

# Houndé gold mine on track to be flagship low-cost mine for Endeavour Mining

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TSX-listed West African gold producer Endeavour Mining is on track to bring its Houndé gold project in Burkina Faso into production in the fourth quarter of 2017. Once in production, Houndé, with its robust grade and low cash cost, is expected to become a flagship low-cost mine for Endeavour Mining. **Chantelle Kotze** writes.

## **Endeavour Mining expects to produce between 600 000 oz and 640 000 oz of gold from its five West Africa-based mines at low AISC of US\$860 - 905/oz in 2017.**

Speaking at the Investing in African Mining Indaba 2017, Endeavour Mining CEO and President Sébastien de Montessus noted the company's key objectives over the next few years, which include maximising cash flow generation, ensuring long life assets and producing [gold](#) at the lowest cost possible – goals that will be realised through the company's development projects.

These development projects include the establishment of the Houndé mine in [Burkina Faso](#) and the Ity carbon-in-leach (CIL) project in [Côte d'Ivoire](#), which forms part of an expansion of its Ity mine that has already been in operation for over 20 years.

By 2019, Endeavour Mining aims to produce more than 900 000 ozpa of gold across its West African operations at an all-in sustaining cost (AISC) of below \$800/oz and to ensure that its portfolio of mines each have a mine life of at least 10 years.

Endeavour Mining is steadfast in its belief that the establishment of the Houndé project will help lift group production and lower average AISC by 2018, while the construction of the Ity CIL project, expected to come on stream in 2019 and extend mine life by 14 years, would deliver average production of 144 000 ozpa at an AISC of \$542/oz at least over the first nine years, based on current reserves.

## **Houndé on track for first gold by year end**

Ranking among [West Africa's](#) highest quality development projects, over its initial 10-year mine life based on reserves Houndé is expected to produce an average of 190 000 oz at an AISC of \$709/oz. In its first 4 years, Houndé's average annual production is expected to come in at 235 000 ounces at an AISC of US\$610/oz.

The Houndé exploration tenement covers more than 1 075 km<sup>2</sup> within Burkina Faso's highly prospective Birimian Greenstone belt about 250 km south west of Ouagadougou, the capital city.

Construction at the Houndé project began in April 2016 and is progressing as planned, with more than 65% of the project construction complete, only a year after breaking ground.

Work on the processing plant, which consists of a 3 Mtpa gravity circuit/CIL plant with SABC comminution circuit, entailed detailed engineering of

the processing facility along with the design HAZOP, which was complete ahead of schedule in November 2016. The CIL ring beam concrete pour was achieved in early August 2016, and the SAG and ball mill first lift on both plinths was completed by year-end.

In terms of additional infrastructure, construction of the 38 km long, 91 kV overhead power line is more than 60% complete, with first power from Burkina Faso power utility Sonabel scheduled for August 2017. Moreover, construction of a 26 MW backup power station has been awarded and is on schedule to be operational in the third quarter of 2017. The tailings storage facility is also progressing ahead of schedule and is nearly 60% complete.

Moreover, the construction of the water harvest dam decant tower is complete, with water already being pumped to the water storage dam two months ahead of schedule and construction of the 300 person permanent accommodation village is nearing completion.

There are more than 2 000 personnel including contractors currently working on site, of which more than 94% are Burkinabe. Notably, over 2.7 million man-hours have been worked without a lost-time incident, highlighting the company's focus on safety.

The company has already committed close to 100% of the total \$328 million capital expenditure with commissioning expected to begin in Q4, with first gold expected soon thereafter.

Open pit pre-strip mining at the main Vindaloo open pit, adjacent the processing facility, also commenced in late 2016. The remaining Komatsu mining fleet is expected to arrive shortly to begin mining.

The land compensation process has been successfully completed and resettlement commenced in early 2017, with 200 people expected to be resettled.

### **Ity a long-term growth driver**

De Montessus believes the Ity mine complex will become another flagship asset for the company in light of the CIL project which is expected to give a second life to the Ity mine with an added 14-year mine life based on current reserves.

The feasibility study into the project, undertaken by engineering firm Lycopodium in November 2016, outlined the potential for the Ity CIL project to deliver average production of 114 000 ozpa over a 14 year mine life at an AISC of \$603/oz, based on current reserves, which have increased to 1.9 Moz, up 31% compared to in the pre-feasibility study.

Ity is 80%-owned by Endeavour Mining, 10%-owned by the Drogba Group, with the remaining 10% owned by the government of Côte d'Ivoire.

The project, which is expected to be completed in 2018, will be comprised of multiple open pit mines and existing decommissioned heap leach stockpiles, and will include the construction of a new 3 Mtpa gravity circuit/ CIL plant as an alternate processing route to the current heap leach process, for notably the new discoveries made in recent years.

"We believe this project aligns very well with our key strategic criteria for project development and is another example of our ability to identify and advance internal development opportunities that crystallise long-term value for our shareholders," De Montessus notes.

The Ity CIL project, which has a capital cost estimate of \$307 million with a 20 month construction period, has the potential to be a long-life, low-cost mine with exploration upside that can add materially to Endeavour Mining's overall production and be a positive cash flow generator, while lowering the group AISC profile.

Furthermore, De Montessus believes the greater Ity area also offers some of the most promising exploration potential within its portfolio and along the prolific Birimian Greenstone Belt. Upside potential remains with further conversion of known resources, inclusion of new discoveries, and on-going exploration on several near-mine targets.

The company's available financing and liquidity will allow Endeavour Mining to smoothly transition its in-house construction team currently working on its Houndé project to the construction of the Ity CIL project. In addition, the company will also explore the potential and trade-offs to run the CIL and heap leaching operations in parallel for the first few years.

### **Exploration focus – discovering the next mine**

Endeavour Mining is strategically positioned to become one of the largest producers with the largest exploration package in both Côte d'Ivoire

(4 000km<sup>2</sup>) and Burkina Faso (largest foreign investor), which host +50% of the Birimian Greenstone Belt.

## Houndé is not only destined to become Endeavour Mining's fifth operating mine in the region but also its second in Burkina Faso

Endeavour Mining's ambition is to find between 10 Moz – 15 Moz of indicated resources over the next five years, and is prepared to commit between \$35 million to \$40 million each year for exploration, says De Montessus.

“We expect our big discoveries to stem from the Ity and Houndé mines. At Ity we are focused on identifying new targets close to the plant to extend heap leach and enhance CIL project, while at Houndé, we already have a 10 year mine life with potential to significantly extend the mine life of the project through new discoveries.”

### Houndé investment highlights

- Expected mine life of +10 years
- Capital expenditure of US\$328 million inclusive of \$47 million for owner-mining Komatsu fleet. Of the capital, a total of approximately \$102 million was spent in 2016 with a \$180 million spend remaining for 2017
- After-Tax Project NPV (5%) estimated at \$342 at a \$1 250/oz gold price
- After-Tax Project IRR estimated at 32% at a US\$1 250/oz gold price
- Payback period of 2.2 years
- Short-term Gold Revenue Protection Strategy put in place when the Houndé construction was launched in April 2016 will end in June 2017

Remaining gold collar programme covers a total of approximately 187 000 oz, representing approximately 60% of Endeavour's total estimated gold production for the period, with a floor price of \$1 200/oz and ceiling price of \$1 400/oz

## Gold production at a glance

In 2016 Endeavour Mining produced 584 000 oz of gold at a record AISC of US\$884/oz achieving both its production guidance of 575 000 oz – 610 000 oz and its AISC guidance of \$870/oz - \$920/oz and producing 13% more gold compared with 2015.

The company's production guidance in 2017 is to produce between 600 000 oz – 640 000 oz of gold (excluding Houndé) at an AISC of \$860-905/oz as improvements at Karma in Burkina Faso and Nzema are expected to more than compensate for Agbaou returning to a normalised production level after a record-breaking 2016.

## Maximising cash flow generation

In 2016, Endeavour Mining deleveraged its balance sheet and reduced its net debt to \$26 million by the end of the year. More importantly, Endeavour Mining has significant liquidity sources in the order of \$334 million, in addition to its strong cash flow from the operations, which is expected to generate \$150 million of free cash flow in 2017.

Feature image caption: Houndé is expected to produce an average of 190 000 oz of gold its first four years of production.

*All images courtesy of Endeavour Mining*

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