

# **Endeavour Mining**

# Pumping it

For the second time in less than a month, Endeavour has announced the delineation of a c 1Moz maiden resource – in this case, at Kari Pump, 7km west of the Houndé processing plant in Burkina Faso. As at Fetekro, the majority (98.0%) of the resource has been classified into the indicated category of resources. More significantly, the average grade of the maiden Kari Pump resource is at a 31.8% premium to the average of the pre-existing Houndé resource and a 44.3% premium to the average of the pre-existing Endeavour resource, with further potential upside in the region.

Year end	Revenue (US\$m)	EBITDA (US\$m)	PBT* (US\$m)	Operating cash flow per share (US\$)	Capex (US\$m)	Net debt** (US\$m)
12/16	566.5	213.9	103.4	1.91	212.3	21.4
12/17	652.1	201.2	51.6	2.25	441.4	216.8
12/18e	720.5	261.0	74.8	1.53	456.5	475.4
12/19e	762.1	372.1	153.3	2.77	81.4	305.9

Note: \*PBT is normalised, excluding amortisation of acquired intangibles, discontinued operations and exceptional items; \*\*includes restricted cash.

## On track for achieving five-year exploration target

Kari Pump's 1,007koz maiden resource equates to 5.4% of Endeavour's prior, global resource (on a 100% basis), or 5.7% on an attributable basis. However, it equates to 6.7-10.1% of Endeavour's five-year exploration target of 10-15Moz and was achieved at a discovery cost of US\$9/oz (cf US\$15/oz budgeted). Taken together with Fetekro, Endeavour can thus be seen to have achieved 11.5-17.3% of its five-year target in under a year.

## Kari Pump valuation range US\$1.09-2.16/share

At Endeavour's (pre-Kari Pump) resource multiple of US\$129.09 per attributable resource oz, Kari Pump's resource would have a value of US\$130.0m or US\$117.0m (or US\$1.09/share) attributable to Endeavour. On the basis of it being processed through the Houndé mill however, at costs comparable to the existing operation (see pages 3-4 for detailed assumptions), we estimate that it has a fundamental value somewhere between US\$232.6m, or US\$2.16/share, based on mining the total resource from FY21, and US\$125.7m, or US\$1.17/share, based on mining our estimate of its potential reserve from FY26.

# Valuation: US\$30.74/sh plus Kari Pump and Fetekro

In valuing Endeavour, we have opted to discount potential cash flows back over four years from end-FY18 and then to apply an ex-growth, terminal multiple of 10x (consistent with a discount rate of 10%) to forecast cash flows in FY22. In the case of Endeavour, our estimate of cash flow in FY22 is US\$3.36 per share (including exploration expenditure), in which case our terminal value for the company at end-FY22 is US\$33.63/share, which (in conjunction with forecast intervening cash flows) discounts back to a value of US\$30.74/share at the start of FY19. This valuation remains unchanged since our last note, although to it may now be added our estimate of the potential value of Kari Pump, in the range US\$1.09-2.16/share, as well as that for Fetekro, in the range US\$0.06-0.44/share.

#### Kari Pump maiden resource

Metals & mining

#### 19 December 2018

**EDV** 

Price C\$19.93

Market cap C\$2,147m C\$1.3355/US\$

Net debt (US\$m) at 30 September 2018 509.2

Shares in issue (000s) 107,752

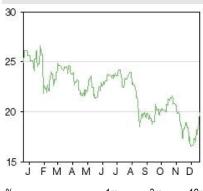
Free float 70.1%

Primary exchange TSX

Secondary exchange US OTC

#### Share price performance

Code



%	1m	3m	12m
Abs	8.8	1.0	(18.9)
Rel (local)	14.4	13.4	(9.3)
52-week high/low		C\$26.6	C\$16.4

#### **Business description**

Endeavour Mining is an intermediate gold producer, with five mines in Côte d'Ivoire (Agbaou and Ity), Burkina Faso (Houndé, Karma) and Mali (Tabakoto) and two major development projects (Ity CIL and Kalana) in the highly prospective west African Birimian greenstone belt.

#### **Next events**

Kalana updated resource Q418 and H119 and feasibility study

Q418/FY18 results March 2019

Ity CIL production Early Q219

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Edison profile page

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# Kari Pump maiden resource

For the second time in less than a month, Endeavour has announced the delineation of a c 1Moz maiden resource – in this case, at Kari Pump, 7km west of the Houndé processing plant in Burkina Faso. Owing to the intensive in-fill nature of the exploration programme to define the resource, which was based on a 40m x 40m drilling grid, even more so than at Fetekro, the majority (98.0%) of the resource has been classified into the indicated resource category (see Exhibit 1).

Generally, the mineralisation at Kari Pump is reported to exhibit excellent continuity over 1.3km and to display its typical pinch and swell characteristics with, very often, high grade quartz veining systems over significant thickness alternating with thinner intercepts associated with more moderate grades. The average drill hole intercept was 6.54m at 3.01g/t Au (uncapped) and over 84% of the diamond and reverse circulation (RC) holes drilled into the deposit were reported to have encountered at least one interval of mineralisation of 0.5g/t Au with a minimum width of more than two metres. Overall, the average grade of the maiden Kari Pump resource is at a 31.8% premium to the average of the pre-existing Houndé resource and a 44.3% premium to the most recently published global average Endeavour resource (dating from 31 December 2017) plus Fetekro. What is more, the mineralisation starts at surface and is amenable to open pit mining and approximately 45% of the Indicated resource is located within the oxide and transition zones (and is therefore typically less costly to process than the equivalent sulphide resource). A summary of the Kari Pump maiden resource, including an estimate of its potential reserve (assuming the same resource:reserve conversion ratio as at the main Houndé operation is as follows):

Category		Resource		Category		Reserve		Reserve:Resource (%)				Attributable	
	Mt	Grade (g/t)	koz		Mt	Grade (g/t)	koz	Tonnes	Grade	Contained gold	EDV interest (%)	Resource (koz)	Reserves (koz)
Measured	0.0	0.00	0	Proven	0.0	0.00	0	100.0	0.0	93.8	90	0.0	0.0
Indicated	11.3	2.71	987	Probable	8.9	2.68	767	78.6	99.1	77.7	90	887.9	690.2
Inferred	0.3	2.21	20	Possible	0.0	0.00	0	0.0	0.0	0.0	90	18.3	0.0
Total	11.6	2.70	1,007	Total	8.9	2.68	767	76.6	99.4	76.2	90	906.2	690.2

Kari Pump's 1,007koz maiden resource equates to 5.4% of Endeavour's prior, global resource (on a 100% basis), or 5.7% on an attributable basis. However, it equates to a rather more significant 6.7-10.1% of Endeavour's 10-15.0Moz exploration target over the course of the next five years and was achieved at a below average discovery cost of US\$9/oz (implying an aggregate exploration cost of US\$9.1m in total). Taken together with Fetekro, Endeavour can thus be seen to have achieved 11.5-17.3% of its five-year target in under a year.

Within the context of Houndé, the Kari Pump resource represents 28.6-40.0% of Endeavour's five-year exploration target of 2.5-3.5Moz for 20.2% of its total budget (see our initiation report, From the ground upwards, published on 16 October 2018). The discovery cost of US\$9/oz compares with a budgeted cost of US\$15/oz. It increases resources in the measured and indicated categories at Houndé by 40.1% and, at its current milling rate of c 3.6Mtpa, could support operations there for 2.5 years based on Edison's estimate of potential reserves (see Exhibit 1, above), 3.1 years based on indicated resources only and 3.2 years based on total resources including those in the inferred category.

#### Regional context

The Kari Pump resource covers an area of 1.3km x 0.8km. To define it, a total of 2,237 holes (majority air core) have been drilled over the course of the past 18 months covering 203,900m (average 91m per hole), of which over 71,000m has been drilled to extend and in-fill the



mineralisation within the past six months. Nevertheless, the deposit remains open to the east, north, northwest and southwest. Moreover, it represents only 35% of the wider Kari gold-in-soil anomaly, which covers an area of 6.0km x 2.5km and includes the two other high grade discoveries of Kari Center (1.2km x 0.2km) and Kari West (1.0km x 0.5km), at which resources are expected to be delineated in 2019. Note that the Kari area is located only 7km west of the processing plant and in proximity to an existing haul road that will be used to transport ore from Bouéré.

#### **Potential Kari Pump valuation**

At Endeavour's existing resource multiple of US\$129.09 per attributable resource oz, Kari Pump's resource would have a value of US\$130.0m or US\$117.0m (or US\$1.09/share) attributable to Endeavour. Given that Kari Pump is within 7km, and is thus within easy ore trucking distance, of the Houndé processing plant (in contrast to Fetekro), this valuation approach is appropriate given that the profile of Kari Pump's resource ounces is similar to that of the majority of those within the group.

Alternatively, looked at from the perspective of a potential mining operation, at a milling rate of 3.6Mtpa (drawn from the existing Houndé operation), an assumed stripping ratio of 13:1, an economic interest of 90%, assumed capex of US\$5m, mining losses of 5%, mining dilution of 15%, metallurgical recoveries of 94%, a royalty rate of 6%, transport and refining costs of US\$3.35/oz and a mining cost of US\$3.50/t ore and US\$2.15/t waste, Edison offers the following mine schedule – and, thus, potential fundamental valuation – of the delineated Kari Pump resource at the current time (NB see pages 5-6 for valuation based on reserves):



	2019e	2020e	2021e	2022e	2023e	2024
Tonnes milled (kt)			3,600	3,600	3,600	1,906
Diluted grade (g/t)			2.29	2.29	2.29	2.29
Contained gold (oz)			265,607	265,607	265,607	140,61
Metallurgical recovery (%)			94.0	94.0	94.0	94.0
Recovered gold (oz)			249,671	249,671	249,671	132,179
Gold price (US\$/oz)			1,437	1,304	1,303	1,264
Revenue (US\$m)			358,803	325,471	325,225	167,074
Royalty rate (%)			6.0	6.0	6.0	6.0
Royalty (US\$000s)			21,528	19,528	19,514	10,024
Transport and refining costs (US\$/oz)			3.35	3.35	3.35	3.3
Transport and refining costs (US\$000s)			12,020	10,903	10,895	5,59
Net revenue (US\$000s)			325,255	295,040	294,817	151,453
Ore mining cost (US\$/t)			3.50	3.50	3.50	3.50
Waste mining cost (US\$/t)			1.85	2.08	2.53	1.92
Processing costs (US\$/t)			14.49	14.21	14.49	13.22
G&A cost (US\$/t)			3.28	3.28	3.28	3.28
Total (US\$/t)			46.90	50.14	57.30	17.08
Mining cost (US\$000s)			116,682	129,346	154,122	7,366
Processing and G&A costs (US\$000s)			52,164	51,164	52,164	25,189
Total (US\$000s)			168,846	180,509	206,286	32,555
Total cash costs (US\$/oz)			676	723	826	246
AISC (US\$/oz)			811	845	948	364
Gross profit (US\$000s)			156,408	114,530	88,530	118,898
Depreciation (US\$000s)			1,417	1,417	1,417	750
EBIT (US\$000s)			154,992	113,114	87,114	118,148
Net interest (US\$000s)						
Pre-tax profit (US\$000s)			154,992	113,114	87,114	118,148
Tax (US\$000s)			27,124	19,795	15,245	20,676
Marginal tax rate (%)			17.5	17.5	17.5	17.5
PAT (US\$000s)			127,868	93,319	71,869	97,472
Minority interest (US\$000s)			12,787	9,332	7,187	9,747
Minority interest (%)			10.0	10.0	10.0	10.0
Attributable profit (US\$000s)			115,081	83,987	64,682	87,725
Capex (US\$000s)	1,667	2,500	833			
Attributable cash-flow (US\$000s)	-1,667	-2,500	115,665	85,404	66,099	88,475
NPV <sub>10</sub> (US\$000's)	232,635					
Do. per oz (US\$/oz)	231.05					
Do. per share (US\$/sh)	2.16					

Note that the above analysis values the Kari Pump resource as though it is brought into production at the earliest possible moment in FY21 which, in Edison's opinion, is relatively unlikely. At the other extreme, bringing it into production at the latest possible moment (which we estimate to be FY26), our valuation falls to US\$144.4m (cf US\$232.6m in Exhibit 2, above), or US\$143.46 per resource ounce (cf US\$231.05/oz, above), or US\$1.34/share (cf US\$2.16/share).

Performing exactly the same analysis as the above, but on the basis of Edison's reserve estimate as per Exhibit 1, our valuation is US\$202.4m, or US\$263.89 per reserve ounce, or US\$1.88/share, if Kari Pump is brought into production at the earliest possible opportunity, in FY21, or US\$125.7m, or US\$163.86 per reserve ounce, or US\$1.17/share, if it is brought into production at the latest opportunity, in FY26.



#### **Endeavour valuation (plus Kari Pump plus Fetekro)**

In common with past practice, in valuing Endeavour, Edison has opted to discount potential cash flows back over four years from end-FY18 and then to apply an ex-growth terminal multiple of 10x (consistent with using a standardised discount rate of 10% ad infinitum) to forecast cash flows in that year (ie FY22) to reflect the fact that Endeavour is a multi-asset company that has shown a willingness and desire to trade assets in order to maintain production, reduce costs and to maximise returns to shareholders (eg the sale of Youga and Nzema in FY16 and FY17, respectively). In recognition of the fact that exploration investment will be required to maintain cash flows at their FY22 level however, we have also opted to include it in our cash flow analysis on the grounds that it may be a critical component of ongoing business performance in its ability to continually extend the lives of the company's assets, instead of excluding it (as would be our normal practice).

At the time of our last note, (Materially ahead of expectations, published on 3 December 2018), our estimate of Endeavour's cash flow was US\$3.36 per share in FY22, on which basis our terminal valuation of the company at end-FY22 was US\$33.63/share, which (in conjunction with forecast intervening cash flows) discounted back to a value of US\$30.74/share at the start of FY19:

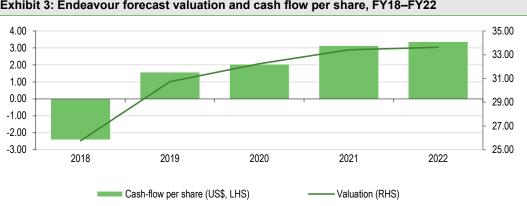


Exhibit 3: Endeavour forecast valuation and cash flow per share, FY18-FY22

Source: Edison Investment Research

This valuation remains unchanged, although to it may now be added our estimate of the potential range of values of US\$1.09-2.16 /share for the Kari Pump maiden resource (see above) and US\$0.06-0.44/share for our estimate of the potential range of values for the Fetekro maiden resource (see our note, Maiden resource paves way for potential project, published on 9 November 2018).



	US\$'000s	2016	2017	2018e	2019e	2020
December		IFRS	IFRS	IFRS	IFRS	IFR
PROFIT & LOSS						
Revenue		566,486	652,079	720,514	762,133	1,002,95
Cost of Sales		(376,794)	(597,528)	(458,343)	(390,076)	(441,940
Gross Profit		189,692	54,551	262,171	372,057	561,01
EBITDA		213,916	201,166	261,042	372,057	561,01
Operating Profit (before amort. and except.)		127,981	70,379	101,302	200,811	377,82
Intangible Amortisation		0	0	0	0	
Exceptionals		(36,272)	(149,942)	25,403	0	(
Other		(1,989)	(2,242)	(1,156)	0	(
Operating Profit		89,720	(81,805)	125,549	200,811	377,829
Net Interest		(24,593)	(18,789)	(26,467)	(47,540)	(30,592
Profit Before Tax (norm)		103,388	51,590	74,835	153,271	347,237
Profit Before Tax (FRS 3)		65,127	(100,594)	99,082	153,271	347,237
Tax		(27,643)	(32,945)	(48,394)	(55,962)	(95,285
Profit After Tax (norm)		73,756	16,403	25,285	97,309	251,952
Profit After Tax (FRS 3)		37,484	(133,539)	50,688	97,309	251,95
		80.6	98.5	107.7	107.8	107.8
Average Number of Shares Outstanding (m)						
EPS - normalised (c)		(37.8)	(6.5)	(43.9)	63.5	185.9
EPS - normalised and fully diluted (c)		(37.5)	(6.5)	(42.9)	62.2	181.8
EPS - (IFRS) (c)		28.8	(114.5)	34.7	63.5	185.9
Dividend per share (p)		0.0	0.0	0.0	0.0	0.0
Gross Margin (%)		33.5	8.4	36.4	48.8	55.9
EBITDA Margin (%)		37.8	30.8	36.2	48.8	55.9
Operating Margin (before GW and except.) (%)		22.6	10.8	14.1	26.3	37.7
BALANCE SHEET						
Fixed Assets		1,073,562	1,331,745	1,477,848	1,387,960	1,390,711
Intangible Assets		29,978	6,267	6,267	6,267	6,267
Tangible Assets		1,039,529	1,317,952	1,464,055	1,374,167	1,376,918
Investments		4,055	7,526	7,526	7,526	7,526
Current Assets		283,536	361,766	279,462	324,970	614,29
Stocks		110,404	141,898	147,044	155,537	204,684
Debtors		36,572	95,212	103,734	107,155	126,948
Cash		124,294	122,702	0	33,594	253,974
Other		12,266	1,954	28.684	28,684	28,684
Current Liabilities		(149,626)	(241,185)	(213,632)	(186,496)	(205,283
Creditors		(145,311)	(223,527)	(195,974)	(168,838)	(187,625
Short term borrowings		(4,315)	(17,658)	(17,658)	(17,658)	(107,023
Long Term Liabilities		(246,811)	(451,705)	(527,778)	(391,894)	(391,894
Long term borrowings		(146,651)	(323,184)	(459,068)	(323,184)	(323,184
Other long term liabilities		(100,160)	(128,521)	(68,710)	(68,710)	(68,710
Net Assets		960,661	1,000,621	1,015,900	1,134,540	1,407,824
		900,001	1,000,021	1,015,900	1,134,340	1,407,024
CASH FLOW						
Operating Cash Flow		164,522	244,092	185,719	354,338	532,19 <sup>-</sup>
Net Interest		(19,626)	(15,212)	(26,467)	(47,540)	(30,592
Tax		(10,625)	(22,301)	(21,357)	(55,962)	(95,285
Capex		(212,275)	(441,396)	(456,481)	(81,358)	(185,934
Acquisitions/disposals		32,098	(37,332)	60,000	0	
Financing		174,702	116,536	0	0	(
Dividends		(2,612)	(5,177)	0	0	(
Net Cash Flow		126,184	(160,790)	(258,586)	169,478	220,380
Opening net debt/(cash)		152,856	26,672	218,140	476,726	307,248
HP finance leases initiated		0	0	0	0	(
Other		0	(30,678)	0	0	(
Closing net debt/(cash)		26,672	218,140	476,726	307,248	86,86



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