



# IVANHOE MINES

N E W   H O R I Z O N S

September 2018

# Forward-looking statements & Qualified Person

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Certain statements in presentation constitute “forward-looking statements” or “forward-looking information” within the meaning of applicable securities laws, including, without limitation, the timing and results of: (i) statements regarding the ongoing development and exploration work at the Kamoa-Kakula Project, including drilling, decline development, and feasibility, pre-feasibility (PFS) and preliminary economic assessment (PEA) studies; (ii) statements regarding the ongoing development work, including shaft sinking, and the definitive feasibility study (DFS) at the Platreef Project; and (iii) statements regarding ongoing upgrading and development work and the PFS at the Kipushi Project. As well, the results of the PFS and PEA of the Kamoa-Kakula Project, the DFS of the Platreef Project, and the PFS of the Kipushi Project constitute forward-looking information, and include future estimates of internal rates of return, net present value, future production, estimates of cash cost, proposed mining plans and methods, mine life estimates, cash flow forecasts, metal recoveries, and estimates of capital and operating costs.

Such statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Ivanhoe, its mineral projects, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Such statements can be identified by the use of words such as “may”, “would”, “could”, “will”, “intend”, “expect”, “believe”, “plan”, “anticipate”, “estimate”, “scheduled”, “forecast”, “predict” and other similar terminology, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. These statements reflect Ivanhoe’s current expectations regarding future events, performance and results and speak only as of the date of this presentation.

In making such statements, Ivanhoe has made assumptions regarding, among other things: the accuracy of the estimation of mineral resources; that exploration activities and studies will provide results that support anticipated development and extraction activities; that studies of estimated mine life and production rates at the Kamoa-Kakula, Kipushi and Platreef projects will provide results that support anticipated development and extraction activities; that Ivanhoe will be able to obtain additional financing on satisfactory terms; that infrastructure anticipated to be developed or operated by third parties, including electrical generation and transmission capacity, will be developed and/or operated as currently anticipated; that laws, rules and regulations are fairly and impartially observed and enforced; that the market prices for relevant commodities remain at levels that justify development and/or operation; that Ivanhoe will be able to successfully negotiate land access with holders of surface rights; and that war, civil strife and/or insurrection do not impact Ivanhoe’s exploration activities or development plans.

Although the forward-looking statements or information contained in this presentation are based upon what management of Ivanhoe believes are reasonable assumptions, Ivanhoe cannot assure investors that actual results will be consistent with these forward-looking statements. They should not be read as guarantees of future performance or results. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements, including, but not limited to, the factors discussed under “Risk Factors” in Ivanhoe’s most recent Annual Information Form.

These forward-looking statements are made as of the date of this presentation and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, Ivanhoe does not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this presentation. Ivanhoe’s actual results could differ materially from those anticipated in these forward-looking statements.

This presentation also contains references to estimates of Mineral Resources. The estimation of Mineral Resources is inherently uncertain and involves subjective judgments about many relevant factors. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including estimated future production from the company’s projects, the anticipated tonnages and grades that will be mined and the estimated level of recovery that will be realized), which may prove to be unreliable and depend, to a certain extent, upon the analysis of drilling results and statistical inferences that ultimately may prove to be inaccurate. Mineral Resource estimates may have to be re-estimated based on: (i) fluctuations in copper, nickel, platinum-group elements (PGE), gold or other mineral prices; (ii) results of drilling, (iii) metallurgical testing and other studies; (iv) proposed mining operations, including dilution; (v) the evaluation of mine plans subsequent to the date of any estimates; and (vi) the possible failure to receive required permits, approvals and licences.

Disclosures of a scientific or technical nature in this presentation have been reviewed and approved by Stephen Torr, who is considered, by virtue of his education, experience and professional association, a Qualified Person under the terms of NI 43-101. Ivanhoe has prepared a NI 43-101 compliant technical report for each of the Kamoa-Kakula Project, the Platreef Project and the Kipushi Project, which are available under the company’s SEDAR profile at [www.sedar.com](http://www.sedar.com). These technical reports include relevant information regarding the effective date and the assumptions, parameters and methods of the mineral resource estimates on the Kamoa-Kakula Project, Kipushi Project and Platreef Project cited in this presentation, as well as information regarding data verification, exploration procedures and other matters relevant to the scientific and technical disclosure contained in this presentation in respect of the Kamoa-Kakula Project, Platreef Project and Kipushi Project.





Building what will be  
**③** of the world's  
best mines  
in Southern Africa's  
legendary mineral fields

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## KAMOA-KAKULA

Initial development  
of two mining areas  
on **world's 4<sup>th</sup>-largest**  
copper discovery

Democratic Republic  
of Congo's Central  
African Copperbelt

## PLATREEF

Mine projected to be  
**Africa's lowest-cost producer**  
of platinum-group metals,  
plus nickel, copper & gold

Northern Limb of South Africa's  
Bushveld Complex

## KIPUSHI

**Ultra-high-grade**  
historic mine being  
upgraded to produce  
zinc, copper, silver,  
germanium & lead

D.R. Congo's  
Copperbelt

**September 19, 2018:** Completion of a major strategic equity investment totalling C\$723 million (approximately US\$556 million) in Ivanhoe Mines by CITIC Metal to help advance three world-scale mine-development projects in Southern Africa.



Ivanhoe Mines' Executive Co-Chairman Robert Friedland (above, middle right) and CITIC Metal Group President and newly appointed Co-Chairman Yufeng "Miles" Sun (above, middle left), signed the landmark agreement to complete CITIC's investment in Ivanhoe during a ceremony in Beijing on September 19.

# Key elements of Ivanhoe – CITIC long-term strategic cooperation and investment agreement

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- CITIC Metal invested C\$723 million (US\$556 million), at C\$3.68 per share.
- Zijin Mining exercised its anti-dilution rights at same price to raise an additional C\$78 million (US\$60 million).
- Ivanhoe will use the plus C\$800 million from CITIC and Zijin to rapidly advance its Kamo-a-Kakula, Platreef and Kipushi projects to commercial production.
- CITIC Metal will assist with our project financing for the first phase of development for all three projects.
- Standstill agreement to cap CITIC ownership stake at 19.9% until January 8, 2022.

# A culmination of more than 15 years of a long-lasting and trust-based relationship with CITIC

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**“We are confident that the CITIC Metal Group has the experience, financial resources – and a shared commitment to our objectives – to greatly assist us as we advance our projects to production.”**



**In April 2003**, Robert Friedland, then Chairman of the original Ivanhoe Mines, and Wang Jun (left), then Chairman of CITIC Group, announced the formation of a strategic alliance to pursue mutual interests in mineral exploration, development and production.



# Platreef discovery & mine development

South Africa

**IVANHOE MINES**  
NEW HORIZONS







## **September 2018:**

Lateral development completed on Platreef's first mine-access station on Shaft 1, 750 metres below surface.

Shaft sinking is expected to intersect the upper contact of the Flatreef Deposit at a depth of approximately 783 metres.

***Development work focused on initial production by early 2022.***



Platreef's underground mine development team includes three members from local communities (from left): Nkone Madubana, Learner Sinkers; Katlego Nkwana, Learner Sinkers; and Caroline Dzivhani, Geologist – who recently became fully certified underground miners

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# Platreef's Shaft 2 box cut, with Shaft 1 headframe in the background

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Construction of the box cut and hitch (foundation)  
for Shaft 2 is scheduled to be completed  
in January 2019

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PLATREEF







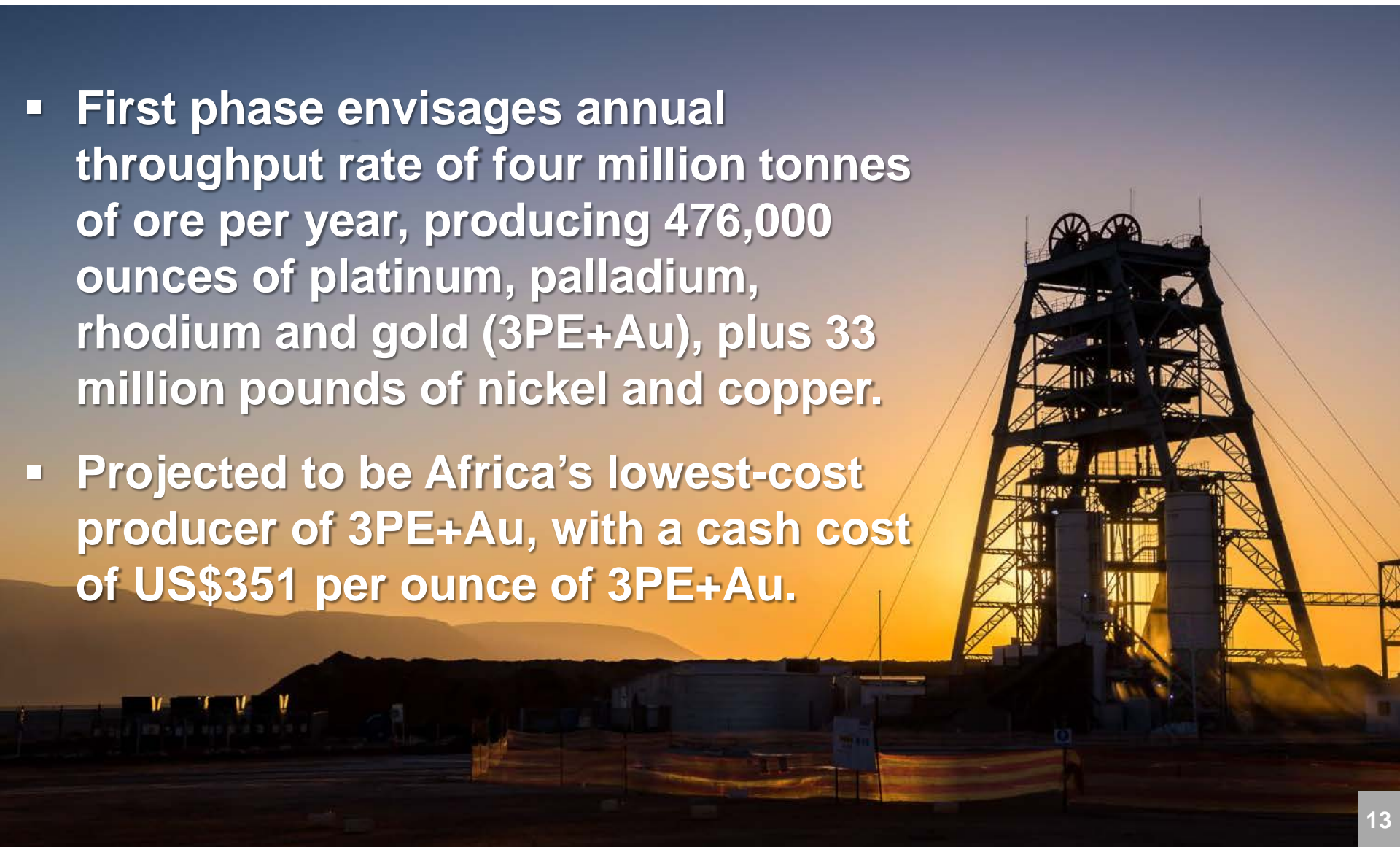
Two cut-away perspectives of Shaft 2's 103-metre-tall concrete headframe and internal permanent hoisting facilities.



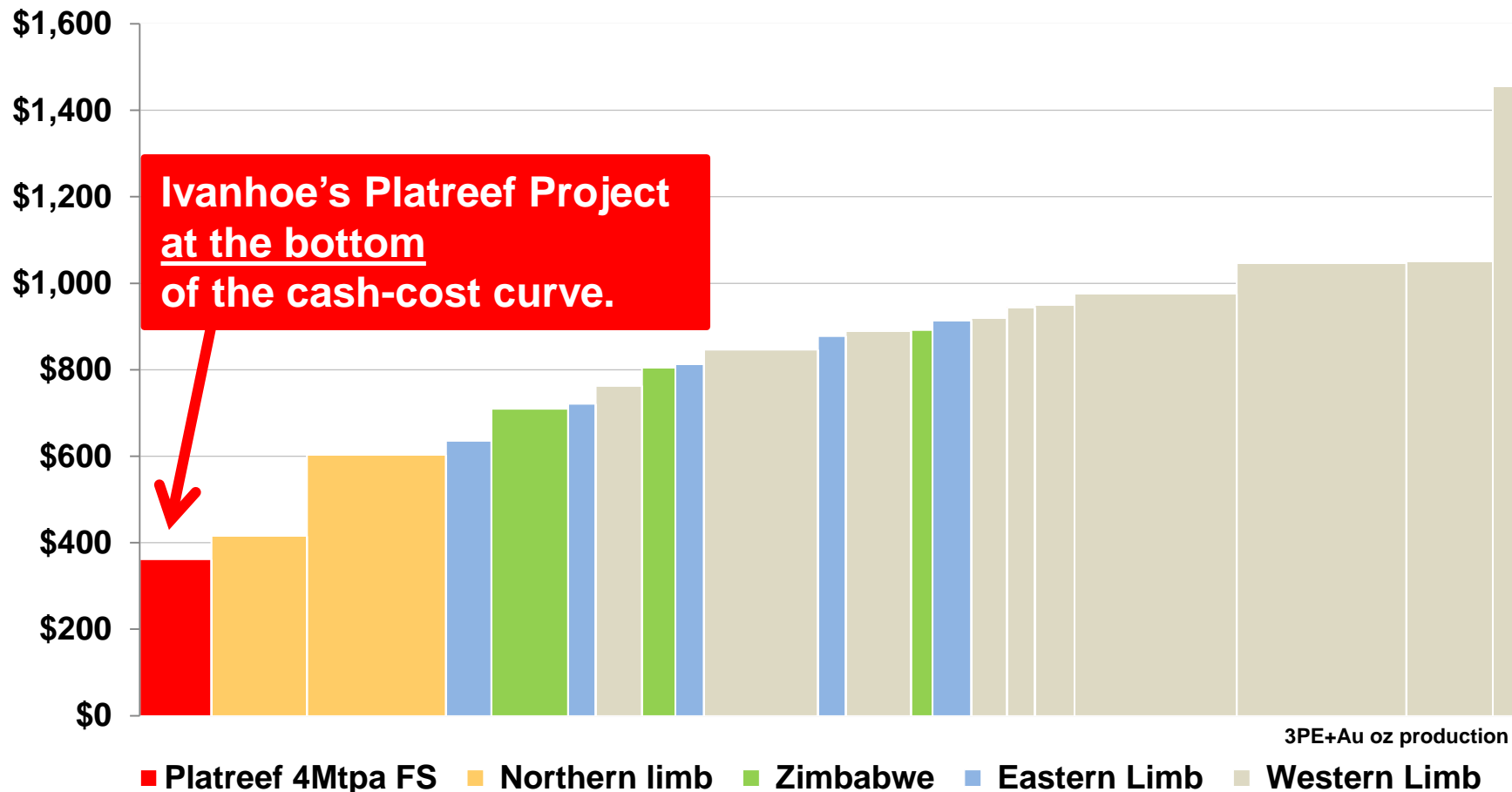
# July 31, 2017: Definitive feasibility study issued for Platreef Project

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- First phase envisages annual throughput rate of four million tonnes of ore per year, producing 476,000 ounces of platinum, palladium, rhodium and gold (3PE+Au), plus 33 million pounds of nickel and copper.
- Projected to be Africa's lowest-cost producer of 3PE+Au, with a cash cost of US\$351 per ounce of 3PE+Au.



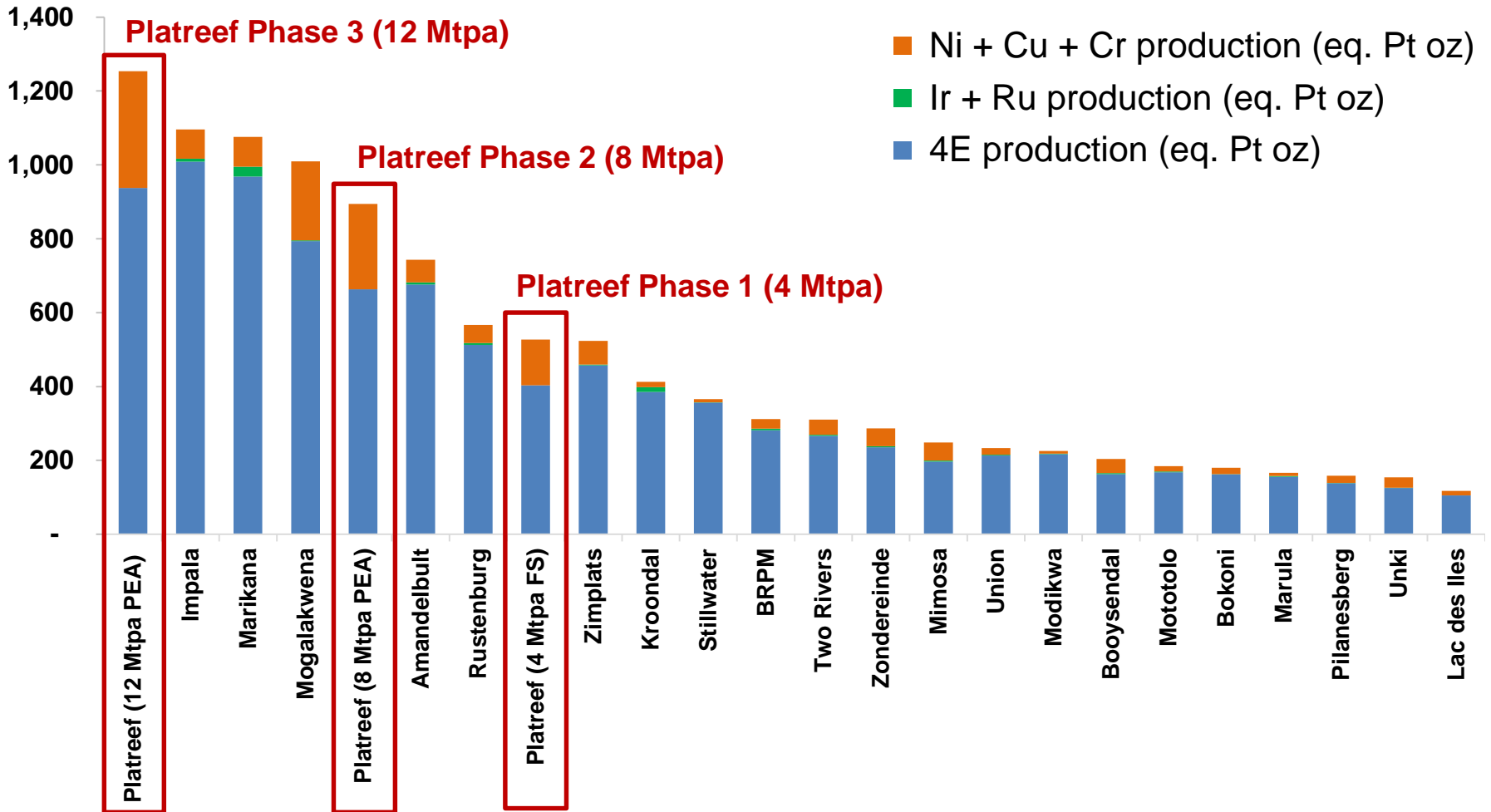
# Platreef's potential US\$351 per 3PE+Au ounce (net of base-metal by-products) at the bottom of the world's cash-cost curve



Source: SFA (Oxford). Data for Platreef Project and Waterberg are based on each project's reported DFS and PFS parameters respectively, and are not representative of SFA's view.



# At 12 million tonnes of ore per year, Platreef would be the world's largest platinum-group metals mine



Source: Production estimates for projects other than Ivanhoe's Platreef Project have been prepared by SFA (Oxford). Production data for the Platreef Project (platinum, palladium, rhodium, gold, nickel and copper) is based on reported DFS and PEA data and is not representative of SFA's view. All metals have been converted by SFA (Oxford) to platinum equivalent ounces at price assumptions of US\$1,076/oz platinum, US\$761/oz palladium, US\$1,235/oz gold, US\$821/oz rhodium, US\$5.07/lb nickel and US\$2.42/lb copper. Note: As the figures are platinum-equivalent ounces of production they will not be equal to 3PE+Au production.

# Platreef's B-BBEE partnership a top performer in South Africa's platinum sector

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**Platreef 26% ownership stake by Black Economic Empowerment (BBE) partners is one of the broadest empowerment transactions ever settled in South African mining.**

- **20%** held by a trust to benefit 20 local host communities, with estimated combined population of 150,000, in the vicinity of Platreef mine.
- **3%** held by a trust for Platreef's historically disadvantaged, non-managerial South African employees.
- **3%** held by a consortium of 187 local entrepreneurial companies and 333 individual shareholders.

**In 2018, Ivanplats reconfirmed its Level 3 status in its fourth verification assessment on a Broad-Based BEE scorecard.**



# Strong and supportive strategic partners

PLATREEF



**Members of Itochu's management team visit  
Platreef in August 2018.**



# Kamoanga & Kakula: Development of two mining areas; ongoing exploration

Democratic Republic of Congo

**IVANHOE MINES**  
NEW HORIZONS





**February 2018:** A new resource estimate established Kamo-a-Kakula as the world's *fourth-largest copper discovery*.

Copper grades at the two adjacent deposits are the highest, by a wide margin, of the world's top 10 copper deposits.

KAMOA-KAKULA



# Indicated Mineral Resources, Kamoa-Kakula Project, February 2018

KAMOA-KAKULA

Category	Cut-off Grade (Cu%)	Tonnes (millions)	Area (Sq. km)	Copper Grade	Contained Copper (kTonnes)	Contained Copper (billion lbs)
Indicated	3.0	396	33.2	4.79%	19,000	41.8
Indicated	2.5	535	44.0	4.25%	22,800	50.2
Indicated	2.0	780	53.8	3.63%	28,300	62.4
Indicated	1.5	1030	62.8	3.17%	32,500	71.7
Indicated	1.0	1340	70.1	2.72%	36,600	80.7

## Notes:

Ivanhoe's Mineral Resources Manager, George Gilchrist, Professional Natural Scientist (Pr. Sci. Nat) with the South African Council for Natural Scientific Professions (SACNASP), estimated the Mineral Resources under the supervision of Dr. Harry Parker and Gordon Seibel, both Registered Members of the Society for Mining, Metallurgy and Exploration (SME), who are the Qualified Persons for the Mineral Resource estimate. The effective date of the estimate is February 23, 2018. Mineral Resources are estimated using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves. Mineral Resources at Kamoa are inclusive of Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. No Mineral Reserves are currently estimated at Kakula.

Mineral Resources at Kamoa are reported using a total copper (TCu) cut-off grade of 1% TCu and a minimum vertical thickness of 3 m. There are reasonable prospects for eventual economic extraction under assumptions of a copper price of US\$3.00/lb; employment of underground mechanized room-and-pillar and drift-and-fill mining methods; and that copper concentrates will be produced and sold to a smelter. Mining costs are assumed to be US\$27/t, and concentrator, tailings treatment, and general and administrative costs (G&A) are assumed to be US\$17/t. Metallurgical recovery for Kamoa is estimated to average 84%. At a 1% TCu cut-off grade, assumed net smelter returns for 100% of Mineral Resource blocks will cover concentrator, tailings treatment, and G&A costs.

Mineral Resources at Kakula are reported using a TCu cut-off grade of 1% TCu and an approximate minimum thickness of 3 m. There are reasonable prospects for eventual economic extraction under assumptions of a copper price of US\$3.00/lb, employment of underground, mechanized, room-and-pillar and drift-and-fill mining methods, and that copper concentrates will be produced and sold to a smelter. Mining costs are assumed to be US\$42/t and concentrator, tailings treatment, and G&A costs are assumed to be US\$18/t. Metallurgical recovery is assumed to average 85% at the average grade of the Mineral Resource. Ivanhoe is studying reducing mining costs using a controlled convergence room-and-pillar method. At a 1% TCu cut-off grade, assumed net smelter returns for 100% of Mineral Resource blocks will cover concentrator, tailings treatment and G&A costs.

Reported Mineral Resources contain no allowances for hangingwall or footwall contact boundary loss and dilution. No mining recovery has been applied.

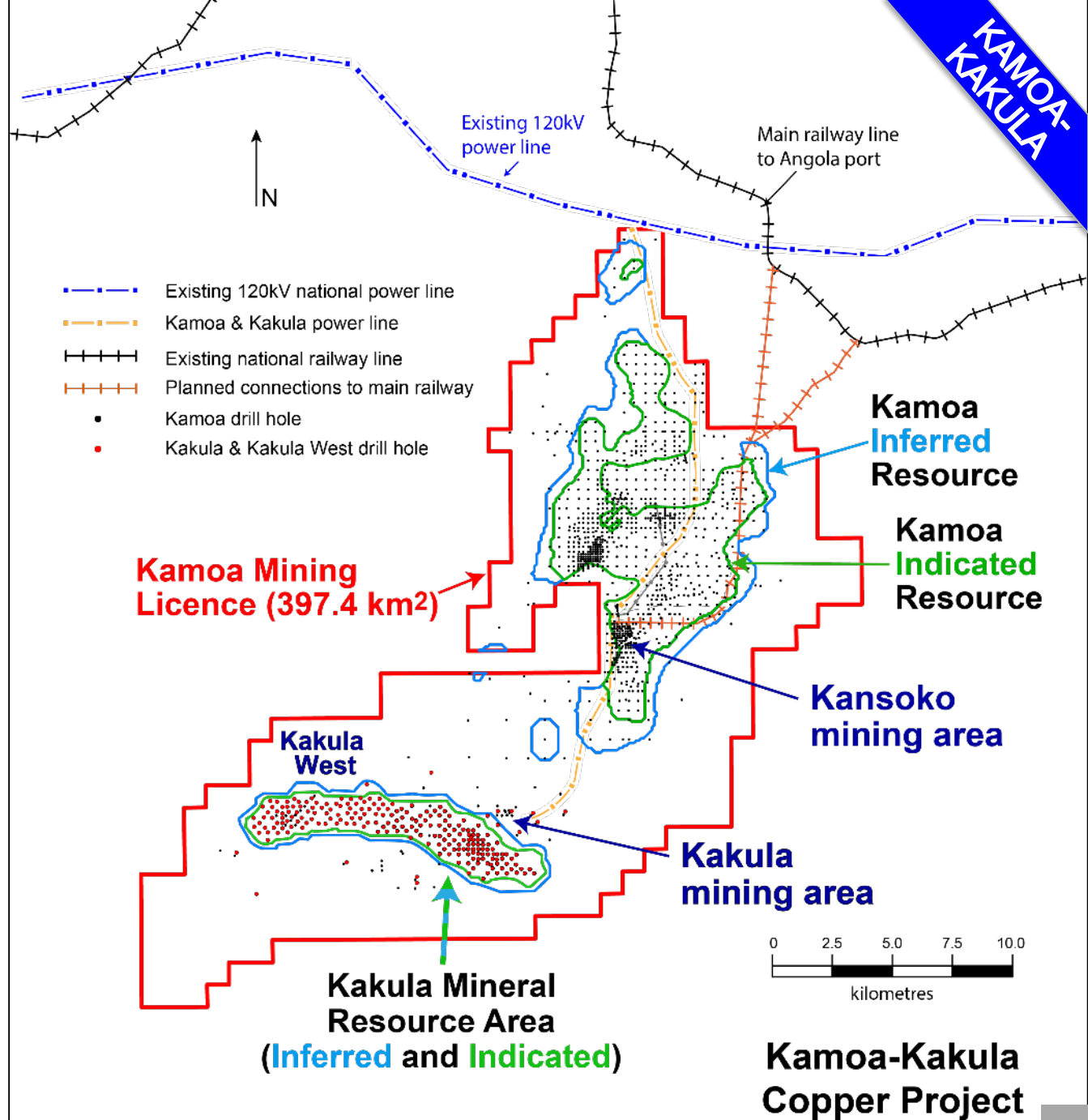
Tonnage and contained-copper tonnes are reported in metric units, contained-copper pounds are reported in imperial units and grades are reported as percentages.

Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.

Resources stated in Tables 1, 2 and 3 are not additive to this table.

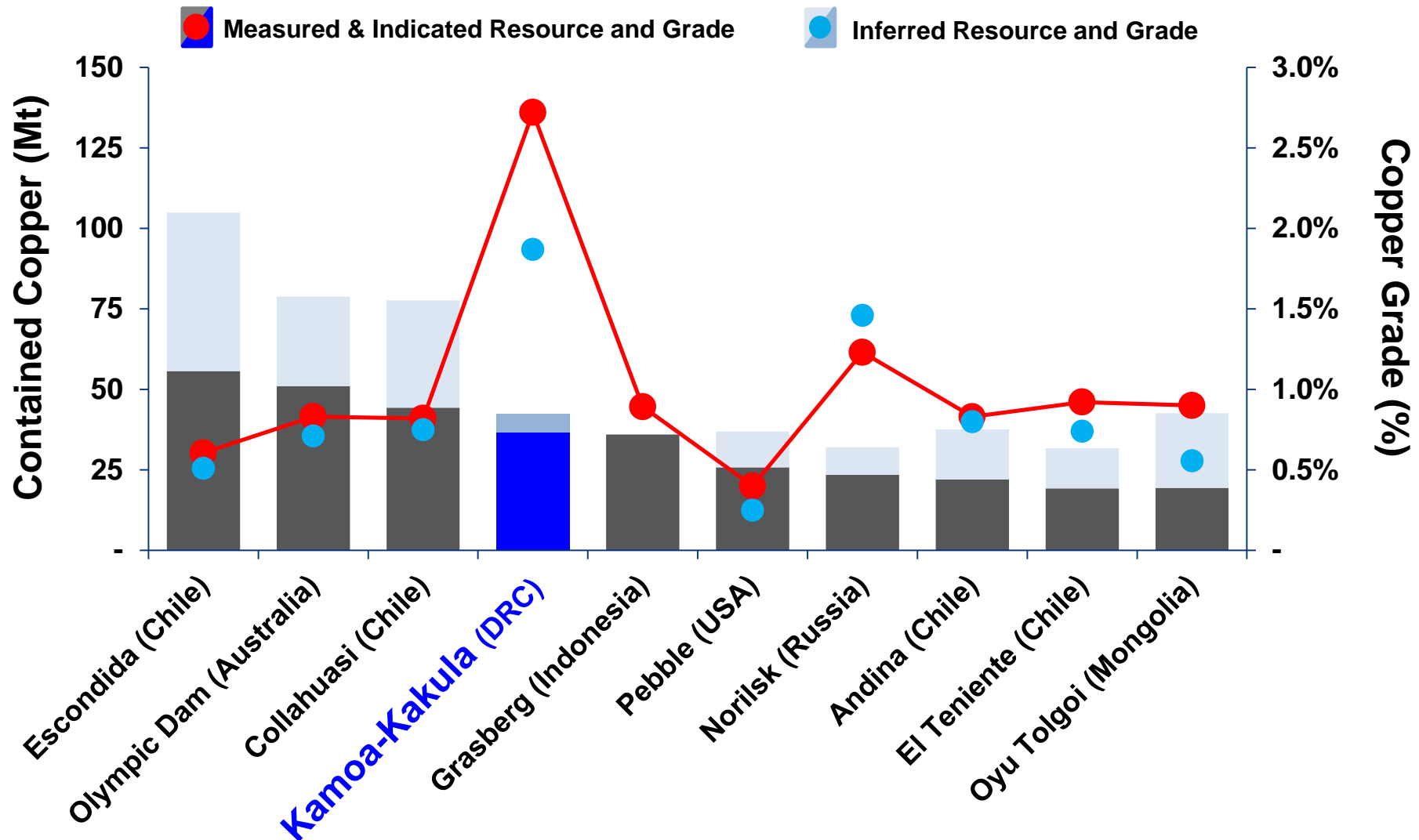


# Kamoa, Kakula and Kakula West Indicated and Inferred Mineral Resource areas, with existing power and rail infrastructure



# Among the world's largest copper deposits, Kamo-a-Kakula also has the highest copper grades

KAMOA-KAKULA



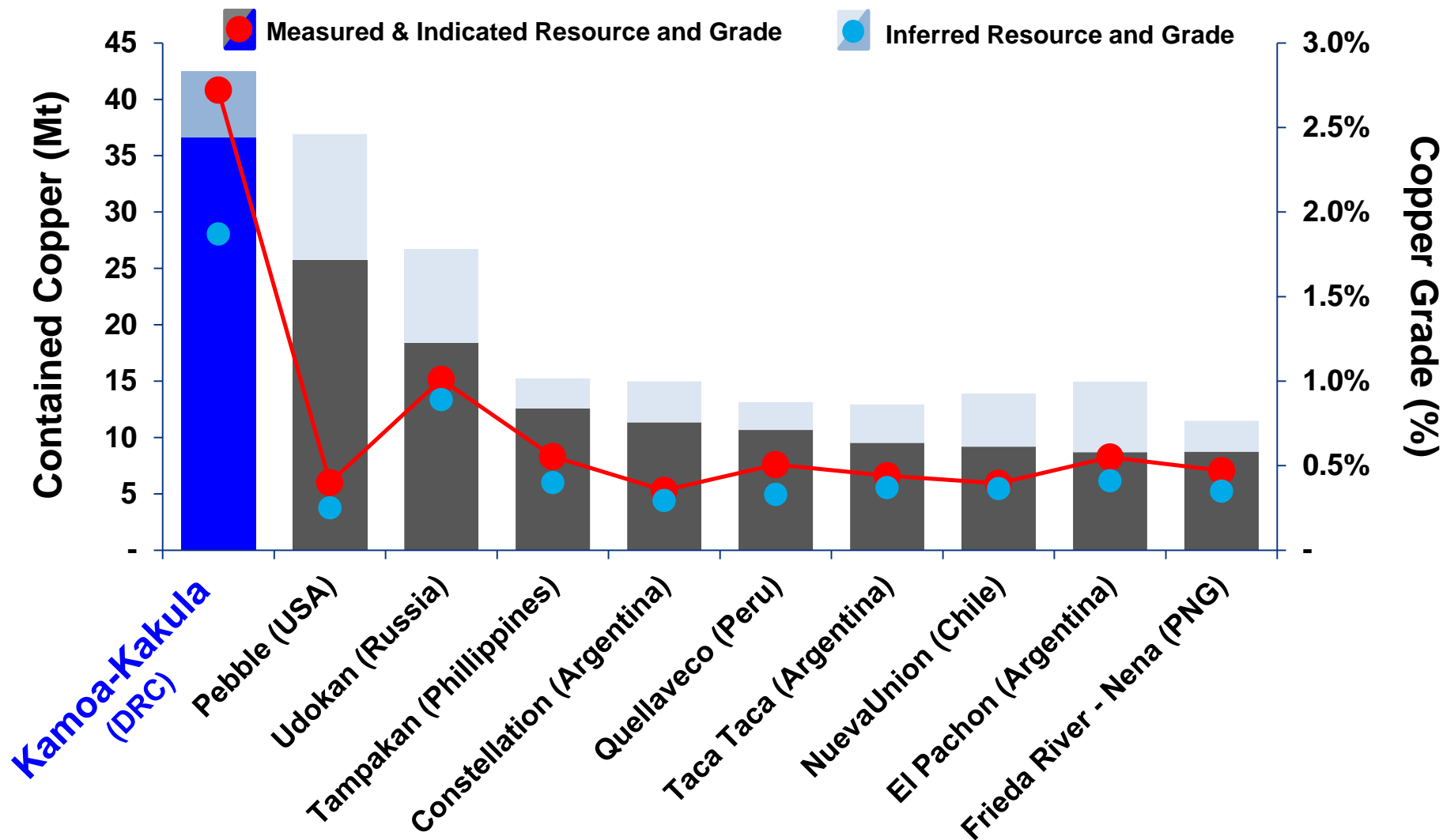
Source: Wood Mackenzie

\*Note: Selected based on contained copper (Measured & Indicated Resources, inclusive of Mineral Reserves, and Inferred Resources), ranked on contained copper in Measured & Indicated Resources.



# Kamoa-Kakula is the largest undeveloped copper deposit in the world

KAMOA-KAKULA

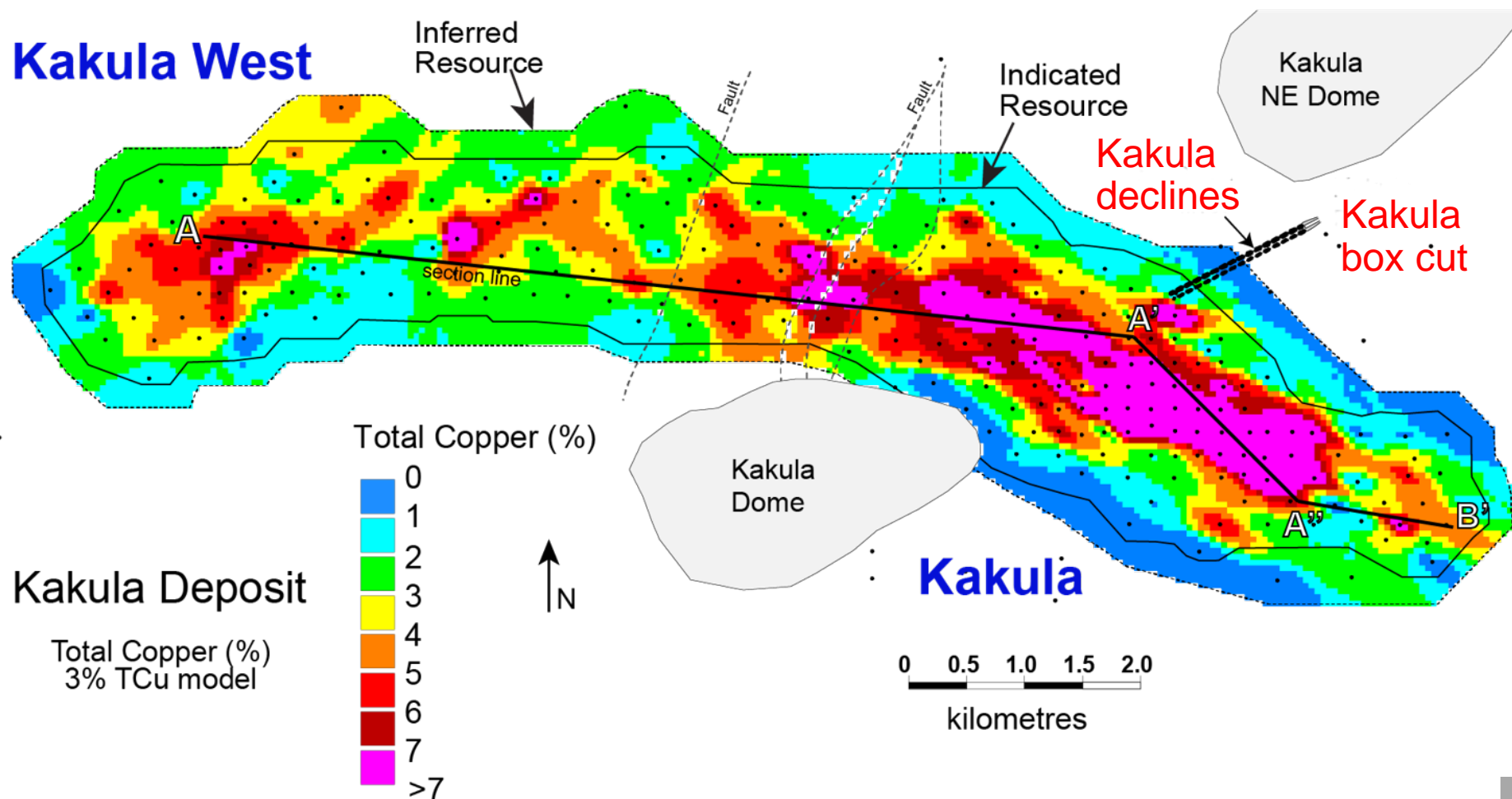


Source: Wood Mackenzie

\*Note: Contained copper in undeveloped deposits (Measured & Indicated Resources, inclusive of Mineral Reserves, and Inferred Resources), ranked on contained copper in Measured & Indicated Resources.

# Kakula and Kakula West discovery areas showing grades of Indicated and Inferred Mineral Resource blocks at a 3% copper cut-off

KAMOIA-KAKULA





# Exploration drilling is continuing to extend the northwestern limits of the Kakula West discovery

KAMOA-KAKULA





# Exploration drilling at the Kamo North area testing the extent of a new zone of copper mineralization

Kamo North was identified in 2017 by the Kamo-Kakula geology team as one of nine high-priority targets located in the untested areas of the Kamo-Kakula Project.





# Extracting mineralized core from Kakula North exploration drilling

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KAMOIA-  
KAKULA

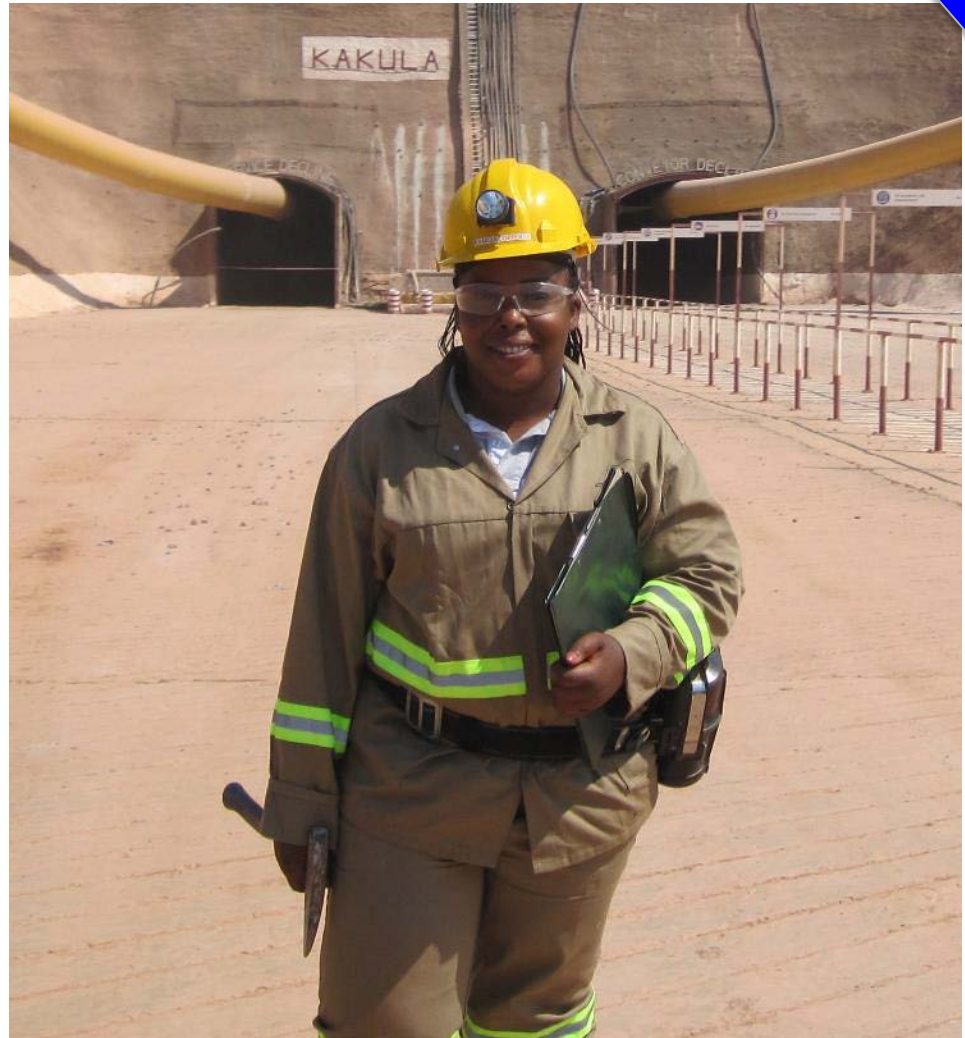




# Development options

*Up to three mines, each  
6 million tonnes a year,  
with central concentrator!  
That would be 18 million  
tonnes of ore each year!*

1. Kakula mining area – being fast-tracked to production with capacity of **6 million tonnes of ore per year (Mtpa)**.
2. Kansoko mining area (at Kamoia) – development ready, also with capacity of **6 Mtpa**.
3. Kakula West and Kamoia North – potential additional mining areas.



Geologist Micheline Kyenge at the portal of Kakula's twin declines.



September 2018: More than **2,700 metres** of underground development now have been completed at Kakula

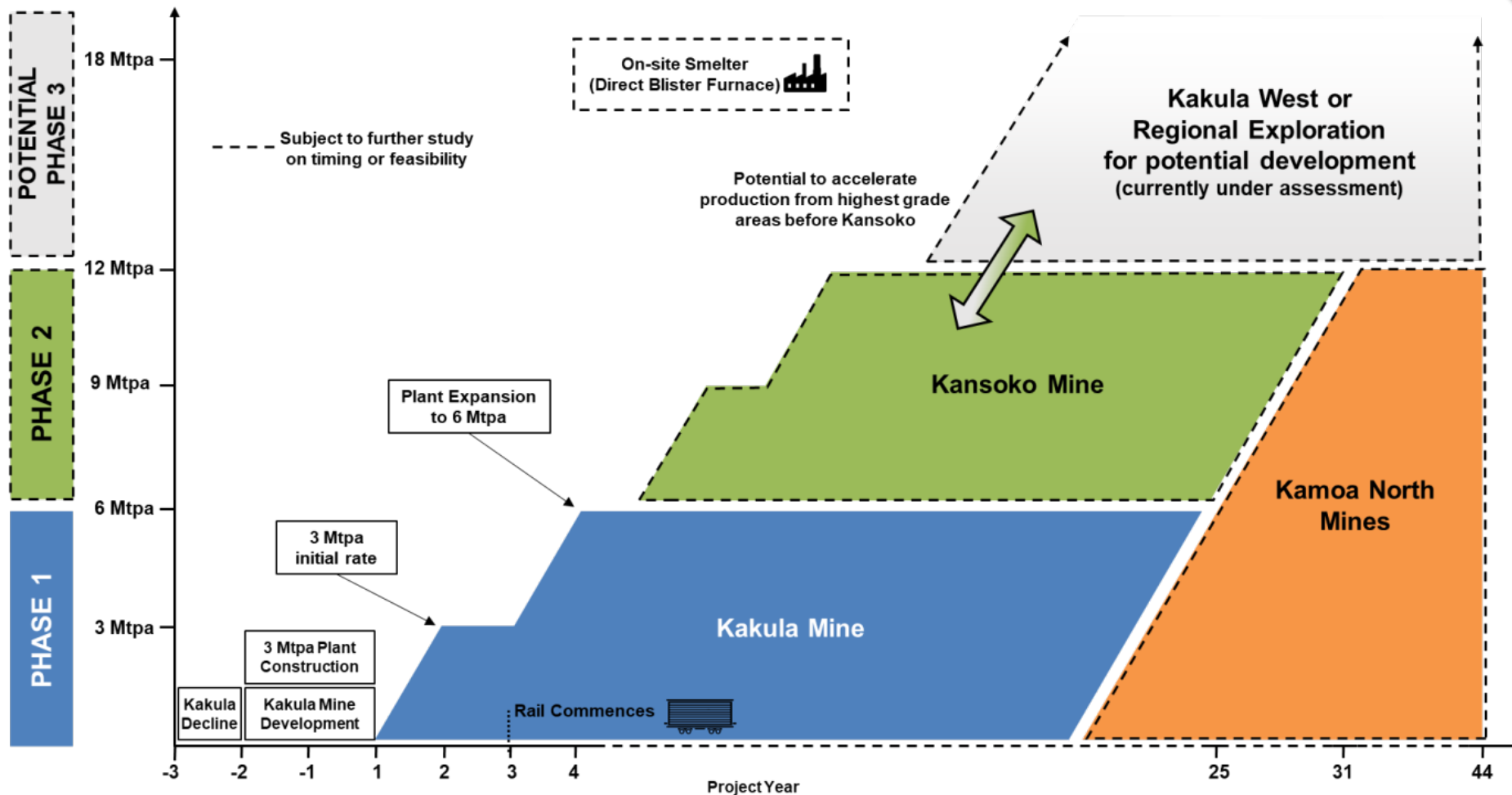
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KAMOA-  
KAKULA



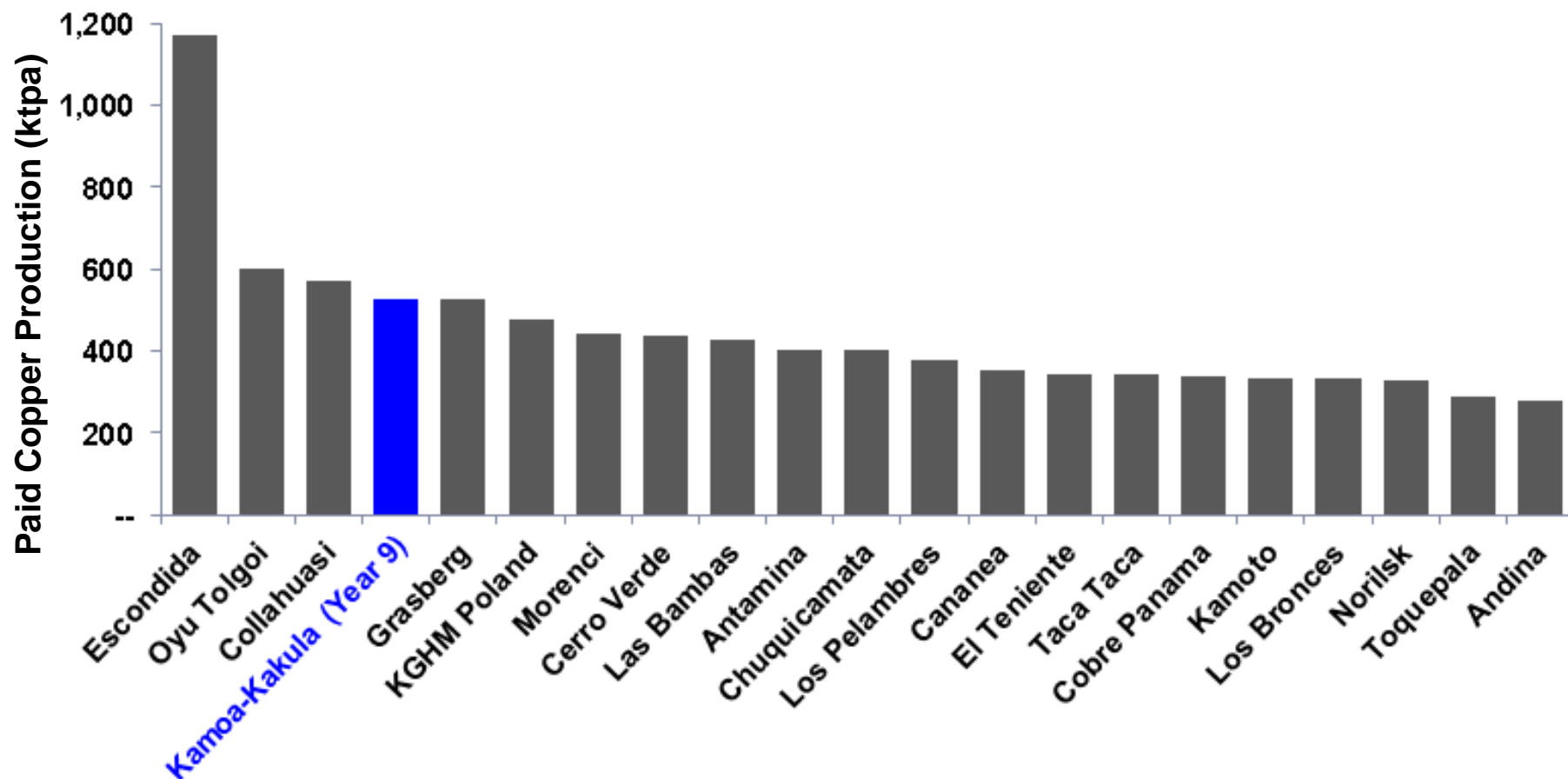
# Kamoa-Kakula PEA long-term development plan

KAMOA-KAKULA





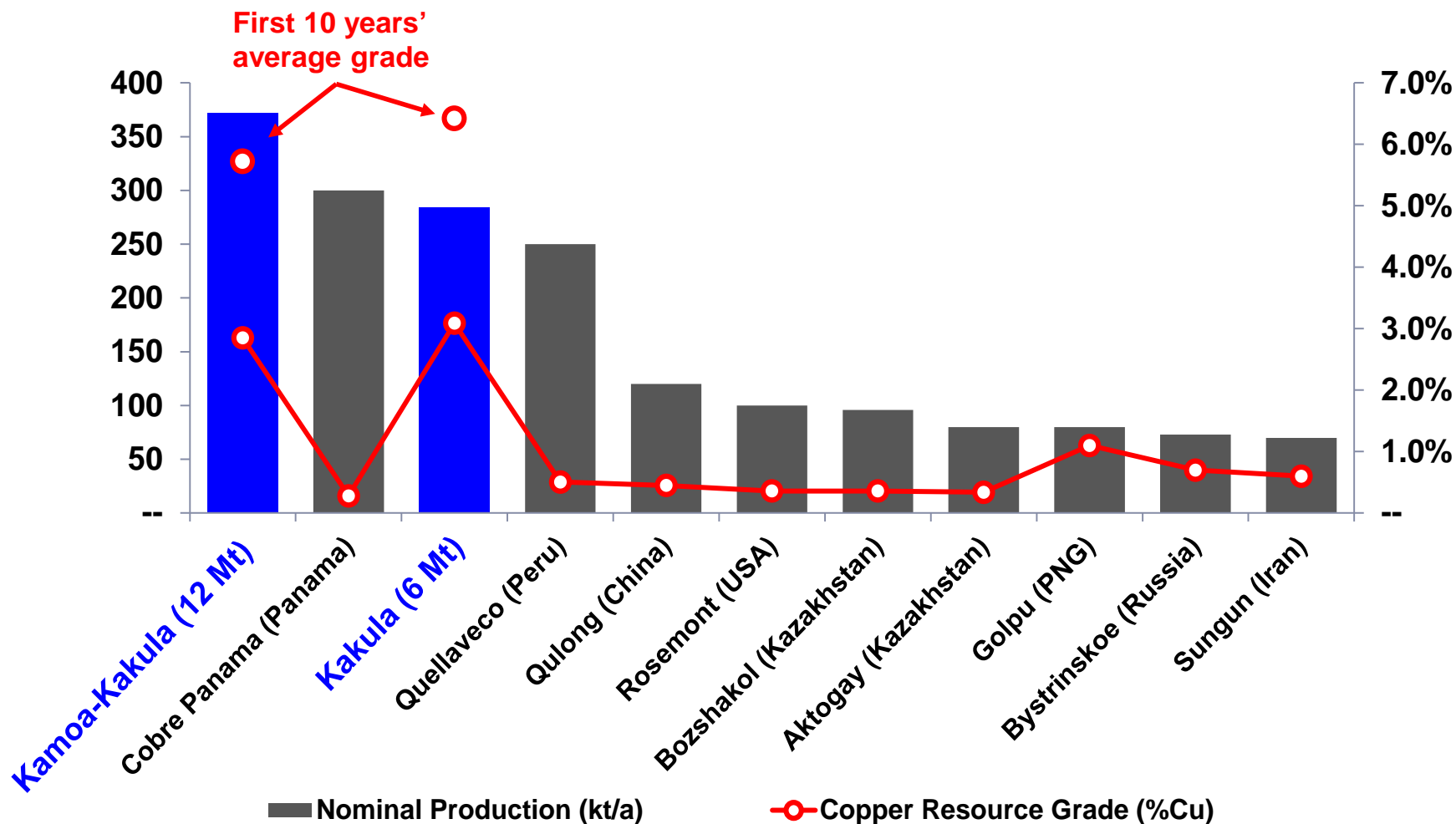
# 2025 top 20 producing mines by paid copper production



Note: Kamo-Kakula production based on projected peak copper production (which occurs in year nine) of the 12 Mtpa development plan for the Kamo-Kakula Project as detailed in the Kakula 2017 PEA. Source: Wood Mackenzie (based on public disclosure, the Kakula 2017 PEA has not been reviewed by Wood Mackenzie).

# Top 10 largest new greenfield projects (Nominal production and head grade)

KAMOA-KAKULA



Note: Top 10 largest new greenfield copper projects defined as the 10 largest greenfield copper projects classified as "base case" or "probable" and ranked by nominal copper production (with Kamo-Kakula's first ten years' average annual production of copper in concentrate considered to be its nominal copper production). Source: Wood Mackenzie, USGS (based on public disclosure, the Kakula 2017 PEA has not been reviewed by Wood Mackenzie).



# High-grade drill core containing massive chalcocite (copper mineralization) from a new drill hole at Kakula

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**Above:** Recent Kakula drill core showing massive chalcopyrite mineralization within a carbonate vein.

**Below:** Massive and bedded chalcocite within siltstone.





Agronomist Fabrice Mazeze (left) and Livelihood Technician Olivier Kahilu Shimbi with banana seedlings that will be distributed to local farmers. The initiative is part of Kamoja-Kakula's program to support and expand successful food production activities in nearby communities.





# Mwadingusha hydroelectric plant upgrade

- Mwadingusha is the first of three hydroelectric power plants in the DRC being upgraded by Ivanhoe, Zijin and SNEL to secure a supply of **clean, sustainable electricity for the development of Kamo-Kakula.**
- Its output has tripled, to 32 megawatts (MW), and should be fully restored to its 71 MW capacity by the end of 2019.
- The Mwadingusha, Koni and Nzilo 1 plants will have combined, installed capacity of approximately **200 MW** for the national grid.







## Western Foreland

**A drilling rig in operation at Ivanhoe's 100%-owned Western Foreland exploration area, located to the west of the Kamoa-Kakula Project. Ivanhoe is exploring for Kamoa-Kakula-style copper mineralization on high-priority targets identified from an airborne gravity survey and detailed ground-based geophysics.**

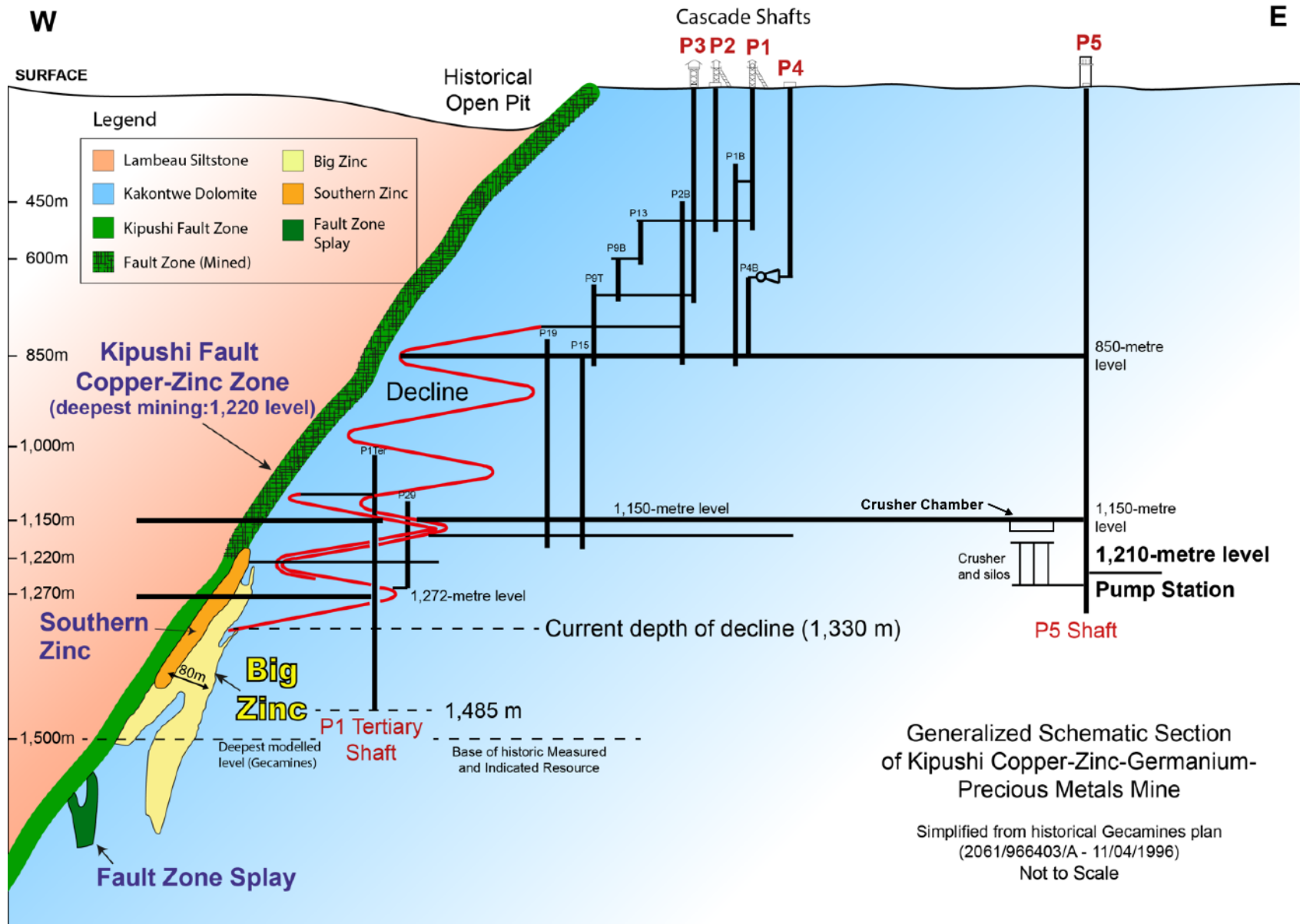




# Kipushi Mine development & upgrading for a new era

Democratic Republic  
of Congo

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- Kipushi Fault Zone was mined 1924-1993 to approx. 1,150-metre level.
- Big Zinc discovered prior to 1993 closure; never mined.



# December 13, 2017: Ivanhoe announced a pre-feasibility study for the rebirth of the historic Kipushi zinc-copper-silver-germanium mine

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The planned return to production would establish Kipushi as the world's highest-grade major zinc mine.





# Underground upgrading nearing completion at Kipushi

KIPUSHI





# Primary rock crusher 1,150 metres underground, ready for commissioning





KICO employees installing new, high-strength steel cable on Shaft 5's rock winder that will be used to hoist broken rock from underground mining activities

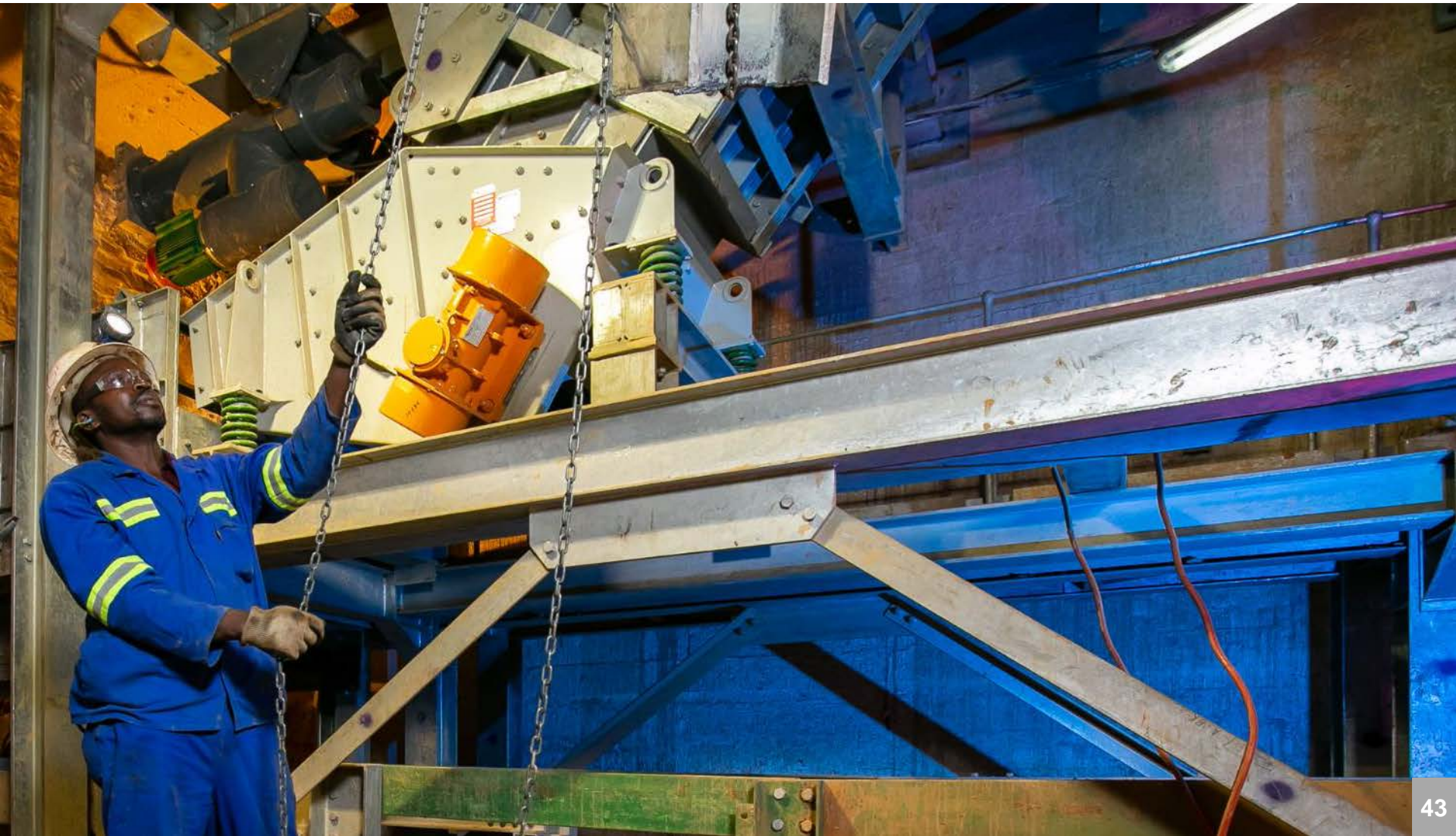
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Kipushi employee at the feed chute, below one of the two ore silos, that will control the rate that crushed ore is fed onto the conveyor belt on the 1,200-metre level

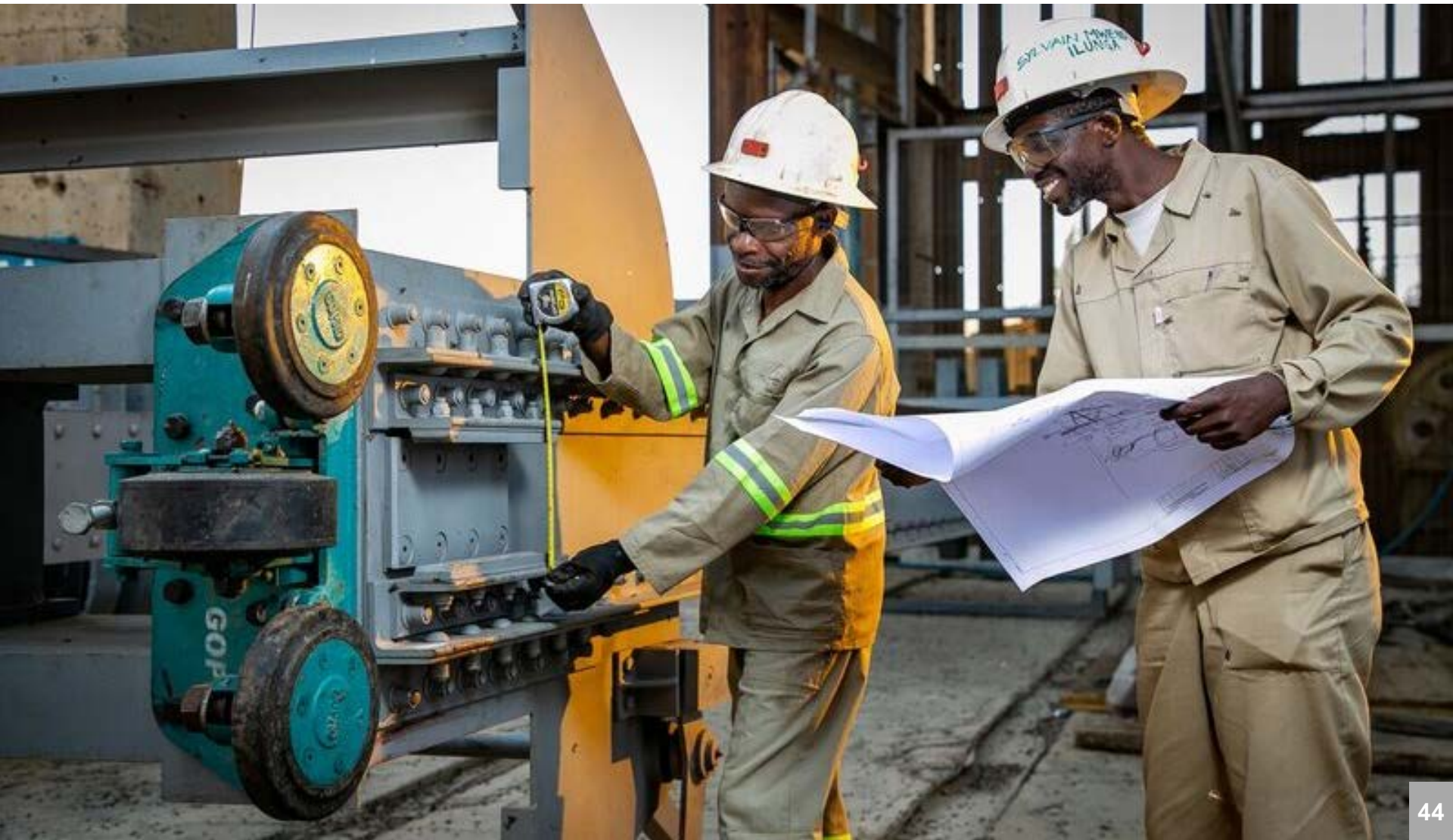
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Kipushi employees installing wheels onto a carrying frame, or bridle, for Kipushi's underground rock winder, prior to it being lowered down Shaft 5

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Thank you.

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