gemstones mining and marketing company, is pleased to announce the publication of a Competent Persons Report ("CPR") produced by SRK Consulting (UK) Limited ("SRK") on the Kagem Emerald Mine ("Kagem" or the "Mine") in Zambia, which is 75% owned by Gemfields and 25% by the Government of Zambia. The CPR includes Mineral Resource and Ore Reserve estimates and accompanying statements prepared in accordance with JORC Code (2012) based on an extended life of mine ("LoM") plan prepared by Gemfields and SRK.

Highlights

Measured, Indicated and Inferred Mineral Resource of 1.8 billion carats ("bct") of emerald and beryl at an in-situ grade of 281 carats per tonne ("ct/t")

- JORC Code compliant Measured Mineral Resource of 800,000 tonnes or 290 million carats ("mct") at a grade of 345 ct/t;
- JORC Code compliant Indicated Mineral Resource of 4.0 million tonnes ("mt") or 1.33 bct at a grade of 335 ct/t; and
- JORC code compliant Inferred Mineral Resource of 1.7 mt or 181 mct at a grade of 110 ct/t.

Proven and Probable Ore Reserves of 1.1 bct of emerald and beryl at a diluted ore grade of 291 ct/t

- JORC Code compliant Proven Ore Reserve of 920,000 tonnes or 276 mct at a grade of 300 ct/t; and
- JORC code compliant Probable Ore Reserve of 2.9 mt or 840 mct at a grade of 288 ct/t.

Independent Technical Economic Model

- Projected 25 year LoM open pit operation producing a total of 1.1 bct;
- Projected to increase processing capacity from the current 90,000 tonnes per annum ("t/a") to 180,000 t/a by July 2018 with the inclusion of the Fibolele pit;
- Average annual production of emeralds and beryl of 44.7 mct over the LoM;
- Projected real cash flow (no discount rate applied) over the LoM of approximately USD1.59 billion;
- Robust economics show a post-tax Net Present Value ("NPV") of USD520 million (based on 10% base case discount rate); and
- Capital expenditure of USD84 million over the first four years and a total of USD516 million over LoM of which USD310 million relates to capitalised waste stripping costs.

Extensive Exploration Potential

- Exploration to date has focussed on and around known ore bodies and their extensions within the licence area. A substantial exploration programme using proven techniques is planned for the next few years to explore the rest of the Kagem licence area to further determine the remaining resource potential.

Ian Harebottle, CEO of Gemfields, commented:

"Today's updated resource statement highlights the long term opportunity that exists at our Kagem Emerald Mine in Zambia. As the first recorded Measured Mineral Resource and Proven Ore Reserve Statement for Kagem, and possibly the first of its kind across the entire global coloured gemstone sector, the significance of this report is not only a milestone event that bears testament to the quantity

and quality of work carried out by SRK and the Gemfields team at Kagem, but also provides further evidence to the continued growth potential, positive momentum and considerable opportunity inherent within the open pit mine plan. This, together with various other expansion opportunities that are already at hand, the impact that our continued global marketing and promotional initiatives are expected to generate, provide me with high level of confidence in Gemfields' ability to deliver against the considerable targets we have set ourselves. As I have said on many occasions over the past few years, this operation has a bright future, is still maturing as an established producer, with much more yet to come. I would also like to thank the Zambian government, our partners in Kagem, for their continued commitment and support to this exciting project."

Qualified Person

The Competent Person with overall responsibility for the reporting of Mineral Resource is Dr Lucy Roberts, MAusIMM, PhD (Geology), a Principal Consultant (Resource Geology) with SRK. Dr Roberts has the relevant experience in reporting Mineral Resources on various coloured gemstone projects.

The Competent Person with overall responsibility for reporting of Mineral Reserves is Mr Mike Beare CEng BEng ACSM MIMMM, a Corporate Consultant (Mining Engineering) with SRK. Mr Beare has 23 years' experience in the mining industry and has been extensively involved in the reporting of Mineral Reserves on various coloured gemstone projects during his career to date.

The information contained in this announcement has been reviewed by Dr Roberts and Mr Beare.

The full SRK CPR is available for download from the Company's website: www.gemfields.co.uk, which also includes the JORC Table 1, as required for full, transparent, disclosure under the JORC Code (2012).

ENQUIRIES:

Gemfields
Janet Boyce, CFO

janet.boyce@gemfields.co.uk
+44 (0)20 7518 7283

Grant Thornton UK LLP
Nominated Adviser
Philip Secrett/Richard Tonthat/Jamie Barklem

+44 (0)20 7383 5100

JP Morgan Cazenove
Joint Broker
Jamie Riddell

+44 (0)20 7742 4000

BMO Capital Markets Limited
Joint Broker
Jeff Couch/Neil Haycock/Tom Rider/Jenny Wyllie

+44 (0)20 7236 1010

Macquarie Capital (Europe) Limited
Joint Broker
Raj Khatri/Ken Fleming/Nick Stamp/Fergus Marcroft

+44 (0)20 3037 2000

Tavistock
Jos Simson/Emily Fenton/Barney Hayward

+44 (0)20 7920 3150

Notes to Editors:

Gemfields plc is the world's leading supplier of responsibly sourced coloured gemstones and is listed on the AIM market of the London Stock Exchange (ticker: GEM) where it is a constituent of the AIM50 index.

Gemfields is the 75% owner and operator of the Kagem emerald mine in Zambia, the world's single largest producing emerald mine. In July 2009, Gemfields commenced a formal auction programme for Zambian emeralds mined at the Kagem emerald mine. To date, the Company has held 19 auctions of rough emerald and beryl produced at Kagem and which have generated revenues totalling USD360 million. The Company has also held three traded rough emerald auctions (of gemstones not obtained directly from the Company's own mining operations) which generated revenues of USD23.6 million.

Gemfields owns a 75% stake in the highly prospective Montepuez ruby deposit in Mozambique. The four rough ruby and corundum auctions held since June 2014 have generated USD122 million in aggregate revenues.

Gemfields holds a 50% interest in the Kariba amethyst mine in Zambia. In September 2015, Gemfields held its third auction of rough amethyst extracted from Kariba amethyst mine, generating revenues of USD0.44 million. The Company also has controlling interests in prospecting licenses in Colombia, Sri Lanka, Ethiopia and Madagascar.

Gemfields also owns 100% of Fabergé brand. Fabergé provides Gemfields with direct control over a high-end luxury goods platform and a global brand with exceptional heritage.

JORC Mineral Resource & Ore Reserves Update

Geology

Emerald mineralisation in the Kafubu area, including the Kagem deposits, belongs to a group referred to as 'schist-hosted emeralds', in which emeralds occur predominantly in phlogopite or other types of schists. The origin of schist-hosted emerald deposits is controversial, but is known to require specific geological conditions in which beryllium bearing fluids interact with chromium bearing host rocks. At Kagem, emerald mineralisation is hosted by an ultramafic talc-magnetite schist ("TMS") unit, which has an elevated average chromium content of approximately 2,120 parts per million. Three main styles of mineralisation are recognised within the TMS unit:

- discordant reaction zone material adjacent to the pegmatite and quartz-tourmaline vein contacts;
- concordant reaction zone material concentrated along the footwall and occasionally the hangingwall contacts of the TMS unit; and
- discordant reaction zones hosted by brittle structures within the TMS unit distal to the pegmatite and quartz-tourmaline veins.

Mineral Resources

The Mineral Resource Statement for Kagem as at 31 May 2015 is given in Table 1 and is based on detailed geological modelling of the mineralisation types, and the application of factors derived from the on-going mining and bulk sampling. SRK considers that the Mineral Resource Statement as presented is reported in accordance with the JORC Code (2012). The Mine is 75% owned by Gemfields. The Mineral Resource Statement in Table 1 and Ore Reserves Statement in Table 2 are quoted on a 100% attributable basis Mineral Resources are stated inclusive of Ore Reserves.

Table 1: Mineral Resource Statement for the Kagem Mine

Deposit	Classification	Tonnage	Grade	Contained Carats
		(tonnes, 000)	(ct/t)	(ct, 000)
Chama	Measured Mineral Resources	800	345	290,000
	Indicated Mineral Resources	3,800	345	1,310,000
	Inferred Mineral Resources	-	-	-
	Measured + Indicated	4,600	345	1,600,000
	Sub-total	4,600	345	1,600,000
Fibolele	Measured Mineral Resources	-	-	-
	Indicated Mineral Resources	170	119	20,300
	Inferred Mineral Resources	1,450	119	172,100
	Measured + Indicated	170	119	20,300
	Sub-total	1,620	119	192,400
Libwente	Measured Mineral Resources	-	-	-
	Indicated Mineral Resources	-	-	-
	Inferred Mineral Resources	200	46	9,100
	Measured + Indicated	-	-	-
	Sub-total	200	46	9,100
Total	Measured Mineral Resources	800	345	290,000
	Indicated Mineral Resources	3,970	335	1,330,300
	Inferred Mineral Resources	1,650	110	181,200
	Measured + Indicated	4,770	340	1,620,300
	Sub-total	6,420	281	1,801,500

Grade estimates for each of the mineralisation types were based on factoring of the production data, as recorded and supplied by Kagem. The factors were applied to reflect the dilution which is present in the production grade. An average density value for each ore type was determined from in-situ test work and applied to the block model for tonnage estimation.

Ore Reserves

SRK has estimated Ore Reserves in accordance with the JORC Code (2012). These are presented in Table 2. As at 30 June 2015, SRK notes that Kagem has Proven and Probable Ore Reserves of 3.8 million tonnes of primary ore grading at 291 ct/t.

Table 2: Ore Reserve Statement for the Kagem Mine

Classification	Mineralisation Type	Tonnage (dry tonnes, 000)	Grade (ct/t)	Contained Carats (ct, 000)
Proved				
Chama	Reaction Zone	920	300	276,018
Fibolele	Reaction Zone	0	0	0
Total Proved	Reaction Zone	920	300	276,018
Probable				
Chama	Reaction Zone	2,739	300	821,808
Fibolele	Reaction Zone	177	103	18,312
Total Probable	Reaction Zone	2,916	288	840,121
Proved & Probable				
Chama	Reaction Zone	3,659	300	1,097,826
Fibolele	Reaction Zone	177	103	18,312
Total Proved & Probable	Reaction Zone	3,836	291	1,116,138

Expansion

The Kagem LoM plan sees operations progress from the current 90,000 t/a processing to 180,000 t/a by July 2018 comprising 150,000 t/a from Chama pit and 30,000 t/a from Fibolele pit. With the depletion of Fibolele pit in 2021 the annual processing rate will correspond to the 150,000 t/a production from Chama pit. It is noted however, that current on-going exploration and bulk sampling is expected to find additional sources of feed from material for the plant to replace Fibolele. These additional sources comprise material which is currently classified as inferred and that from exploration targets on the licence.

Economic Analysis

For the economic analysis, SRK has constructed an independent Technical Economic Model (“TEM”), described below. SRK has considered a base case scenario initially targeting 120,000 t/a building up to 150,000 t/a in 2018 from Chama pit as well as initially targeting production of 30,000 t/a from the Fibolele pit. The life of the Chama pit is currently 25 years and Fibolele is seven years depleting in 2039 and 2021 respectively. The TEM reflects production, capital and operating expenditures and revenues from the 1 July 2015 through to 2040 on an annual basis. Total ore processed over the LoM amounts to 3.7 mt at an average grade of 300 ct/t from Chama pit and 0.2 mt at an average grade of 103 ct/t from Fibolele pit. The TEM is based on the production schedule derived by SRK with adjustments based on SRK’s views on the forecast capital and operating costs. In addition, the TEM:

- is expressed in real terms; which means un-inflated USD with no allowances for inflation or escalation on capital or operating costs, inputs or revenues;
- is presented at July 2015 money terms for NPV calculation purposes;
- applies a Base Case discount rate of 10%;
- is based on commodity prices as provided by Gemfields;
- is expressed in post-tax and pre-financing terms and assumes 100% equity;
- uses a base corporate tax rate of 30% with an additional variable component included when profit margins exceed 8%; and
- includes the payment of royalties at a rate of 9% of revenue.

In respect of the commodity prices used, SRK has not undertaken a detailed price analysis, but has relied on forecasts provided by the Company in this regard.

Production

The LoM plan assumes that overall ore mined from all sources will be 3.836 mt over the LoM, which is based on the Proven and Probable Ore Reserves. The mine plan expects to produce 1.116 bct.

Table 3: Production summary

	Units	2015-16	2016-17	2017-18	2018-19	2019-20	2020-2042	TOTAL
Total Waste	(kt)	14,818	14,962	15,135	13,398	10,292	216,647	285,253
Total Ore	(kt)	131	162	168	181	181	3,013	3,836
Total Material Moved	(kt)	14,949	15,124	15,304	13,579	10,474	219,660	289,089
Processing								
Total Ore Treated	(kt)	131	162	168	181	181	3,013	3,836
Total Carats	(kct)	37,050	42,629	44,664	48,468	48,457	894,870	1,116,138

Revenue & operating costs

Based on the TEM, Kagem is expected to generate USD4.322 billion in gross revenue and total operating costs of USD1.017 billion.

Revenues are based on three auctions per annum, comprise two higher quality and one lower quality. It is estimated that 5% of total production represents higher quality emeralds. The model assumes an average sales price of USD61.50 /ct for higher quality emeralds and USD0.88 /ct for lower quality emeralds and beryl.

Table 4: EBITDA (USD millions)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-2042	TOTAL
Gross revenue	102.3	120.1	132.4	151.5	159.0	3,656.3	4,321.6
Mining and production costs	(25.6)	(23.8)	(20.5)	(19.8)	(18.4)	(327.2)	(435.2)
Administrative expenses	(4.6)	(4.7)	(4.7)	(4.7)	(4.7)	(93.4)	(116.7)
Auction expenses	(1.8)	(2.1)	(2.3)	(2.7)	(2.8)	(64.0)	(75.6)
Mineral royalties and production taxes	(9.2)	(10.8)	(11.9)	(13.6)	(14.3)	(329.1)	(388.9)
Total operating cost	(41.3)	(41.3)	(39.4)	(40.7)	(40.2)	(813.6)	(1,016.5)
Total operating profit (EBITDA)	61.0	78.8	93.0	110.7	118.8	2,842.7	3,305.1

Capital expenditure

Total capital expenditure is estimated to be USD516 million over the LoM. Capital for engineering and mining has been estimated at USD441 million, including USD310 million of capitalised waste stripping costs. Sustaining capital for the ongoing operations is estimated at USD55 million. Closure costs are estimated at USD20 million.

Table 5: Summary of Capital expenditure (USD millions)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-2042	TOTAL
Engineering & mining	0.5	0.9	1.3	8.2	6.5	113.2	130.6
Capitalised Stripping	11.7	14.9	19.9	15.5	7.6	240.5	310.0
Sustaining and exploration capital	3.0	2.8	2.5	2.4	2.3	42.1	55.2
Closure costs	0.0	0.0	0.0	0.0	0.0	20.0	20.0
Total	15.2	18.6	23.7	26.1	16.4	415.8	515.8

Economic Model

Net present value cash flows are shown in Table 6 using discount rates from zero to fifteen percent in a post-tax context. SRK notes that at a 10% discount rate the post-tax NPV is USD520 million. As there are no initial negative cash flows, an IRR cannot be determined.

Table 6: NPV Profile

	Discount Rate	NPV USD million
Net Present Value	0.0%	1,586
	5.0%	852
	8.0%	625
	10.0%	520
	12.0%	440
	15.0%	353
Internal Rate of Return	N/A	

Kagem's NPV is most sensitive to revenue (grade or commodity price) but has a lower sensitivity to operating costs and capital. Overall the economics of Kagem are considered to be robust.

Further Information:

Kagem Emerald Mine

Kagem is situated in the Ndola Rural District, Copperbelt Province, Zambia, approximately 260 km north of Lusaka, the capital city of Zambia. Located at latitude 13°04'S and longitude 28°08'E at an elevation of 1,200 m above mean sea level, the site is some 31 km south-southwest of the Copperbelt town of Kitwe. The site is accessed along a tarmac highway with a short gravel stretch leading to the mine.

Kagem holds a 10 year renewable mining and exploration licence over the area, granted by the Government of Zambia in April 2010.

Mining and Production

Kagem is a conventional open pit operation. Waste mining in the Chama pit comprises conventional open pit drill-blast-load-haul methods. Waste rock is dumped at either ex-pit or in-pit locations depending on material type and haul distance. The steeply dipping reaction zones are mined using manual methods using picks and shovels with the assistance of hydraulic excavators under close supervision and only under daylight hours. All large and high grade coloured gemstones are hand sorted at the mining face and are placed in a drop safe type container that is numbered, tagged and closed with security controlled locks. The remaining reaction zone material is loaded into trucks and transported directly to the processing facility.

The open-pit is currently 110 m deep, with ore haul roads placed in the footwall of the TMS, given the relatively shallow dip of 14°. Waste haul roads are located on the hanging wall side of the pit. The upper 15 m to 20 m of overburden is free-digging whilst all other waste, including internal TMS waste, is drilled and blasted.

It is noted that several years ago Kagem considered the transition from open pit to an underground operation in order to reduce the costs associated with waste stripping. This transition has been deferred because trial underground mining was shown to have a lower recovery of gemstones than the open pit approach, which removes all of the rock overlying the reaction zones, and a higher degree of risk given the prevailing hard rock conditions.

Auction Results

Gemfields has held 11 auctions of higher grade and eight auctions of lower grade rough emeralds and beryl produced at its Kagem operations to date. The 19 auctions saw a total of approximately 84.4 mct sold, generating total auction revenues of USD 360 million. With the highest average per carat price of USD 65.9/ct being achieved at its November 2014 auction.

Forecast future prices

At Kagem the historical time weighted average (simple month) price received for rough emeralds and beryl for the financial periods for the years 2005, 2006, 2007 and 2008 increased from USD 0.56/ct to USD 1.22/ct. The price received has further increased more than USD 3/ct in recent times. Gemfields expects growth in emerald prices to remain steady and increase at the rate of 5-10% per annum in the next five years, supported by assured sustainable supply and the company's marketing efforts.

Environmental and Social

Kagem is situated in an area with an established history of formal mining. The Mine has all the key permits in place for operations and is in compliance with Zambian regulations. The Mine has made significant contributions to local social and environmental initiatives in terms of health and safety infrastructure.

ENDS