Hummingbird Resources

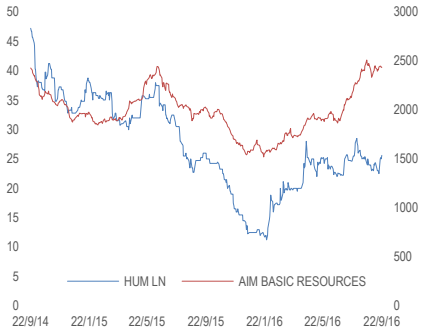
MIRABAUD 1819

Mining Research

14:30 22/09/16[i]. 15:00 22/09/16[ii]

Buy

Ticker	HUM LN
Share Price (£)	0.25
Target Price (£)	0.44
Upside (%)	75%
12mth high/low (£)	0.29/0.11
Shares out (m)	343.2
Market Cap (£m)	85.8
Enterprise Value (£m)	39.3



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Yanfolila: one of Africa's lowest-cost gold producers

Hummingbird offers exposure to near-term production from one of Africa's lowest-cost gold deposits (all-in sustaining cash cost of <US$700/oz), via its under-construction Yanfolila gold project in southwest Mali. Yanfolila, will be among the top five highest grade open-pit gold mines owned by a junior globally, offering one of the highest returns in the sector (post-tax IRR >50%) due to its low capital intensity (see p5) and the above-mentioned project characteristics (high-grade open-pitable deposit).

Beyond Yanfolila, HUM retains a strong pipeline, owning one of the largest gold deposits in West Africa, the DFS-stage Dugbe gold project in Liberia, as well as other exploration assets in Mali (these assets are within "truckable" distance from Yanfolila and thus any high-grade discoveries could be processed at the Yanfolila plant).

Over the last few months HUM has succeeded in significantly de-risking Yanfolila, reflecting the systematic work management has undertaken to transform the company from a developer to a producer. Following the completion of the DFS (January 2016) and the optimised mine plan (February 2016) the company has raised the majority of the project funding (June 2016). The only missing piece is the finalisation of the terms for a senior debt facility (we understand this will happen within the next few week), and thus we expect HUM's shares to re-rate towards fair value (we calculate an upside of ~75% if HUM were to trade at 1.0x its NAV - see p3).

We value HUM on a sum-of-the-parts basis, using the operating and cost parameters from Yanfolila's optimised mine plan (including the Gonka Deposit – phase 3), adjusted to our own assumptions. **We re-initiate coverage of Hummingbird with a BUY recommendation and a target price (TP) of 44p.**

Summary forecasts

Y/E-Dec		2016F	2017F	2018F	2019F
Production	koz	-	-	126	120
Gold price	US$/oz	1,280	1,292	1,246	1,200
AISC	US$/oz	-	-	733	626
EBITDA	US$m	(3)	(4)	64	70
EV/EBITDA	x	na	na	0.8	0.7
P/E	x	na	na	2.4	2.3

Source: Mirabaud Securities estimates £1=US$1.31

Source: Hummingbird Resources

Investment case

HUM's flagship project Yanfolila could be followed by the Dugbe gold project in Liberia

Hummingbird Resources, the AIM-quoted gold developer and explorer, has two development gold projects in West Africa: the 85%-owned Yanfolila gold project in Mali and the 90%-owned Dugbe 1 gold project in Liberia. Following the acquisition from Gold Fields (June 2014) of the Yanfolila project, the latter has become the company's flagship asset with first production now expected by the end of next year (at a LoM average production rate of ~107koz pa).

Yanfolila is a high-grade open-pittable deposit in southwest Mali which offers high returns (IRR of ~55% at US$1,250/oz gold price) and a payback period of <2 years. That is mainly due to its low capital intensity (see p5) as well as due to the project's robust profit margins (~45%) as a result of the low-cost profile (AISC of <US$700/oz) supported by the high grade nature of this conventional open-pittable deposit.

We conservatively calculate Hummingbird's total funding needs at ~US$110m, comprising ~US$80m of Yanfolila's initial capital expenses (~US$4m of which has already been spent), ~US$12m working capital needs and US$15m for the refinancing of the outstanding bridge finance facility with Taurus Mining Finance Fund (Taurus) to be repaid by the December 8. The above will be covered by the ~US$75m capital raise (completed in June for net proceeds of ~US$72m - including the recent US$3.8m private placement) along with a likely senior debt facility which we conservatively estimate at ~US$40m and for which the company is now better positioned to negotiate its terms having received a number of expressions of interest.

Hummingbird also owns the DFS-level (PEA completed in March 2013) Dugbe gold project in Liberia (4.2Moz of resources at 1.4g/t), the development of which has been currently slowed down. We conservatively value Dugbe at US$30m (at a resource multiple of US$7.0/oz) in recognition of its size as in our view it represents optionality if the gold price remains at current or moves to higher levels (see p13).

Upcoming catalysts

Senior debt facility in-place	Q4 CY2016
Yanfolila construction commission	Q4 CY2016
Yanfolila construction completion	Q4 CY2017
Plant commissioning at Yanfolila	Q4 CY2017
Yanfolila achieves steady state production	Q1 CY2018

Source: Mirabaud Securities

Main risks

Over the last few months Hummingbird has succeeded in significantly de-risking the Yanfolila gold project. Following the completion of the DFS (January 2016) and the optimised mine plan (February 2016) the company has raised the majority of the project funding (June 2016), with the only piece missing for the project's construction and commissioning being the finalisation of the terms of a senior debt facility.

Thus, in our view, the main risks the company still carries, on top of the debt facility (we expect this to be concluded later this year), are the risks and uncertainties related to the (on-budget and on-time) construction completion and commissioning phase of the project. These include, among others, potential cost overruns and delays in first production as well as teething problems during commissioning which are to be expected at any new mine, but could require additional capital.

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Valuation

We value gold equities using a 8% discount rate and a US$1,200/oz long-term price

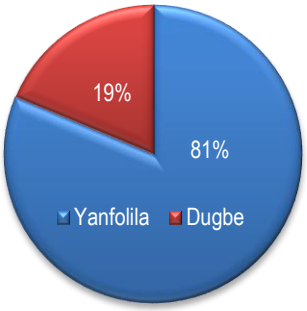
Our typical valuation approach for gold stocks is to calculate the NPV through discounted cash-flow analysis using an 8% discount rate and our in-House gold price assumption, which assumes a US$1,200/oz long-term gold price (from 2019).

Our 43.6p per share sum-of-parts valuation of Hummingbird is based on an NAV estimate of ~US$157m which is dominated by the company's flagship Yanfolila project in Mali (81% of our valuation), followed by the Dugbe gold project in Liberia (see table below). HUM's cash and liquid assets were reported at ~US$4m (at the end of April 2016), while we estimate the negative NPV of the G&A expenses at ~US$22m. We also include the 225.4m new shares and the cash resulting from the recent equity issue (net proceeds of ~US$72m).

We estimate an NPV for Yanfolila of ~US$163m, of which HUM's equity-attributable share would be ~US$140m. However, due to the different stages of development, we are applying risk-multiples for phase 2 and phase 3 of 20% and 50% (see p10), respectively, in recognition of the risk contained in the conversion of the indicated resources to reserves for phase 2 and the early stage development (scoping study vs DFS) of the Gonka deposit.

We value Dugbe on an EV/oz of attributable resources basis based on our in-house London gold stocks' comparative table (see p13). Taking into consideration Dugbe's development stage and the necessary work HUM should undertake to re-scope it, we believe Dugbe should be valued at HUM's EV/oz multiple of US$7.0/oz (well-below our table's average of US$48.1/oz). That values Dugbe (4.2Moz) at US$30m.

NPV split



Sum-of-parts valuation

	US$m	p/sh*
Yanfolila phase 1, $NPV_{8\%}$ (no risk factor)	107.6	24.0
Yanfolila phase 2, $NPV_{8\%}$ (20% risk-weight)	11.7	2.7
Yanfolila phase 3, $NPV_{8\%}$ (50% risk-weight)	8.2	1.7
Yanfolila (85% attributable basis)	127.5	28.4
Dugbe (@ 6.7x EV/oz multiple)	30	6.6
Project valuation	**157.1**	**34.9**
Net debt (as at end of April 2016)	-11.1	-2.5
Corporate-level costs, $NPV_{8\%}$	-21.9	-4.9
Cash from the capital raise	72.0	16.0
Company valuation	**196.2**	**43.6**

Source: Mirabaud Securities estimates £1 = US$1.31

Based on the above we re-initiate coverage with a BUY recommendation and a TP of 44p, representing ~75% upside to the current share price.

Sensitivity analysis

The first set of tables below illustrates Yanfolila's NPV and IRR and our TP's sensitivity to a range of gold prices and discount rates. They indicate a robust project with high IRR even at our conservative LT gold price assumption of US$1,200/oz.

Yanfolila's NPV (US$m) and IRR (%) sensitivity to gold price and discount rate

	US$1,100/oz	**US$1,200/oz**	US$1,300/o	US$1,400/oz	US$1,500/oz	US$1,600/oz
12%	112	119	126	133	141	148
10%	115	123	131	139	146	154
8.0%	119	**128**	136	144	153	161
6.0%	123	133	142	151	160	169
IRR	46%	**54%**	63%	71%	78%	86%

Source: Mirabaud Securities estimates

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Target price sensitivity to gold price and discount rate (p/sh)

	US$1,100/oz	**US$1,200/oz**	US$1,300/oz	US$1,400/oz	US$1,500/oz	US$1,600/oz
12%	40.2	41.8	43.4	44.9	46.5	48.1
10%	40.9	42.7	44.4	46.1	47.8	49.5
8%	41.8	**43.6**	45.5	47.4	49.2	51.1
6%	42.7	44.7	46.8	48.8	50.9	53.0

Source: Mirabaud Securities estimates

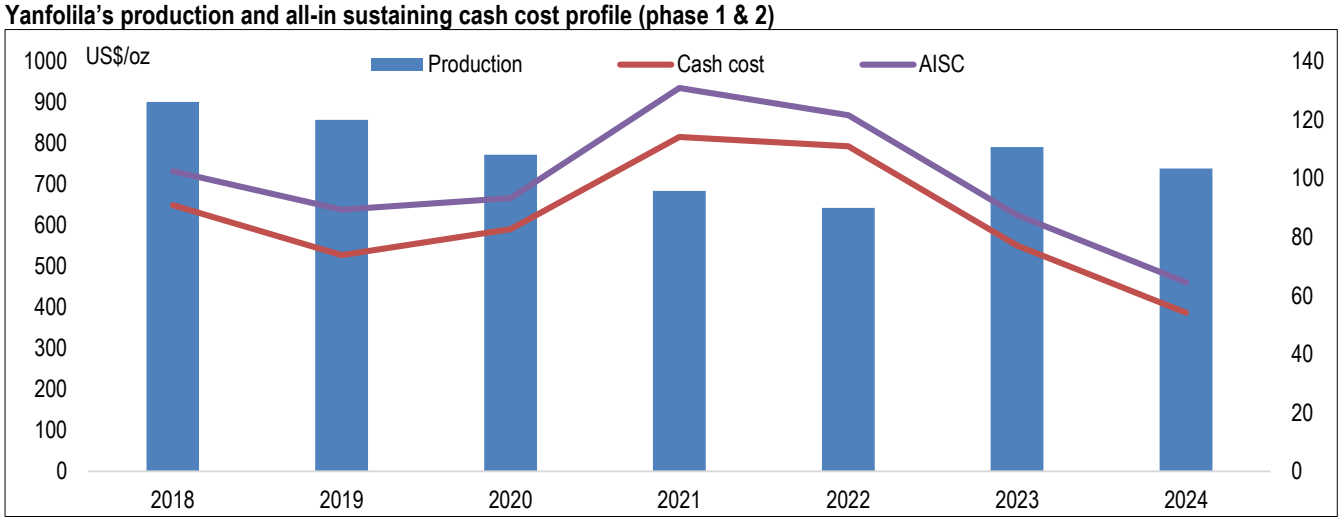
We believe that, through the on-time and on-budget construction completion of Yanfolila, HUM's shares should re-rate towards its real value which we believe should be similar to that of other single asset gold producers (see table below). If HUM were to trade at our group's P/E and EV/EBITDA average of 11.6x and 5.1x respectively, we would expect a significant share price increase.

Sensitivity analysis to gold price and NAV multiple

	Centamin	Teranga	Asanko[1]	Roxgold[2]	Shanta Gold	Caledonia Mining	Serabi Gold	Hummingbird
Annual gold production (koz)	532*	210*	190*	100**	85*	50*	37*	128**
P/E	14.0	14.9	15.8	10.6	5.1	7.1	13.6	2.4#
EV/EBITDA	6.9	3.3	6.7	5.8	2.5	3.8	4.0	0.8#

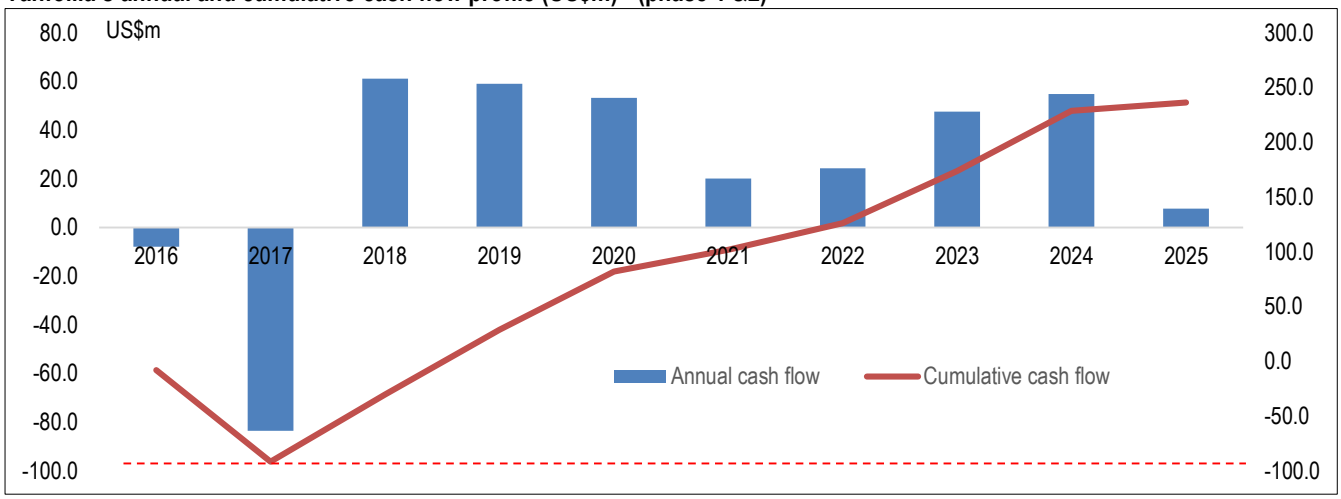
Source: Mirabaud Securities estimates, Bloomberg *2016 estimates **LoM average gold production [1]First gold poured January 2016 and commercial production reported in Q2 2016 [2]First gold poured May 2016 with commercial production excepted in Q3 2016 #our estimated average of the first two years of production (2018-2019)

Yanfolila's production and all-in sustaining cash cost profile (phase 1 & 2)



Source: Mirabaud Securities

Yanfolila's annual and cumulative cash flow profile (US$m) - (phase 1 &2)



Source: Mirabaud Securities estimates

Lowest capex intensity in West Africa

Yanfolila is one of the least capital intensive gold projects in West Africa. At US$859/oz of LoM average annual gold production (including contingency), Yanfolila lies well-below our estimated West African median of US$1,444/oz, while with US$70/t pa ranks below our group's annual mill throughput capital intensity median (see table below). In our view the discount realistically reflects Yanfolila's inherent infrastructure advantages such as the well-conditioned roads in the area, the flat topography, the plentiful water supply as well as the fact that the project consists of several shallow deposits (5 open pits in phase 1 & 2).

Yanfolila vs. other West African development and early production projects

Company	Country	Project	Resources	Grade	Reserves	Grade	Size	Capex	US$/tpa	Prod.	US$/oz pa	AISC
Hummingbird	**Mali**	**Yanfolila**	**2.2**	**2.4**	**0.7**	**3.1**	**1.3**	**92#**	**73**	**107**	**859**	**695**
African Gold	Mali	Kobada	2.2	1.0	0.5	1.3	1.6	45	28	50	900	790
Semafo	Burkina Faso	Natougou	1.9	4.0	1.3	4.2	1.3	219	163	226	969	518
Asanko	Ghana	Esaase	4.4	1.5	2.7	1.4	7.0	295	42	300	983	781
Roxgold*	Burkina Faso	Yaramoko	1.1	15.0	0.8	11.8	0.3	107	394	100	1,070	600
Endeavour Mining	Burkina Faso	Karma	5.0	1.1	0.9	0.9	4.0	135	34	120	1,125	700
Teranga Gold	Burkina Faso	Banfora	3.6	1.4	1.0	1.9	2.0	85	43	74	1,152	839
Toro Gold	Senegal	Mako	1.3	1.4	1.0	2.2	1.8	170	94	140	1,214	795
Nord Gold	Burkina Faso	Bouly	3.5	0.6	1.3	0.6	7.5	154	21	118	1,305	734
Perseus Mining	Ivory Coast	Sissingue	0.9	1.7	0.4	2.4	1.1	100	91	75	1,333	632
Perseus Mining	Ivory Coast	Yaoure	7.4	1.5	3.2	1.6	4.5	340	76	203	1,675	667
Aszumah	Ghana	Wa	2.0	1.5	0.7	2.1	1.2	129	108	90	1,433	1000
Aureus Mining	Liberia	New Liberty	1.1	3.6	0.9	3.4	1.2	160	133	110	1,455	790
AXMIN	Burkina Faso	Passendro	3.1	1.9	1.2	2.0	2.8	250	89	163	1,534	600
B2Gold	Mali	Fekola	4.8	2.0	3.7	2.4	4.0	430	108	276	1,558	750
Asanko	Ghana	Nkran	3.5	2.2	2.5	2.2	3.0	295	98	185	1,595	781
Perseus Mining	Sierra Leone	Baomahum	2.7	1.9	1.2	1.6	1.0	143	143	63	2,270	975
Hummingbird	**Liberia**	**Dugbe**	**4.2**	**1.42**	**2.87**	**1.3**	**3.5**	**212**	**61**	**125**	**1,696**	**900**
B2Gold	Burkina Faso	Kiaka	4.8	1.0	2.6	1.5	12.0	610	51	340	1,794	750
Endeavour Mining	Burkina Faso	Hounde	2.9	2.2	2.1	2.1	3.0	328	109	180	1,822	709
Orezone	Burkina Faso	Bombore	5.3	1.1	1.5	0.8	5.5	260	47	116	2,241	690
Endeavour Mining	Ivory Coast	Ity	3.8	1.6	1.6	1.7	3.0	300	100	120	2,500	825
Average			**3.3**	**2.4**	**1.6**	**2.4**	**3.3**	**212**	**96**	**149**	**1,477**	**751**
Median			**3.3**	**1.5**	**1.2**	**2.0**	**2.9**	**191**	**90**	**120**	**1,444**	**750**

Source: Mirabaud Securities *Yaramoko lies outside the graphs in p7 due to its high grade #Yanfolila's capex contains ~US$12m of working capital

From a resources multiple (EV/oz) point of view, based on our in-house London gold stocks' comparatives table, Hummingbird is currently trading at US$7.0/oz, which places the company well-below our exploration and production gold stocks' average of US$48.1/oz (see graph in p6). Hummingbird's deep discount could be partly explained by the fact that the early stage Dugbe gold project, which the market heavily discounts, contributes almost two thirds of the company's total resources.

However, with first production from Yanfolila being only 15 months away, we would expect the company's share price to re-rate towards fair value. If Hummingbird were to trade at our gold companies' comparison table's average of ~48x that would give Hummingbird a likely upside of >200% (or £0.80p per share - for that calculation we are accounting for the company's current net cash position of ~US$61m - as at the end of April 2016).

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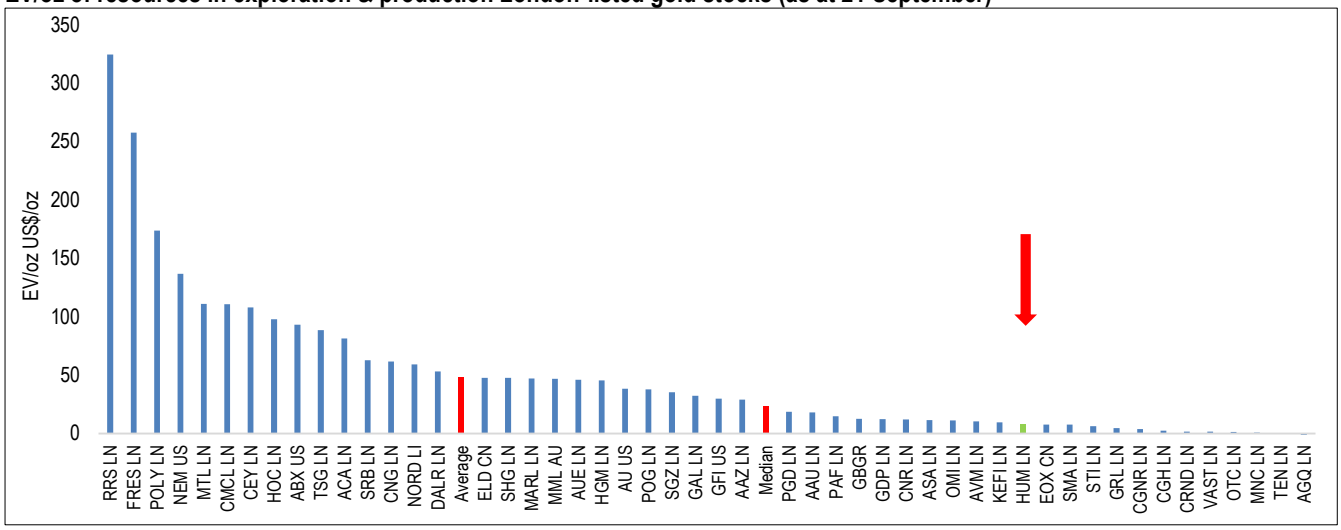
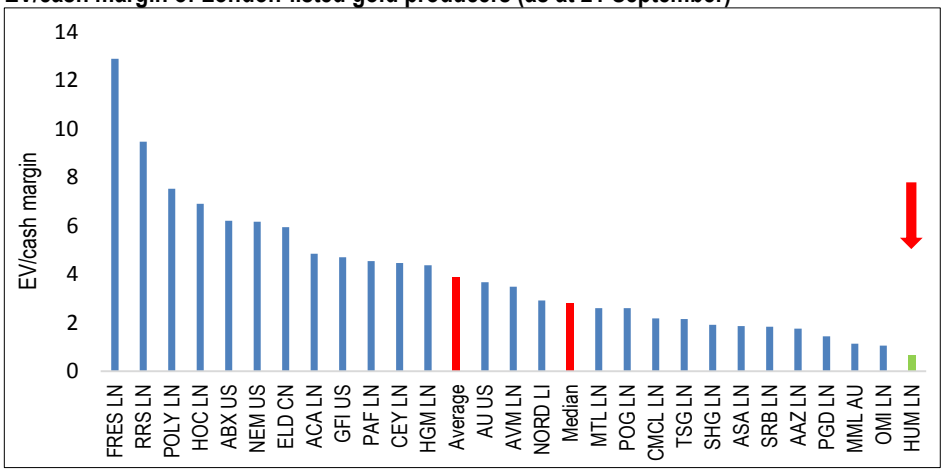
EV/oz of resources in exploration & production London-listed gold stocks (as at 21 September)



Source: Mirabaud Securities

The graph below illustrates that HUM, as a junior gold developer and based on our group's median, should trade at ~4x its EV/cash margin, which in turn, based on our assumed net cash position of ~US$61m, could result in a likely share price uplift of >250%. That is in-line with our assumed EV/oz multiple upside (above).

EV/cash margin of London-listed gold producers (as at 21 September)



Source: Mirabaud Securities

In our view, from the graph above it is obvious that the market undervalues Yanfolila's inherent characteristics which differentiates HUM from the competition. That is Yanfolila's low cost structure which is driven by the high grade, near surface, openpitable nature of the deposit and ranks the project in the lowest quartile of the West African gold producers' cost curve (see graph on p7).

For the purpose of a comparative analysis of the key characteristics between HUM's Yanfolila and those of the other West Africa gold projects (under development or in early production stage - table in p5), we have compiled two West African gold project graphs which compare the projects in a reserve grade, all-in sustaining cash cost (AISC), capital intensity (bubble size) and IRR (bubble size) basis. What is immediately apparent from that is that Yanfolila lies in the less risky quadrant (lower right) of both graphs along with Natougou (OP) and Yaramoko (UG – did not fit in the graph) deposits in Burkina Faso and the Sissingue (OP) project in Ivory Coast.

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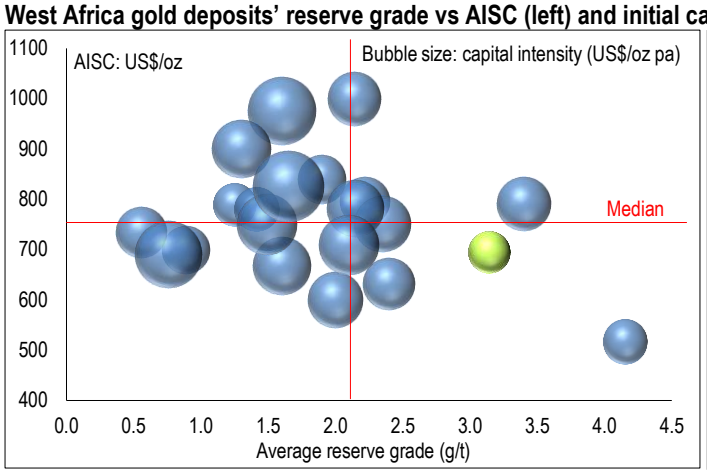
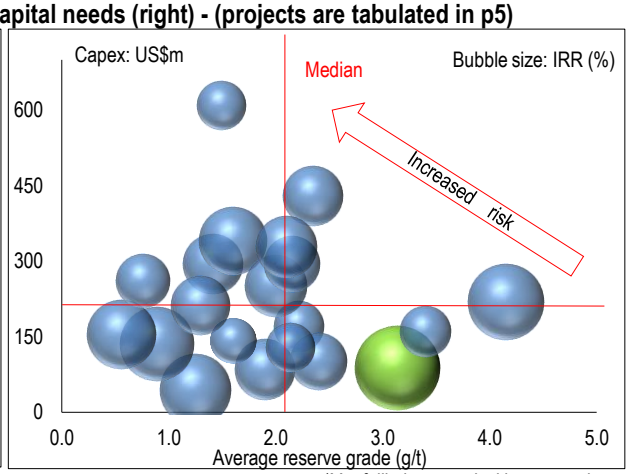
West Africa gold deposits' reserve grade vs AISC (left) and initial capital needs (right) - (projects are tabulated in p5)



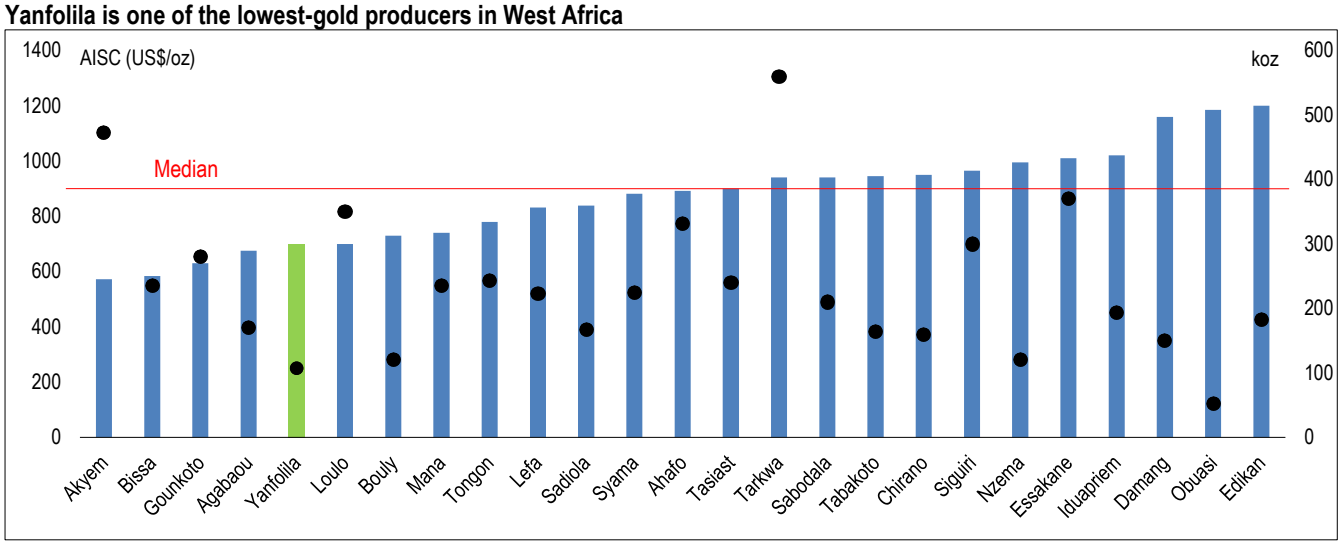


Source: Mirabaud Securities

*Yanfolila is spotted with green colour

Yanfolila also ranks well among the West African gold producers (see graph below) with a LoM all-in sustaining cash cost of US$695/oz vs. our group's median of ~US$900/oz, indicating that HUM will become one of the lowest-cost gold producer in West Africa when in production.

Yanfolila is one of the lowest-gold producers in West Africa



Source: Mirabaud Securities

Recent M&A activity in WA values Yanfolila at US$150m

Based on the recent M&A activity in the region of West Africa (see table below), we value Yanfolila at ~US$130-170m (vs. our model's ~US$160m – 100% of Yanfolila's phase 1 and 2), at an EV/oz of reserves and resources of US$130/oz and US$85/oz respectively.

Yanfolila's supplementary valuation based on recent sector deals in West Africa

		Company	Deal size	Project stage	Resources	Resource grade	US$/oz of resources	Reserves	Reserve grade	US$/oz of reserves
Yaoure	Ivory Coast	Perseus M.	US$98m	PFS	7.4	1.5	13.2	3.2	1.6	30.6
Kiaka	Burkina Faso	B2Gold	US$78m	PFS	4.8	1.0	16.4	2.6	1.5	30.1
Banfora	Burkina Faso	Teranga Gold	US$70m	BFS	3.6	1.4	19.2	1.0	1.9	66.8
Natougou	Burkina Faso	Semafo	US$139m	DFS	1.9	4.0	75.1	1.3	4.2	108.9
Fekola	Mali	B2Gold	US$570m	PFS	4.8	2.0	119.5	3.7	2.4	153.2
Karma	Burkina Faso	Endeavour M.	US$167m	Build	5.0	1.1	33.5	0.9	0.9	186.0
Average					**4.6**	**1.8**	**46.1**	**2.1**	**2.1**	**95.9**
Yanfolila	Mali	Hummingbird	US$130-170m	DFS	2.0	2.4	85.0	1.0*	3.0	130.0

Source: Mirabaud Securities *we are assuming mineable inventory of 1Moz comprising of 0.7Moz of reserves (Phase 1) and ~0.3Moz of resources (Phase 2 & 3)

Yanfolila vs. Aureus's New Liberty

Although it is impossible to avoid comparison between Hummingbird and Aureus as both are gold juniors developing similar projects, high-grade open-pittable gold deposits operating in the same region, that does not tell the whole story.

HUM will benefited from the country's and previous owner's infrastructures

In our view, the country of operation is a key difference, as Mali offers HUM a number of infrastructure advantages that Liberia lacks. Although Mali has recently suffered from political uncertainty, that was mainly focused in the northern part of the country and thus we believe it is very unlikely to affect southern Mali where a number of industry's majors (like Randgold, AngloGold and Iamgold) operate.

HUM will pay half the money for Yanfolila than Aureus paid for New Liberty

Yanfolila's relatively low initial capex has being assisted by the project's favourable topography which allows for savings in the earth works (mainly in the TSF). HUM, has also inherited from Goldfields (project's previous owner), a number of facilities like roads to the mine as well as an exploration camp (built at mining standards).

New Liberty, on the other hand, is Liberia's first gold mine, and thus the company should either construct from scratch or improve some basic infrastructure (access road, bridges etc.). That, along with the extra cost for the river diversification, the village relocation and the extended pre-stripping were the main reasons for the higher initial capex, which ranked New Liberty in the middle of our capital intensity list. It is worth mentioning that for an equal size plant Aureus spent almost twice the money HUM has committed for Yanfolila (see table on p5).

We note though, that during the New Liberty's construction period the 2014 Ebola outbreak hardly hit Liberia resulting in a delay in the construction completion. That, along with some normal teething issues related to the process of commissioning, caused a delay in first gold sales which in turn weakened AUE's balance sheet and limited the company's options during the new debt repayment schedule negotiations.

HUM's low debt allows for "non-fatal" delays and cost overruns

Conversely, Hummingbird's debt exposure (we estimate ~US$40m) will be almost one third of that of Aureus's (~US$110m), resulting in a smoother debt repayment profile, which relieves management most of the first production pressure.

Yanfolila will become a lower cost producer

On top of the above, Yanfolila maintains its inherent advantage of being one of the lowest cost gold producers in West Africa with a LoM average AISC ~15% below of that of New Liberty. That is mainly driven by the lower (power) processing cost as well as by the lower stripping (11.5:1 vs. New Liberty's 15.5:1).

Overall, HUM seems to be better positioned to cope with potential difficulties during the construction and commissioning stage, favoured also from the positive sentiment in the gold market.

Capital raise

HUM on 12 June announced a ~US$71m equity issue with new and existing shareholders which, along with an additional capital raise of US$3.8m (August 12 – with Fidelity Investments), will fund the construction of Yanfolila as well as refinance the US$15m bridge finance facility with Taurus, while the private placement will allow HUM to enlarge the project's scope through the inclusion of more satellite deposits.

Post-equity raise register

The company raised in total ~US$75m (net proceeds of ~US$72m - including a ~US$5m greenshoe) through the placing and subscription of 225.2m new shares at

22p/sh for the main equity raise and 11.1m new shares at 26p/sh for the additional funding (at a ~18% premium over the main capital raise).

Top 10 institutional shareholders (~40% of the company's register)

Investor	No of shares (m)	% of shares in issue
Capital Group companies	31.53	9.19
Gold Fields Ltd	21.26	6.19
Odey Asset Management	20.86	6.08
Pala Investment	15.55	4.53
Sloane Robinson llp	13.48	3.93
Resource Capital inv. corp.	8.37	2.44
Mark Hillery	6.44	1.87
Smith & Williamson holding	6.17	1.80
Dan Betts	5.11	1.49
Corona Gold	4.84	1.41

Source Bloomberg

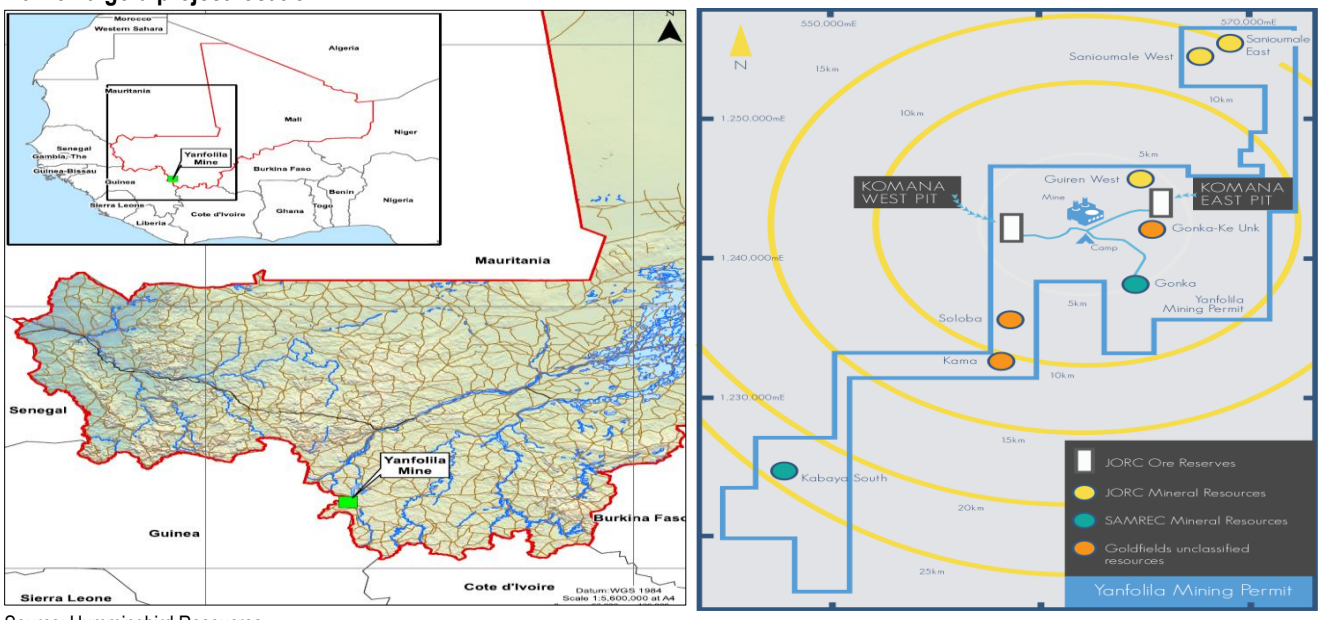
Yanfolila gold project

The Yanfolila deposit sits on the eastern side of the Sankarani river (the natural border which divides Mali and Guinea), in the Sikasso region of southwest Mali in West Africa. The permit area contains several deposits up to a maximum distance of 15km from the likely position of the processing plant (see picture below).

The project consists of two main clusters of ore deposits, with Komana East (KE) & West (KW), Guirin West (GW) and Gonka sitting around the processing plant at the centre of the mining permit and Sanioumale West (SW) & East (SE) located in the north. The project will be developed by progressively mining all five deposits (KE, KW, GW, SW, SE), with the Gonka deposit, which requires further drilling to upgrade part of its resources to the M&I category and subsequently to reserves, currently being considered as Yanfolila's likely extension.

Hummingbird acquired Yanfolila in July 2014 from Gold Fields in an all-share US$20m deal through the issue of 21.3m shares (at 56p per share). Goldfields showed its faith in the quality of the project, which proved to be too small for its pipeline, by retaining exposure to the upside through a significant shareholding in Hummingbird (now ~6%, having being diluted down from 26%).

Yanfolila gold project location



Source: Hummingbird Resoucres

Hummingbird has an 85% interest in Yanfolila with a Malian partner holding 5% and the Government of Mali retaining a 10% free-carry interest once all costs have been recovered. According to the initial agreement signed between the company and the government of Mali, the latter on top of the current 10% free carried interest has the right to purchase a further 10%. We calculate the value of the extra 10% at US$10-15m and we understand that this cost will be paid as part of the Government's profits share from the project.

We also note that, according to the company, the project carries a tax loss of ~US$90m, the result of extended drilling from previous owners including mainly Gold Fields and Glencar Mining.

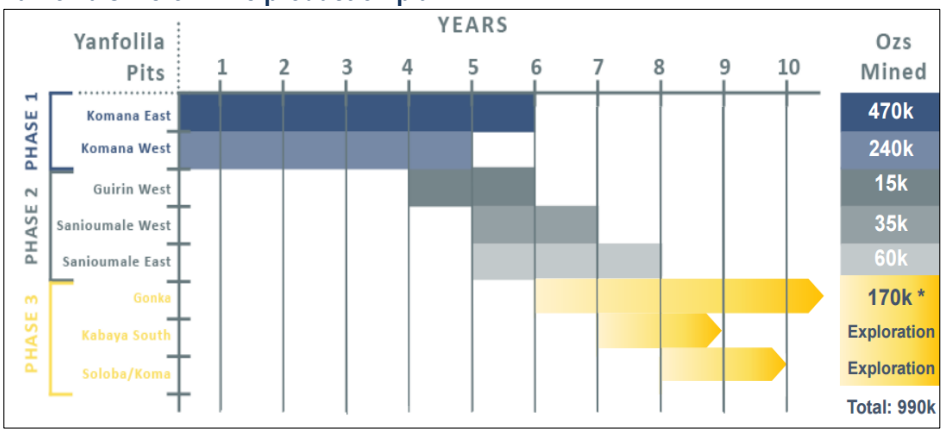
Following the acquisition of Yanfolila from Gold Fields, Hummingbird conducted an extensive drilling campaign (15,000m of infill and extension drilling) which led to a new resource estimate (see p14) and consequently an optimisation study (March 2015). The latter, enlarged the project's scope through the inclusion of three more satellite deposits (that of Sanioumale East and West and Guiren West) allowing for one more satellite deposit (Gonka) to be mined later in the project's life.

Yanfolila's development will take place in three phases. Phase 1 contains the development of the Komana East and West deposits (2 main pits which host the majority of the Yanfolila's gold target with >70% of total mineable inventory) and supports a ~6 year LoM (reserves have been calculated at 710koz). During the payback period (~2 years) HUM has constraint the mining over those two pits.

Phase 2 will extend Yanfolila's LoM by ~1.5 years, through the addition of three more satellite deposits: Guirin West, Sanioumale West and Sanioumale East (resources: 20Mt at 3g/t for 210koz of gold of which ~110koz is considered as potential recovered gold production). However, further drilling will be required to upgrade part of the M&I resources to reserves.

Finally, there is an option for an increase in Yanfolila's gold inventory by ~160koz (recovered), through the addition of more satellite deposits with the main one being the Gonka deposit (5km far from the plant). There is also UG potential for the Gonka deposit once open-pit mining is completed. However, Gonka, which is at a scoping-level study (February 10 - based on SAMREC compliant inferred resources and Goldfield's estimates), does not form part of the project's DFS, and thus represents a likely upside when further infill drilling will be undertaken to de-risk the project.

Yanfolila's life-of-mine production plan



Source: Hummingbird Resources *Gonka at scoping study stage and not in DFS mine plan

Optimised plan

Hummingbird has recently (February 29) published an optimised mine plan for Yanfolila based on the company's previously announced (January 18) DFS.

That considers a simple process plant design utilising gravity and carbon-in-leach with throughput capacity of 1.24Mtpa which will be fed from five open-pits for an 8-year life-of-mine (phase 1 & 2 only) with average annual production of 107koz (year 1 production is estimated at ~122koz) and an average grade of 2.95g/t.

Initial capital expenditure is estimated by the company at US$80m (including contingency) resulting in a relatively low capital intensity of throughput capacity of ~US$73/tpa and an average all-in sustaining cash cost (AISC) of ~US$700/oz (well-below our estimate of the regional gold producers' median AISC of ~US$900/oz). The company's optimised mine plan calculates an NPV_8 of US$162m and an IRR of 60% at a base-case gold price assumption of US$1,250/oz.

We are modelling Yanfolila based on the company's optimised plan (see table below) while accounting for the potential exploitation of the Gonka deposit (phase 3). Gonka, according to the company, contains 170koz of mineable resource (92koz OP and 77koz UG) representing ~17% of the project's total mineable inventory and could boost our NPV by ~15%, while remains open along strike and at depth.

However, due to the different stages of development, we are applying risk-multiples for phase 2 and phase 3 of 20% and 50%, respectively, in recognition of the risk contained in the conversion of the indicated resources to reserves for phase 2 and the early development stage (scoping study vs DFS) of the Gonka deposit. In that base case, we calculate an NPV_8 of US$128m and IRR of ~54% for Yanfolila (HUM's 85%), based on our long-term gold price assumption of US$1,200/oz.

Summary of Mirabaud and Hummingbird cash-flow modelling assumptions and outputs

Item	Unit	Mirabaud - based on optimised mine plan#	HUM – optimised mine plan*	HUM – DFS + Gonka**	HUM – DFS*
Gold price	US$/oz	1,200	1,250	1,250	1,250
Plant throughput	Mt	1.44[1]	1.25	1.25	1.25
Life-of-mine	years	7.3	7.0	7.5	7.1
Ore mined	Mt	10.5	8.7	11.1	8.8
Waste mined	Mt	114	104	129	107
Strip ratio	x	10.9:1	11.9:1	11.6:1	12.1:1
Average head grade	g/t	2.96	2.95	2.79	2.77
Contained gold	Koz	999	830	956	787
Recovery rate	%	92.5	92.8	92.9	92.5
Gold produced (average annual production)	koz	128	107	124	102
Gold produced (total production)	koz	934	770	888	727
On-site cash operating costs	US$/oz	626	620	657	645
Total cash costs (including royalties)	US$/oz	692	-	-	-
All-in-sustaining cost (AISC)	US$/oz	698	695	741	720
Tax rate	%	30	30	30	30
Plant & infrastructure capital cost (including contingency)	US$m	80	79	87	79
Mining pre-strip (working capital needs)	US$m	12	9	9	9
Total initial capex (including contingency)	US$m	92	88	96	88
LoM capex (incl. sustaining capex & ph. 3 expansion cost)	US$m	122	92	110	92
Post-tax NPV_8	US$m	163	162	166	142
Post-tax IRR	%	54	60	56	55
Payback period	years	1.4	1.3	-	1.3

Source: Mirabaud Securities estimates *The DFS and the optimised DFS LoM plan comprises phase 1 (KE & KW - reserves) and phase 2 (GW, SE & SW – resources)
** This study comprises phase 1 (KE & KW - reserves), phase 2 (GW, SE & SW – resources) as well as the Gonka deposit (SAMREC resources & Goldfields internal study)
#Our LoM plan comprises phase 1 (KE and KW deposits), phase 2 (GW, SE and SW deposits) as well as phase 3 (Gonka deposit – SAMREC resources)
[1] We are assuming initial throughput of ~1.25Mtpa during phase 1 and 2 which increases to ~1.5Mtpa when the Gonka deposit (phase 3) is incorporated in the mine schedule

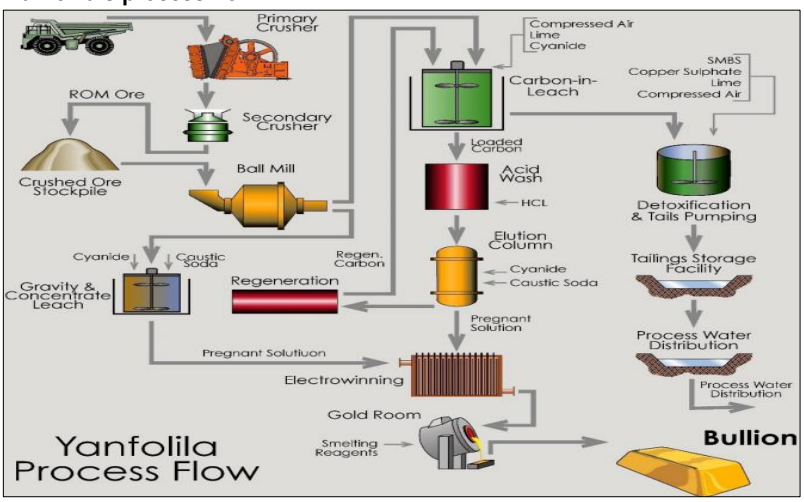
We are also assuming ~5% total deductions from the revenue line of our model comprising a 3% government royalty, a 1% NSR to La Petite Mine d'Or SARL, 0.65% in stamp duty and ~0.5% for refining costs.

There is also significant potential for fresh ore outside the existing mine plan to be exploited in a higher gold price environment.

The DFS assumes treatment of both oxide and fresh material, utilising a two-stage crushing facility which will be assisted by a tertiary crushing facility when the proportion of fresh ore increases, in order to maintain throughput unchanged at 1.24Mtpa. The inclusion of the fresh rock has increased both capex and opex as it will require the addition of a third crusher later in the project's life in order for the ore to become amenable for further processing.

The mineralisation is amenable to gravity and CIL recovery (7-tank CIL circuit – 1 pre-leach and 6 CIL tanks) with LoM average metallurgical processing recoveries estimated at 92.5% (from 91% for fresh and transitional ore to 94% for oxide ore).

Yanfolila's process flow



Source: Hummingbird Resources

The road to production

The proceeds of the recent (August 12) private placement with Fidelity of US$3.8m along with the main equity raise (June 2) of ~US$71m, coupled with a likely senior debt facility which we estimate at ~US$40m for the balance of the funding requirements (~US$80m for capex, ~US$12m for working capital and US$15m for the repayment of the outstanding bridge facility with Taurus), ensures that the company is fully funded to construction completion in late-2017.

In the meantime, the company will proceed with the mine dewatering ahead of mining as well as the front end engineering design (FEED) which covers the development of detailed engineering drawings and could take up to six months for completion, with the commencement of full construction expected in Q4 CY2016. On this schedule, we expect construction completion in Q4 CY2017 (assuming a 12-month construction period) which, coupled with a 3-month ramp-up, would mean steady-state production in Q1 CY2018.

Dugbe Gold Project

Hummingbird also owns a 90% interest in the DFS-stage 4.2Moz Dugbe gold project in southeast Liberia, one of the largest gold deposits in the area. Dugbe comprises the Dugbe F (1.76Moz), Tuzon (2.47Moz) and Sackor (no resources) deposits.

The April 2013 published PEA was based on a 20-year mine plan that mined Tuzon first followed by Dugbe F at an average head grade of 1.31g/t to feed a 3.5Mtpa tank-leach operation (scoped at a relatively low initial capex of US$143m excluding mining equipment cost of US$68.7m), for average production of 125koz pa at a relatively high total cash cost of US$904/oz. On that basis HUM values Dugbe at US$186m yielding an IRR of ~29% at a US$1,300/oz flat gold price, which increases to US$337m and ~43% respectively at a higher gold price assumption of US$1,500/oz. Dugbe shows strong economics at higher gold price assumptions, thus the project maintains its value as an option on higher gold prices.

Dudge's re-scoping for a higher grade starter pit (Dugbe F) could reduce the project's stripping

The DFS-optimisation is focusing on the incorporation of the post-PEA resources added (~0.4Moz), the conversion of part of the inferred resources (mainly from the Tuzon and Dugbe F deposits) to the M&I category, while incorporating the new resources resulting from the drilling in Sackor, Dugbe's 3rd satellite deposit. The above could trigger a remodelling of the Dugbe F and Tuzon deposits and could result in a reduction in the project's strip-ratio (below the PEA's LoM average strip ratio of 4.37:1).

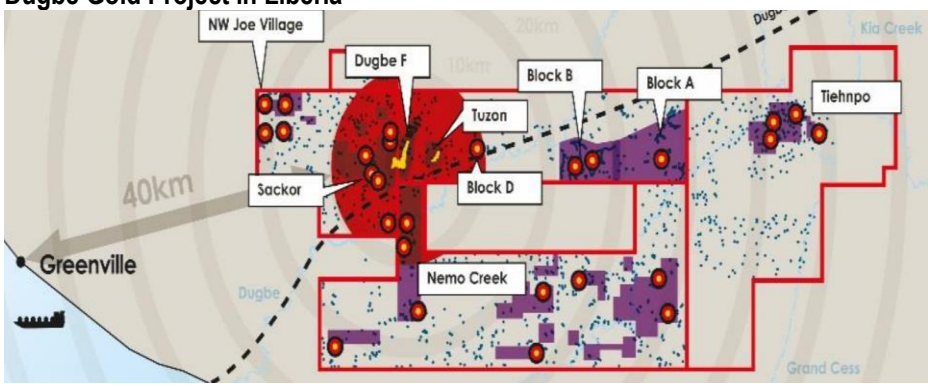
Near-by hydro-electric plant could drop Dubge's cash cost by as much as 28%

On that basis, the recently published (August 31) PFS for the near-by (10km) hydro-electric plant shows the potential for significant power cost savings if the plant was to be build. The power PFS, which was fully funded by the IFC Infraventures, resulted in a ~80% lower theoretical unit power cost of US$0.05-0.06c/kWh (by spreading capex and opex over a 20-year period) from US$0.28c/kWh in the DFS (rented diesel gensets). In turn, that could drop Dubge's cash cost by as much as 28%, as power costs account for ~35% of the project's operating costs.

We expect that the pace of development for Dugbe will remain slow until HUM achieves successful commissioning and steady state production from Yanfolila. In the meantime, HUM has signed a 25-year MDA agreement with the government of Liberia (July 2015) and its President which is now expected to be passed into law by the Legislature. We note that Dugbe, on top of the 3% government royalty, carries a 2% net smelter revenue royalty to Anglo Pacific signed in December 2012 in return of US$15m (fully drawn since March 2014). The tax rate for the project has been set at 25%, while the government retains a free-carried 10% interest in the project.

In anticipation of the DFS optimisation completion, we do not value Dugbe on a discounted cash flow basis, but we conservatively apply an EV/oz of resource multiple of US$7.0/oz (in-line with HUM's current resource multiple), well-below our gold universe average of US$48.1/oz. That values Dugbe at ~US$30m.

Dugbe Gold Project in Liberia



Source: Hummingbird Resources

Hummingbird's mineral resources and reserves

Project	Category	Tonnage (Mt)	Grade (g/t)	Contained gold (koz)
Yanfolila	Probable	7.04	3.14	709.8
Dugbe	Probable	-	-	-
Total reserves[1]		**7.04**	**3.14**	**709.8**
Yanfolila (KE, KW)[2]	Indicated	12.71	2.86	1,168.7
Yanfolila (KE, KW)[2]	Inferred	2.03	2.23	145.4
Yanfolila (GW, SW, SE)[3]	Indicated	3.65	2.16	252.8
Yanfolila (GW, SW, SE)[3]	Inferred	0.26	2.44	20.6
Yanfolila (Gonka, Kabaya South - SAMREC (2009))[4]	Indicated	1.37	1.42	62.4
Yanfolila (Gonka, Kabaya South - SAMREC (2009))[4]	Inferred	2.15	2.34	162.0
Gold Fields 2013 (GW, SW, Kabaya South, Badogo – non-compliant)[5]	Inferred	6.32	1.92	390.7
Dugbe (Tuzon)[6]	Indicated	41.8	1.51	2,031
Dugbe (Tuzon)[6]	Inferred	10.2	1.32	435
Dugbe (Dugbe F)[6]	Inferred	43.0	1.28	1,760
Total Indicated		**59.53**	**1.84**	**3514.9**
Total Inferred		**63.96**	**1.42**	**2913.7**
Total resources*		**123.49**	**1.62**	**6428.6**

Source: Mirabaud Securities *resources shown as inclusive of reserves

[1]reserves were calculated using a 0.33g/t cut-off and a US$1,100/oz gold price

[2]KE and KW resources were calculated on March 2014 using a 0.70g/t cut-off grade and a US$1,500/oz gold price

[3]GW, SW and SE resources were calculated on December 2014 using a 0.6-0.8g/t cut-off grade and a US$1,500/oz gold price non-code compliant

[4]Gonka and Kabaya South resources were calculated on March 2013 by Goldfields in accordance with the SAMREC 2009 code using a US$1,650/oz gold price

[5] non-compliant (either JORC or SAMREC) resources calculated by Goldfields as part of their November 2013 Yanfolila de-risking study (cut-off grade of 09g/t)

[6] Tuzon resources were calculated on March 2014 using a US$1,500/oz gold price and a cut-off grade of 0.5g/t, at US$1,200/oz gold price Tuzon resources drops to 2.1Moz

[7] Dugbe F resources were calculated on March 2013 using a gold price of US$1,500/oz and a cut-off grade of 0.5g/t

Exploration upside potential in Mali and Senegal

Hummingbird has recently (29 June) announced its intention to merge its non-core exploration assets in Mali with those of Kola Gold (a private-owned, African-focused mineral exploration and development company) into a newly formed company called Cora Gold (57:43 split between Kola and HUM). The latter will double HUM's exploration presence in Mali while giving access to a promising, under-explored area such as southeast Senegal (close to the borders of Mali).

The Memorandum of Understanding signed between the two companies allows HUM the option to buy-back the four properties neighbouring with Yanfolila in case of a positive exploration campaign. More importantly, these targets are located within "truckable" distance (20-50km southwest) of the Yanfolila project and thus any high-grade discoveries in that area could potentially be processed at HUM's plant.

Management

Russell King – Non-executive chairman

Russell is currently the Senior Independent Non-Executive Director of Aggreko plc, the FTSE 100 temporary power generation company. Prior to this Russell served as Chief Strategy Officer at Anglo American. Between 2010 and 2013 he was a senior advisor to RBC Capital Markets on Metals and Mining. Russell is also a Non-Executive Director of Interserve plc, Sepura plc and Spectris plc.

Daniel (Dan) Betts – managing director

Daniel founded Hummingbird in November 2005. After graduating from Nottingham University he worked for Accenture Management Consultants until he joined the Betts family business in 2000. Founded in 1760, the family business is the oldest privately owned gold bullion smelters and refiners in the country, and it has a long history of trading across the world and dealing in all areas of the precious metal industry. Whilst working for the Betts family business Daniel established a number

of natural resource based businesses in Uganda, Namibia, Sierra Leone, Mauritania and Peru, before starting Hummingbird Resources in 2005.

William Cook – operations director

William is a former officer of the British Army having served in the Light Infantry. Following his army service he worked in the security sector, for companies such as Control Risks, Rubicon and Salamanca Risk Management before joining Hummingbird. In his capacity as operations director he has been responsible for the establishment and ongoing running and development of Hummingbird's operations in Liberia, as well as more recently for the general oversight of the DFS and ESIA.

Thomas Hill – finance director

Thomas joined the Company as Chief Financial Officer in September 2010 and was appointed as Finance Director in July 2012. Prior to this Thomas was a senior manager within BDO LLP's natural resources department. He has a metallurgy, economics and management degree from Trinity College, Oxford.

Stephen Betts - non-executive director

David Pelham - non-executive director

Matthew Idiens - non-executive director

Robert Monro – head of business development

Shaun Bunn – technical director

Wayne Galea – project manager (Yanfolila)

Summary operating and financial estimates

FY to Dec. 31		2016F	2017F	2018F	2019F	2020F
Production						
Ore milled	Mt	-	-	1.2	1.2	1.2
Head grade	g/t	-	-	3.6	3.3	3.0
Total Au production (100%)	**koz**	-	-	126	120	108
Average realised Au price	koz	1,280	1,292	1,246	1,200	1,200
Cash cost (excluding royalties)	US$/oz	-	-	650	528	591
Total cash cost	US$/oz	-	-	707	595	658
All-in sustaining cash cost	US$/oz	-	-	733	639	667
Profit and loss						
Gross revenue	US$m	-	-	157	144	129
Cost	US$m	-	-	(93)	(74)	(75)
EBITDA	US$m	(3)	(4)	64	70	55
EBIT	US$m	(3)	(4)	54	59	44
Taxation	US$m	-	-	(5)	(9)	(5)
Net profit	US$m	(3)	(5)	46	48	38
Cash flow						
Cash-flow from operations	US$m	(4)	(17)	57	58	48
Cash-flow from investing activities	US$m	(11)	(72)	(3)	(5)	(1)
Cash-flow from financing activities	US$m	97*	-	-	-	-
Year-end cash balance	US$m	90	1	54	107	154
Ratios						
EV/EBITDA	x	na	na	0.8	0.7	0.9
EPS	x	na	na	0.13	0.14	0.11
P/E	x	na	na	2.4	2.3	3.0

Source: Mirabaud Securities estimates £1 = US$1.31

*comprising ~US$72m net proceeds of the recent equity raise, US$40m from a senior debt facility and US$15m for the repayment of the outstanding bridge facility with Taurus

RECOMMENDATIONS HISTORY

Hummingbird Resources

Market index FTSE AIM Basic Resources

Date	Market Index	Stock Price (p)	Valuation (p)	Opinion
03-Feb-2011	9,935	167.5	224	Speculative Buy
09-May-2011	8,804	156.5	196	Speculative Buy
26-Sep-2011	6,911	156.5	195	Speculative Buy
13-Dec-2011	6,719	125.5	200	Speculative Buy
01-Feb-2012	7,263	157.5	299	Buy
22-Sept-2016	2,436	25.0	43.6	Buy

RATINGS, CERTIFICATION AND DISCLOSURE

RATINGS SYSTEM

BUY: The stock is expected to generate absolute positive price performance of over 100% during the next 12 months.

HOLD: The stock is expected to generate absolute price performance of between 10% positive and 10% negative during the next 12 months.

SELL: The stock is expected to generate absolute negative price performance of over 10% during the next 12 months.

RISK QUALIFIER: Speculative: Stocks bear significantly higher risk that typically cannot be valued by normal fundamental criteria. Investments in the stock may result in material loss.

The ratings are applicable to all research produced after 1st January 2016.

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Hummingbird Resources (HUM LN): 2, 3, 11 & 12

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