

***Inside Freeport McMoRan: major goals, and last quarter's progress.***

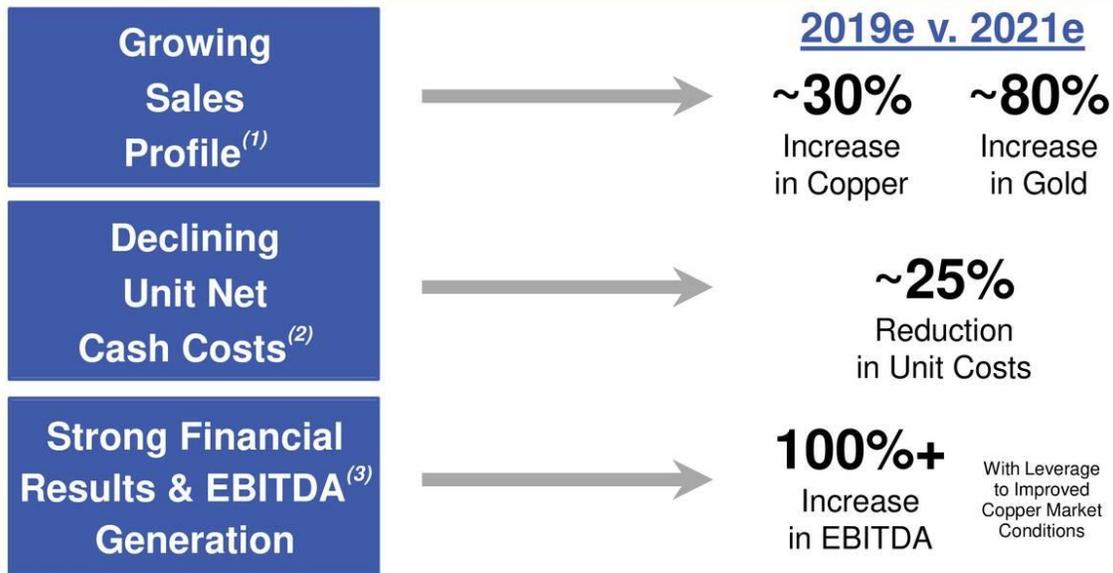
***Aug. 1, 2019***

We are 6 months into Freeport's 2-year schedule for changing mine operations at Grasberg, its large Indonesian copper and gold mine, and things are progressing smoothly. 2019 is a trough year for copper and gold production for the company as it develops its underground block cave, rather than mining from an open pit. Naturally, quarterly sales dropped 31% from a year ago but were very much in line with expectations. Revenue dropped not only because of lower volumes, but also a lower copper price than a year ago, as customers are wary of the outcome of both the trade dispute and of China's economic slowdown, so demand is being held at bay temporarily.

Highlights from the quarter:

- Extension of open pit mining through at least September. While developing the underground block cave, Freeport has been mining every last bit of copper from the open pit. Management describes it as a "surgical" operation, for example, reducing roads from 50m to 40m wide and mining the difference. Freeport originally didn't expect to get any copper out of the open pit after 2018, so an additional 9 months of production is an unexpected gift.
- Higher than expected production in the Americas. Lone Star, a new project in Arizona, remains on track for first production by the end of the year, and can add 200 million pounds of copper a year once at full production.
- Utilization of data analytics and AI. Freeport tested out this technology on its Bagdad mine in Arizona at the beginning of the year. The technology essentially provides mine operators with instantaneous data on how to mine more efficiently and prevent bottlenecks. In the 6 months it has been working in Bagdad, it has created 10-15% more production at 10-15% less cost. Freeport plans to bring this technology to all of its American mines and now expects an additional 200 million pounds of copper per year as a result.

# Executing The Plan



## Value Creation for Shareholders

(1) Based on estimated copper and gold sales of 3.26 bn lbs and 0.8 mm ozs in 2019e, and 4.2 bn lbs and 1.5 mm ozs in 2021e.  
(2) Assumes consolidated unit net cash costs for 2019e of \$1.75/lb and ~\$1.30/lb in 2021e. 2021e assumes ~30e/lb unit net cash cost for Indonesia following the underground ramp-up.  
(3) Based on estimated EBITDA of ~\$2.8 bn in 2019e and ~\$6 bn in 2021e based on \$2.75/lb copper.  
e = estimate. See Cautionary Statement.

The slide above shows how the big picture for Freeport remains its growth potential in 2021 and beyond once it begins fully producing from the underground portion of Grasberg. It is hitting all its development goals on time or ahead of schedule and extracted its first ore from the block cave this past quarter. While this 6-month progress has been very good, so we might naturally expect the next 18 months to go just as smoothly, the reality of copper mining is that you cannot expect perfection in development plans. Very recently, Rio Tinto, another large copper, gold, and silver miner announced that its own block cave development at a site in Mongolia hit a snag due to difficult and “unstable” ground conditions—which means “cave ins.” This snag could add an extra \$1.9 billion on to a \$5.3 billion dollar project and delay production by up to 2.5 years. But Freeport’s early progress through its own 2-year transition period has been solid enough to give the company confidence in its remaining timeline and production goals.

Rio Tinto’s development problem also highlights a key fact about the copper industry: it is extremely hard and takes an extremely long time to develop new sources of copper. Global inventories remain at low levels. Freeport remains on track to create impressive growth in new production within 18 months, while continuing to lower its operating costs. The signs point with near certainty towards a bright future—even though the market won’t yet look that far ahead in valuing its stock. We are certain that will change.

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