



November 2, 2023

Ivanhoe Mines announces updated greenhouse gas assessment confirming Kamo-Kakula Copper Complex as the world's lowest carbon-emitting major copper mine



Kamo-Kakula carbon emissions per unit of copper (Scope 1, 2 and 3) set to reduce by 46% following completion of 500,000 tonne-per-annum, on-site smelter from Q4 2024



State-of-the-art copper smelter expected to rank as fourth lowest carbon-emitting smelter in the world



Refurbishment of Turbine #5 at Inga II dam 50% complete; on-schedule and on-budget to produce 178MW of green hydroelectric power from Q4 2024



Ivanhoe Mines initiates work on group decarbonisation strategy and pathway to net-zero emissions

KOLWEZI, DEMOCRATIC REPUBLIC OF CONGO – Ivanhoe Mines (TSX: IVN; OTCQX: IVPAF) Executive Co-Chair Robert Friedland and President Marna Cloete, announced today an updated current and future greenhouse gas (GHG) emissions assessment of the Kamo-Kakula Copper Complex. The assessment, conducted by independent consultants Skarn Associates of London, England and WSP Group of Montreal, Canada, confirms that Kamo-Kakula is the market-leading major copper producer in terms of GHG emissions. In addition, the assessment highlights the significant reduction in combined Scope 1, 2 and 3 GHG emissions intensity following the completion of the direct-to-blister copper smelter expected in Q4 2024.

The company is also pleased to report that the refurbishment of Turbine #5 at the Inga II hydroelectric facility is approximately 50% complete and is advancing on budget and on schedule. Turbine #5 will generate 178 MW of clean, hydroelectric power into the DRC grid following completion in Q4 2024.

In addition, Ivanhoe Mines has appointed independent consulting firm BDO Global of Zaventem, Belgium, to assist with shaping the company's decarbonisation strategy and pathway to net-zero emissions.

Ivanhoe Mines' Executive Co-Chair, Robert Friedland commented:

“The world is waking up to the fact that copper is the undisputed metal of electrification, with even conservative forecasts predicting that demand will double in size by 2035, based on massive requirements from renewable energy generation, grid-scale transmission and storage infrastructure, and the electrification of mass transportation.

“We have said it before – there will absolutely be no energy transition to ‘net-zero’ without a transformational increase in the amount of primary copper produced by the mining industry. However, the inhabitants of our planet are also demanding that mining companies work to limit greenhouse gas emissions and safeguard the environment. The achievements at Kamoakakula demonstrate that mining can indeed be re-invented to sustainably provide the metal that we so desperately need, without compounding the problem of global warming and in harmony with our employees, local communities, government partners and stakeholders.”

“Kamoakakula is proof that the Democratic Republic of the Congo will be the future of low-carbon copper production, with its unique high-grade mineral endowment, exceptional hydropower potential, and rapidly improving infrastructure, such as the Lobito Corridor.”

Kamoakakula Copper Complex is the world's lowest carbon-emitting major copper mine on a Scope 1 and 2 basis

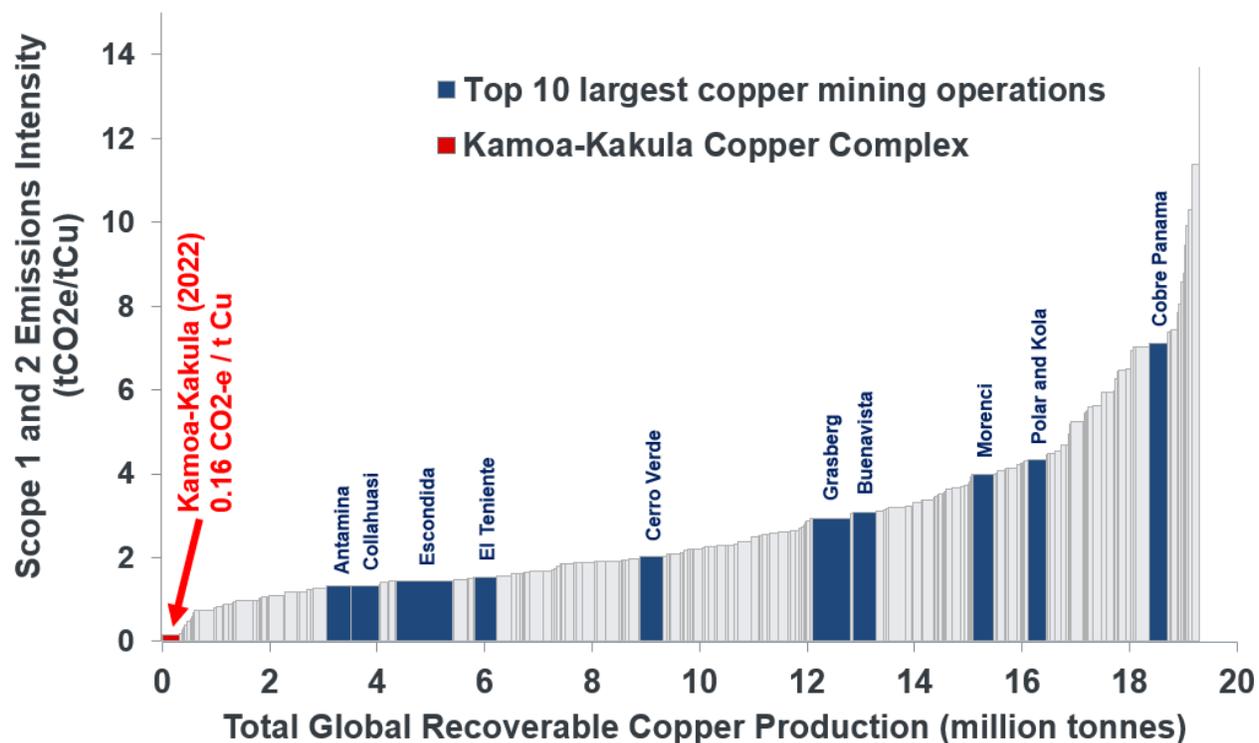
The updated GHG emissions assessment recently completed by Skarn Associates and WSP Group confirms that in 2022 Kamoakakula produced among the lowest carbon emissions per unit of copper in the world, and the lowest of any major copper mine.

This is partially due to the incredibly high-grade orebodies at Kamoakakula with ore milled at an average grade of 5.5% in 2022, roughly ten times higher than the estimated average copper head grade globally of 0.6%.

It is also a function of the DRC grid being among the world's cleanest, with 99.5% of grid power generated from hydroelectricity, according to the U.S. Energy Information Administration. This includes investments in hydropower generation that Kamoakakula has made in partnership with DRC state utility, Société Nationale d'Electricité (SNEL), such as the completed 78 MW Mwadingusha hydroelectric facility and the ongoing work at Turbine #5 of the Inga II hydroelectric facility.

On a Scope 1 and 2 basis (reported from ore to mine gate), Kamoakakula's GHG emissions intensity in 2022 was 0.16 equivalent tonnes of carbon dioxide per tonne of contained copper produced (CO₂-e / t Cu). This comfortably ranks Kamoakakula almost at the bottom of the Scope 1 and 2 GHG emissions curve, as shown in Figure 1.

Figure 1. 2022 Scope 1 & 2 copper GHG emissions intensity curve, highlighting Kamoia-Kakula and top 10 largest copper mining operations. Kamoia-Kakula is the world's fastest growing and greenest major copper mine.



Notes: Kamoia-Kakula and industry peer Scope 1 and 2 GHG emissions data are estimates by Skarn Associates. Estimates include all direct and indirect emissions to produce contained copper from ore to mine gate. The horizontal width of each bar represents each operation's 2022 copper production. In 2022, Kamoia-Kakula produced 333,497 tonnes of copper in concentrate, emitting an estimated 52,314 equivalent tonnes of CO₂, thereby producing 0.16 equivalent tonnes of CO₂ per tonne of copper produced. Chart sources: Skarn Associates, WSP Group, Ivanhoe Mines

Phase 3 direct-to-blister flash copper smelter will be one of the world's largest copper smelters and also one of the greenest

Kamoia-Kakula's ongoing Phase 3 expansion, which is on schedule to be completed in Q4 2024, consists of a new 5-Mtpa underground mine and concentrator at Kamoia, an on-site direct-to-blister flash copper smelter, as well as the refurbishment of Turbine #5 at the Inga II hydroelectric power station.

Turbine #5 will supply an additional 178 megawatts of clean hydroelectric power to the national grid, which is sufficient to meet the power requirements of the Phase 3 concentrator, the smelter, as well as provide spare capacity for the DRC grid and future expansions.

The new direct-to-blister flash copper smelter is projected to be one of the largest, single-line copper flash smelters in the world, and the largest in Africa. The smelter will have a nameplate production capacity is 500,000 tonnes per annum of 99+%-pure blister copper anodes.

The 100-hectare smelter complex is under construction adjacent to the operating Phase 1 and Phase 2 concentrator plants. The smelter has been designed to incorporate leading-edge direct-to-blister technology supplied by Metso Outotec of Espoo, Finland, and will meet the International Finance Corporation's (IFC) emissions standards.

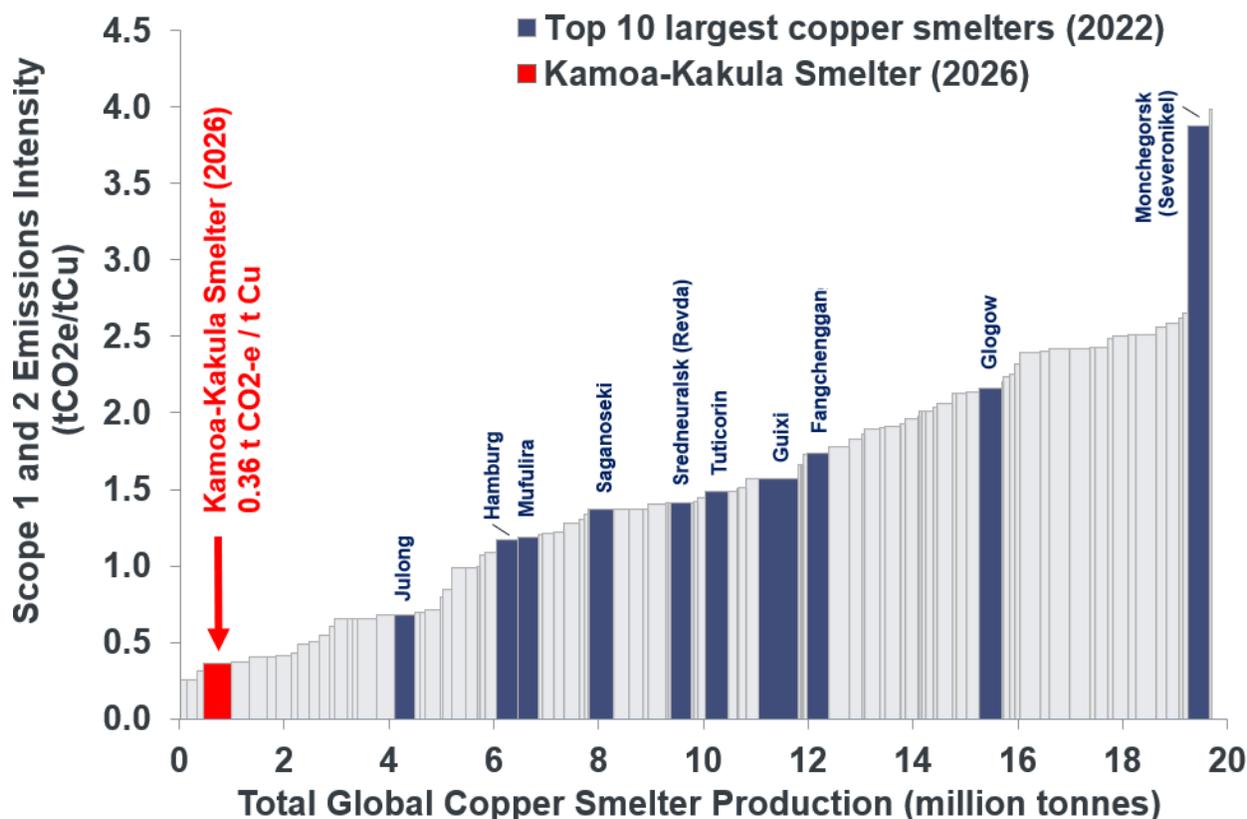
The smelter will have a processing capacity of approximately 1.2 Mtpa of dry concentrate feed and is designed to run on a blend of concentrate produced from the adjacent Phase 1 and 2 concentrators at Kakula and the Phase 3 (and future Phase 4) concentrators at Kamoia, located approximately 10 kilometers away.

According to the assessment completed by Skarn Associates and WSP Group, the smelter will have one of the world's lowest Scope 1 and 2 GHG emission intensities. As shown in Figure 2, the smelter is estimated to produce 0.36 CO₂-e / t Cu. Out of the approximately 100 copper smelters analyzed globally, the smelter is estimated to rank fourth lowest in terms of GHG emissions.

3D visualization of the new Kamoia-Kakula Smelter site in the background (red outline), with Kamoia-Kakula's Phase 1 and 2 concentrators in the foreground-left. The construction of the smelter is on track to be completed in Q4 2024.



Figure 2. 2021 Scope 1 & 2 global copper smelter GHG emissions intensity curve, highlighting Kamo-Kakula smelter and world's top 10 largest copper smelters.

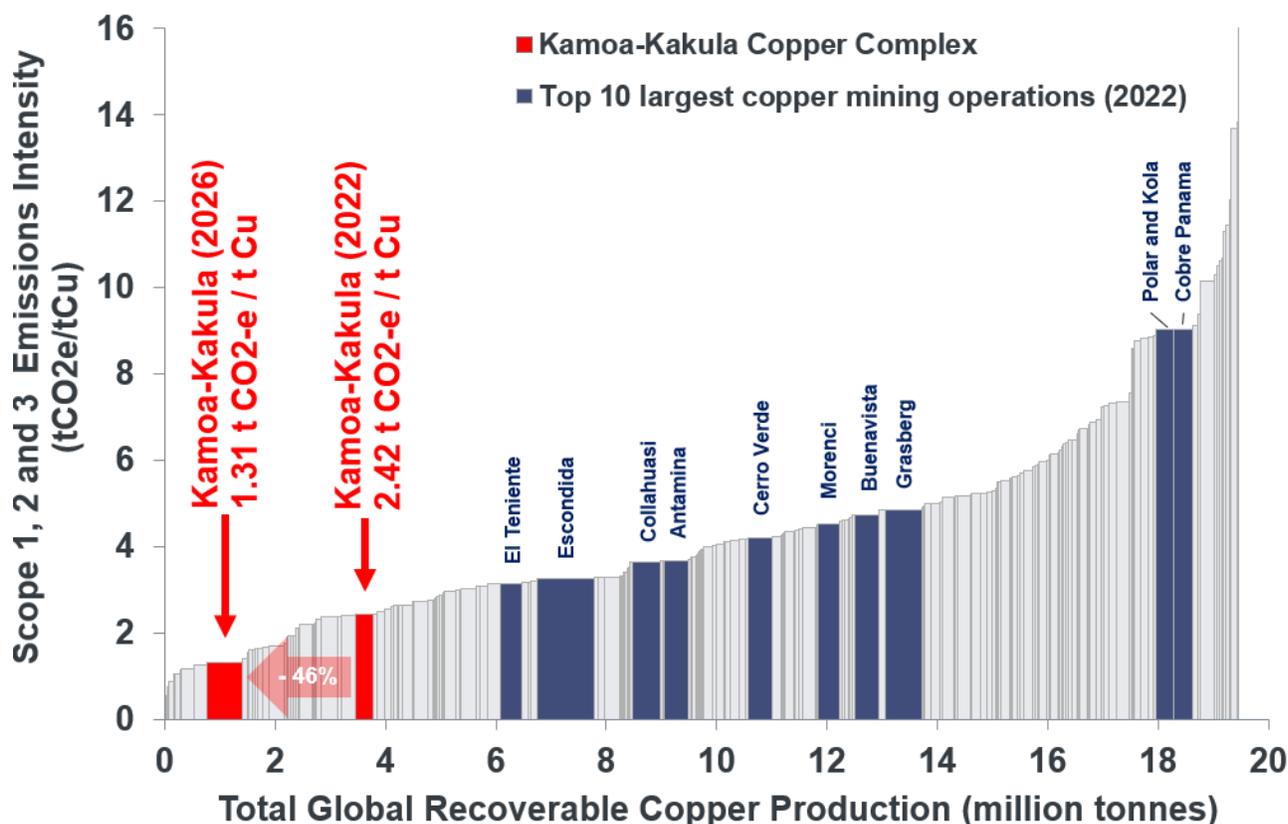


Notes: Kamo-Kakula and industry peer Scope 1 and 2 GHG emissions data are estimates by Skarn Associates. Estimates include all direct and indirect emissions to produce copper blister-anode at smelter gate. The horizontal width of each bar represents each smelter's 2021 copper production. In 2026, the Kamo-Kakula Smelter is estimated to produce 500,000 tonnes of copper blister-anode, emitting an estimated 179,389 equivalent tonnes of CO₂, thereby producing 0.36 equivalent tonnes of CO₂ per tonne of copper produced. Chart sources: Skarn Associates, WSP Group and Ivanhoe Mines.

Smelter investment will reduce Kamo-Kakula carbon emissions per unit of refined copper (Scope 1, 2 and 3) by an additional 46%

On the basis of Scope 1, 2 and 3 (partial) emissions, including downstream emissions beyond the mine gate to produce LME-grade refined metal, Skarn Associates and WSP Group estimate that Kamo-Kakula's GHG emissions-intensity in 2022 was 2.42 CO₂-e / t Cu. Following the completion of the Phase 3 expansion and the smelter, the emissions intensity of Kamo-Kakula on a Scope 1, 2 and 3 basis is estimated to almost halve to 1.31 CO₂-e / t Cu. Industry peer data compiled by Skarn Associates ranks Kamo-Kakula Copper Complex comfortably within the bottom decile of the GHG emissions intensities on a Scope 1, 2 and 3 basis as shown in Figure 3.

Figure 3. 2022 Scope 1, 2 & 3 copper GHG emissions intensity curve, highlighting Kamo-Kakula and top 10 largest copper mining operations. Following the completion of the on-site smelter, as part of the Phase 3 expansion, the GHG emissions intensity is expected to almost halve.



Notes: Kamo-Kakula and industry peer Scope 1, 2 and 3 GHG emissions data are estimates by Skarn Associates. Estimates include emissions to produce refined LME-grade copper, from ore to refinery gate. The emissions estimates for Scope 3 include *Category 9, downstream transportation and distribution*, and *Category 10, processing of sold products*. The horizontal width of each bar represents each operation's 2022 copper production. In 2022, Kamo-Kakula produced 333,497 tonnes of copper, emitting an estimated 791,939 equivalent tonnes of CO₂, thereby producing 2.42 equivalent tonnes of CO₂ per tonne of copper produced. In 2026, Kamo-Kakula is estimated to produce 632,000 tonnes of copper, emitting an estimated 830,894 equivalent tonnes of CO₂, thereby producing 1.31 equivalent tonnes of CO₂ per tonne of copper produced. Chart sources: Skarn Associates, WSP Group, Ivanhoe Mines

The significant reduction in GHG emissions is due to the improvement in Scope 3 emissions from the on-site smelter. This is partially due to the smelter being inherently lower in GHG emissions-intensity compared with typical smelters currently used. The most significant impact is in terms of the transportation of a higher-grade copper anode, instead of shipping copper concentrate.

Currently, copper concentrate of approximately 50% copper (excluding moisture) is trucked up to 3,000 kilometres to the ports of Durban, South Africa, Dar es Salaam, Tanzania and Walvis Bay, Namibia where it is exported to the international markets to be smelted, as shown in Figure 4. Following the completion of the Kamo-Kakula copper smelter, copper will be transported to port in the form of 99.7% pure copper anodes. Therefore, transporting anode with

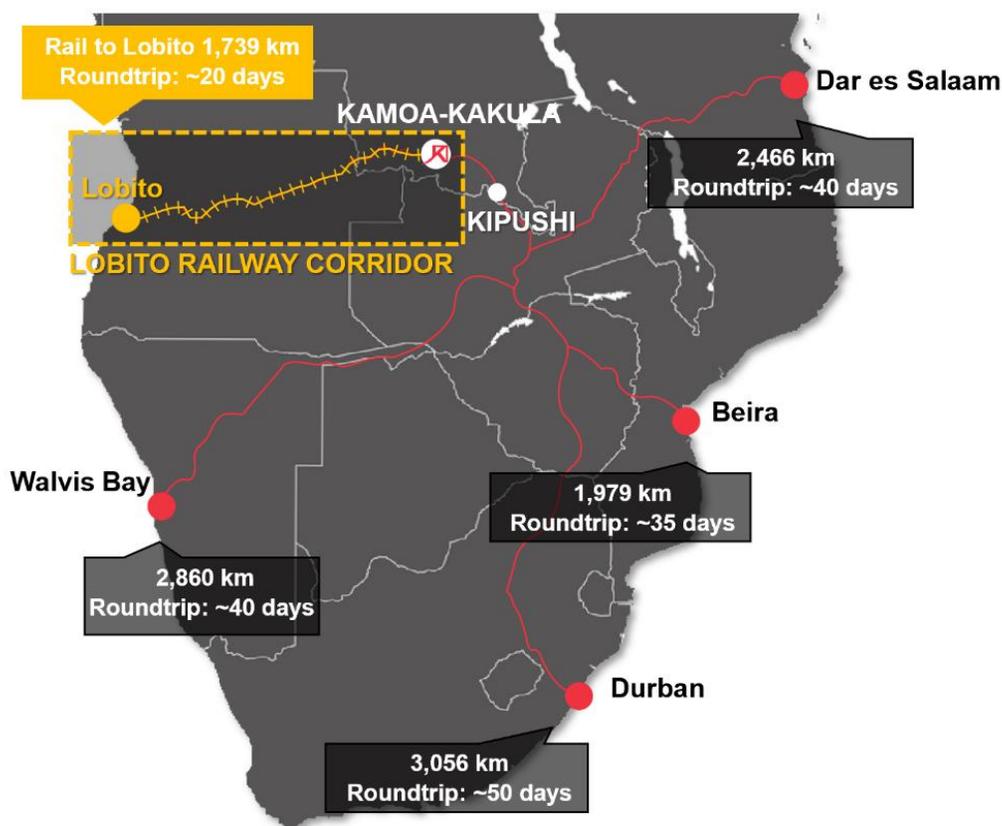
over double the contained copper content, compared with concentrate, requires under half the number of trucks per unit of copper.

In addition, sulphur dioxide off-gas generated from the smelting process is captured to produce high-strength sulphuric acid. This by-product will be sold in liquid form domestically within the DRC Copperbelt. This significantly benefits the GHG emissions of local mining operations that consume sulphuric acid to leach copper from oxide ores. These operations are located between 20 and 60 kilometers away from Kamoia-Kakula. 95% of the sulphuric acid used in the DRC is generated from energy-intensive sulphur furnaces that 'burn' sulphur powder that is imported from as far as the port of Durban, approximately 3,000 km away. Purchasing high-strength sulphuric acid domestically provides these local mining operations with significant GHG emissions savings, due to the proximity of the smelter and the method by which the acid is generated.

Further emissions reduction possible in the supply chain from the Lobito Corridor

To support the further reduction of downstream (Scope 3) GHG emissions, Kamoia-Kakula is working with its offtake partners. This includes targeting low-emission copper refineries, where commercially feasible, as well as supporting lower carbon-intensive logistics routes, such as the Lobito Railway Corridor.

Figure 4. Map of export routes currently used by Kamoia-Kakula in red, with the future Lobito Rail Corridor route in orange. Trial shipments are expected to commence along the Lobito Railway Corridor this quarter.



As announced on August 16, 2023, Kamo-a-Kakula plans to commence trial shipments along the Lobito Railway Corridor in Q4 2023. The new Lobito Railway Corridor is a significantly shorter and more direct route to a seaport than the current export routes, as shown below in Figure 4.

On completion of the trial shipments, Kamo-a-Kakula will be able to estimate the GHG emissions savings from using this route, compared with the current trucking routes.

Refurbishment of hydropower at Inga II approximately 50% complete and on-schedule for Q4 2024 completion

The refurbishment of Turbine #5 at the Inga II hydroelectric facility is approximately 50% complete and advancing on-schedule, and well within budget, for completion in Q4 2024.

Originally built in the 1980s, the Inga II hydroelectric facility consists of 8 turbines with a total generation capacity of 1.4 GW. However, the facility currently operates at approximately 50% utilisation, with Turbine #5 having been non-operational since 2018.

Aerial view of the Inga II hydroelectric facility, owned and operated by DRC state-utility SNEL. Turbine #5 (of 8) is currently undergoing refurbishment, funded by Kamo-a Copper. The new equipment installed as part of the refurbishment work contains in total approximately 100 tonnes of copper.



Inside the turbine hall at the Inga II hydroelectric facility, looking down the construction site of Turbine #5. The removal of the old turbine and associated equipment is complete, with the delivery of all the new replacement equipment expected within the coming months.



(L-R) Ada Khondembongi, SNEL Electronics Engineer, and Thierry Lutadio SNEL Chief Maintenance Mechanical, conducting an inspection of the alternator area following dismantling works.



(L-R) Lucien Shimuna, Ivanhoe Energy, Project Manager, Pacific Puati SNEL Mechanics Engineer, Amos Palata, SNEL Chief of Inga II Operations and Alidor Tumba SNEL Director, examining the interior of the penstock (water intake), which measures 8 meters in diameter and 100 meters in length, following the first phase of sandblasting.



Kamoa Copper, has been working with state-owned power utility, Societe Nationale d'Electricite (SNEL), since 2016 to fund and manage the refurbishment of the Mwadingusha hydroelectric facility, as well as more recently, the refurbishment of Turbine #5 at the Inga II hydroelectric facility. The refurbishment of SNEL's Mwadingusha was completed in September 2021 and has been generating 78MW of power into the DRC grid since. Through a power purchase agreement with SNEL, Kamoa-Kakula is supplied with the hydroelectric power generated from both refurbished hydroelectric facilities.

The Turbine #5 refurbishment project consists of the removal and replacement of all the original mechanical and electrical turbine equipment. Engineering studies were completed in early 2022, with dismantling works commencing at the end of 2022. Year-to-date, the old turbine, transformers, alternators, and all associated control equipment have been successfully dismantled and removed, as well as all replacement equipment has been ordered.

All long-lead order equipment packages, consisting of the transformers, the turbine, and the alternator have been fabricated and shipped, and are expected to be delivered to site by year-end. In addition, other major equipment packages, including the turbine runner, turbine shaft, stator frame have also been fabricated and shipped, with their arrival expected on-site by the end of November 2023. All that remains to be delivered are the alternator rotor poles and the water intake main gate, which are both expected to arrive early in the new year.

In addition, the refurbishment of the powerhouse gantry crane is expected to be completed imminently, which will be used to lower the new equipment into place. All contractors are mobilized on-site and are ready to commence assembly works in January 2024. Following wet commissioning and synchronization to the grid in Q4 2024, the fully refurbished Turbine #5 is expected to generate 178 MW of hydroelectric power to the DRC grid.

Ivanhoe Mines initiates work on group decarbonisation strategy and pathway to net-zero emissions

Ivanhoe is committed to becoming a global leader in the supply of critical resources required to transition to a low-carbon, renewable future. The company is therefore taking a proactive response to climate change by developing its projects in a sustainable, environmentally, and socially responsible manner.

In line with this approach, Ivanhoe has appointed BDO, a globally recognised, independent advisory firm, to assist with the development of Ivanhoe's long-term decarbonisation strategy and net-zero roadmap. In addition, BDO will support detailed climate scenario analysis, to highlight the risks to and from our business due to climatic change.

The recently completed GHG analysis at Kamoakakula's, currently the company's only operational project, will form part of the Ivanhoe's carbon baseline. From this work, an investigation will be made into where decarbonisation is possible on an activity-by-activity basis.

The decarbonisation of activities will then inform the carbon target-setting and net-zero options. Where decarbonisation will not be possible, carbon-credits may be used to offset the remaining GHG emissions to reach net-zero. It is imperative that any carbon-credits purchased originate from projects aligned with Ivanhoe's values and community-driven objectives.

About Ivanhoe Mines

Ivanhoe Mines is a Canadian mining company focused on advancing its three principal projects in Southern Africa; the expansion of the Kamoakakula Copper Complex in the DRC, the construction of the tier-one Platreef palladium-rhodium-platinum-nickel-copper-gold project in South Africa; and the restart of the historic ultra-high-grade Kipushi zinc-copper-germanium-silver mine, also in the DRC.

Ivanhoe Mines is also exploring for new copper discoveries across its circa 2,400km² of 80-100% owned exploration licences in the Western Foreland, which are located adjacent to, or in close proximity to, the Kamoakakula Copper Complex in the DRC.

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Forward-looking statements

Certain statements in this release constitute “forward-looking statements” or “forward-looking information” within the meaning of applicable securities laws. Such statements and information involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the company, its 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 the company’s current expectations regarding future events, performance and results and speak only as of the date of this release.

Such statements include, without limitation: (i) statements that significant reduction in combined Scope 1, 2 and 3 GHG emissions intensity following the completion of the direct-to-blister copper smelter expected in Q4 2024; (ii) statements that the refurbishment of Turbine #5 at the Inga II hydroelectric facility is approximately 50% complete and is advancing on budget and on schedule; (iii) statements that Kamoakakula’s ongoing Phase 3 expansion is on schedule to be completed in Q4 2024; (iv) statements that Turbine #5 will supply an additional 178 megawatts of clean hydroelectric power to the national grid, which is sufficient to meet the power requirements of the Phase 3 concentrator, the smelter, as well as provide spare capacity for the DRC grid and future expansions; (v) statements that the new direct-to-blister flash copper smelter is projected to be one of the largest, single-line copper flash smelters in the world, and the largest in Africa; (vi) statements that the smelter will have a nameplate production capacity is 500,000 tonnes per annum of 99+%-pure blister copper anodes; (vii) statements that the smelter will meet the International Finance Corporation’s (IFC) emissions standards; (viii) statements that the smelter will have a processing capacity of approximately 1.2 Mtpa of dry concentrate feed and is designed to run on a blend of concentrate produced from the adjacent Phase 1 and 2 concentrators at Kakula and the Phase 3 (and future Phase 4) concentrators at Kamoakakula; (ix) statements that the smelter is estimated to produce 0.36 CO₂-e / t Cu; (x) statements that out of the approximately 100 copper smelters analyzed globally, the smelter will rank fourth lowest in terms of GHG emissions; (xi) statements that the smelter will almost halve the emissions intensity of Kamoakakula on a Scope 1, 2 and 3 basis to 1.31 CO₂-e / t Cu; (xii) statements that the smelter will be inherently lower in GHG emissions-intensity compared with typical smelters currently used; (xiii) statements that following the completion of the Kamoakakula copper smelter, copper will be transported to port in the form of 99.7% pure copper anodes. Further, transporting anode with over double the contained copper content, compared with concentrate, requires under half the number of trucks per unit of copper; (xiv) statements

that sulphur dioxide off-gas generated from the smelting process will be captured to produce high-strength sulphuric acid; (xv) statements that by-product acid will be sold in liquid form domestically within the DRC Copperbelt to operations located between 20 and 60 kilometers away from the Kamoakakula.; (xvi) statements that to support the further reduction of downstream (Scope 3) GHG emissions, Kamoakakula is working with its offtake partners, to target low-emission copper refineries, where commercially feasible, as well as supporting lower carbon-intensive logistics routes, such as the Lobito Railway Corridor; (xvii) statements that Kamoakakula plans to commence trial shipments along the Lobito Railway Corridor in Q4 2023; (xviii) statements that on completion of the trial shipments, Kamoakakula will be able to estimate the GHG emissions savings from using this route, compared with the current trucking routes; (xix) statements that all long-lead order items and other major equipment items for Turbine #5 are to be delivered to site by year-end. Further, the alternator rotor poles and the water intake main gate are both expected to arrive early in the new year; (xx) statements that the refurbishment of the powerhouse gantry crane is expected to be completed imminently, which will be used to lower the new equipment into place; (xxi) statements that following wet commissioning and synchronization to the grid in Q4 2024, the fully refurbished Turbine #5 is expected to generate 178 MW of hydroelectric power to the DRC grid; (xxii) statements that Ivanhoe is committed to becoming a global leader in the supply of critical resources required to transition to a low-carbon, renewable future; (xxiii) statements that BDO, a globally recognised, independent advisory firm, to assist with the development of Ivanhoe's long-term decarbonisation strategy and net-zero roadmap. Further, BDO will support detailed climate scenario analysis, to highlight the risks to and from our business due to climatic change; (xxiv) statements that investigations will be made into where decarbonisation is possible on an activity-by-activity basis; (xxv) statements that decarbonisation of activities will then inform the carbon target-setting and net-zero options; and, (xxvi) statements that where decarbonisation will not be possible, carbon-credits may be used to offset the remaining GHG emissions to reach net-zero. Further, any carbon-credits purchased originate from projects aligned with Ivanhoe's values and community-driven objectives.

All of the results of the 2023 Pre-Feasibility Study and 2023 Preliminary Economic Assessment constitute forward-looking statements or 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, estimates of capital and operating costs and the size and timing of phased development of the projects.

Furthermore, with respect to this specific forward-looking information concerning the operation and development of the Kamoakakula Copper Complex, the company has based its assumptions and analysis on certain factors that are inherently uncertain. Uncertainties include: (i) the adequacy of infrastructure; (ii) geological characteristics; (iii) metallurgical characteristics of the mineralization; (iv) the ability to develop adequate processing capacity; (v) the price of copper; (vi) the availability of equipment and facilities necessary to complete development; (vii) the cost of consumables and mining and processing equipment; (viii) unforeseen technological and engineering problems; (ix) accidents or acts of sabotage or terrorism; (x) currency fluctuations; (xi) changes in regulations; (xii) the compliance by joint venture partners with terms of agreements; (xiii) the availability and productivity of skilled labour; (xiv) the regulation of the mining industry by various governmental agencies; (xv) the ability to raise sufficient capital to develop such projects; (xvi) changes in project scope or design; and (xvii) political factors.

Forward-looking statements and information involve significant risks and uncertainties, should not be read as guarantees of future performance or results and will not necessarily be accurate indicators of whether such results will be achieved. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements or information, including, but not limited to, the factors discussed above and under the "Risk

Factors” section in the company’s MD&A for the three and six months ended June 30, 2023, and its Annual Information Form, and elsewhere in this release, as well as unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of parties to contracts with the company to perform as agreed; social or labour unrest; changes in commodity prices; and the failure of exploration programs or studies to deliver anticipated results or results that would justify and support continued exploration, studies, development or operations.

Although the forward-looking statements contained in this release are based upon what management of the company believes are reasonable assumptions, the company cannot assure investors that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this release and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the company 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 release.

The company’s actual results could differ materially from those anticipated in these forward-looking statements because of the factors set forth in the “Risk Factors” section in the company’s MD&A for the three and six months ended June 30, 2023, and its current annual information form.