

# IVANHOE MINES

NEW HORIZONS

## MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2021

*DATED: AUGUST 10, 2021*

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## INTRODUCTION

This management's discussion and analysis (MD&A) should be read in conjunction with the unaudited condensed consolidated interim financial statements of Ivanhoe Mines Ltd. ("Ivanhoe", "Ivanhoe Mines" or the "Company"), for the three and six months ended June 30, 2021, which have been prepared in accordance with International Accounting Standard 34 - Interim Financial Reporting (IAS 34) and the audited consolidated financial statements of Ivanhoe for the years ended December 31, 2020 and 2019, which have been prepared in accordance with International Financial Reporting Standards (IFRS). All dollar figures stated herein are in U.S. dollars, unless otherwise specified. References to "C\$" mean Canadian dollars and references to "R" mean South African Rands.

The effective date of this MD&A is **August 10, 2021**. Additional information relating to the Company is available on SEDAR at [www.sedar.com](http://www.sedar.com). Certain statements contained in the MD&A are forward-looking statements that involve risks and uncertainties. See "*Forward-Looking Statements*" and "*Risk Factors*".

## FORWARD-LOOKING STATEMENTS

Certain statements in this MD&A 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 MD&A.

Such statements include without limitation, the timing and results of: (i) statements regarding that first paste from the backfill plant at Kakula will be delivered to underground stopes in August 2021; (ii) statements regarding approximately one-half of the Kakula mine's tailings will be sent back underground, significantly reducing the surface tailings storage; (iii) statements regarding during August 2021 the focus of the commissioning team will shift from the front end crushing and milling circuit to balancing and optimizing the flotation and regrind milling areas and that this is expected to further improve concentrate grade and recovery; (iv) statements regarding construction of the second 3.8-Mtpa concentrator plant is progressing well toward a Q3 2022 start-up; (v) statements regarding Ivanhoe and its partner Zijin exploring the acceleration of the Kamoa-Kakula Phase 3 concentrator expansion; (vi) statements regarding the ultra-high-grade, clean concentrate produced by Kamoa-Kakula is expected to contain approximately 57% copper and very low levels of impurities; (vii) statements regarding the Lualaba Copper Smelter will treat up to 150,000 wet metric tonnes of copper concentrates from Kamoa-Kakula, in return for a treatment charge and market-based realization fee, and produce blister copper containing approximately 99% copper that will be returned to Kamoa Copper, and collected by CITIC Metal and Zijin from a dedicated storage area at the Lualaba Copper Smelter; (viii) statements regarding that as of June 30, 2021, the Kamoa-Kakula joint venture had an estimated \$697 million of initial capital costs remaining for completion of Phase 1 and Phase 2; (ix) statements regarding the agreement reached to upgrade a major turbine at the Inga II hydropower facility including that the upgraded turbine is expected to produce 162 megawatts (MW) of clean, renewable hydropower, providing the Kamoa-Kakula Copper Mine with sufficient, sustainable electricity for future expansions, including its own copper smelter; (x) statements regarding refurbishment of six turbines at the Mwadingusha hydro-electric power plant and that the synchronization of the last unit to the grid is expected in August 2021; (xi) statements regarding Kamoa-Kakula aiming to become the first net-zero carbon emitter among the top-tier copper mines by electrifying its mining fleet with state-of-the-art equipment powered by electric batteries or hydrogen fuel cells; (xii) statements regarding the Platreef Project's streaming facility, including that it is planned to be drawn down in four separate tranches; (xiii) statements regarding the Platreef

Project's Shaft 1 changeover and equipping including that it is progressing to plan and is on schedule for commencement of rock hoisting early in 2022; (xiv) statements that the construction of the Shaft 2 headframe from the hitch to the collar level is scheduled for completion in May 2022; (xv) statements regarding the planned mining methods at Platreef will use highly productive, mechanized methods, including long-hole stoping and drift-and-fill mining, and that each method will utilize cemented backfill for maximum ore extraction; (xvi) statements regarding the orebody at Platreef was targeted to recover approximately 125 million tonnes at the highest net smelter return; (xvii) statements that the draft feasibility study and development and financing plan for Kipushi are being reviewed by Ivanhoe Mines together with its partner Gécamines and that it is anticipated that these discussions will be concluded with the finalization of the feasibility study and the agreement on the development and financing plan by Q4 2021; (xviii) statements regarding future drilling in the Makoko West area including that it will target specific structural locations that are conducive to developing higher copper grades; (xix) statements regarding Ivanhoe's guidance of contained copper in concentrate expected to be produced by the Kamoa-Kakula Project; (xx) statements regarding production guidance of between 80,00 and 95,000 tonnes of contained copper in concentrate for 2021 from the Kamoa-Kakula Project; (xxi) statements regarding Ivanhoe's proportionate funding of Kamoa-Kakula's Phase 2 construction capital costs for the remainder of 2021 is expected to be \$85 million with the assumption that the limited recourse line of credit from Zijin is not drawn; and (xxii) statements regarding the main objectives for the remainder of 2021 and the remaining 2021 budget.

As well, all of the results of the feasibility study for the Kakula copper mine, the Kakula-Kansoko 2020 pre-feasibility study and the updated and expanded Kamoa-Kakula Project preliminary economic assessment, the feasibility study of the Platreef Project, the Platreef 2020 preliminary economic assessment and the pre-feasibility study of the Kipushi Project, 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 development of the Kamoa-Kakula, Platreef and Kipushi projects, 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, nickel, zinc, platinum, palladium, rhodium and gold; (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.

This MD&A also contains references to estimates of Mineral Resources and Mineral Reserves. The estimation of Mineral Resources is inherently uncertain and involves subjective judgments about many relevant factors. Estimates of Mineral Reserves provide more certainty but still involve similar subjective judgments. 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 or Mineral Reserve estimates may have to be re-estimated based on: (i) fluctuations in copper, nickel, zinc, 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/or changes in mine plans; (vi) the possible failure to receive required permits, approvals and licences; and (vii) changes in law or regulation.

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 or not 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 below and under “Risk Factors”, and elsewhere in this MD&A, 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 MD&A 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 MD&A 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 MD&A.

The Company’s actual results could differ materially from those anticipated in these forward-looking statements as a result of the factors set forth below in the “Risk Factors” section beginning on page 50 and elsewhere in this MD&A.

## REVIEW OF OPERATIONS

Ivanhoe Mines is a mining, exploration and development company. At present the Company’s financial performance is primarily affected by ongoing mining operations at its Kamoa-Kakula Project, and ongoing exploration and development activities being conducted at all four of its material properties. The Company’s material properties consist of:

- **The Kamoa-Kakula Project.** A joint venture between Ivanhoe Mines and Zijin Mining Group Co., Ltd., (“Zijin” or “Zijin Mining”) within the Central African Copperbelt in the Democratic Republic of Congo’s (DRC) southern Lualaba province. Ivanhoe Mines and Zijin Mining each hold an indirect 39.6% interest in the Kamoa-Kakula Project, Crystal River Global Limited (Crystal River) holds an indirect 0.8% interest and the DRC government holds a direct 20% interest. The Kamoa-Kakula Project began producing copper in May 2021 and, through phased expansions, is positioned to become one of the world’s largest copper producers. (See “*Kamoa-Kakula Project*”)
- **The Platreef Project.** Construction of the planned Platreef Mine on the Company’s discovery of palladium, rhodium, platinum, nickel, copper and gold, on the Northern Limb of South Africa’s Bushveld Igneous Complex is in progress. Ivanhoe Mines holds a 64% interest in Platreef, the South African beneficiaries of a broad-based, black economic empowerment structure have a combined 26% stake in the Platreef Project and the remaining 10% is owned by a Japanese consortium of ITOCHU Corporation, Japan Oil, Gas and Metals National Corporation; and Japan Gas Corporation. (See “*Platreef Project*”)
- **The Kipushi Project.** The existing Kipushi Mine is located on the Central African Copperbelt in the DRC’s southern Haut-Katanga province, one of Africa’s major mining hubs. The mine, which operated between 1924 and 1993, is approximately 30 kilometres southwest of the provincial capital, Lubumbashi, and less than one kilometre from the DRC-Zambia border. Ivanhoe Mines holds a 68% interest in Kipushi; the state-owned mining company, La Générale des Carrières et des Mines (Gécamines), holds the remaining 32% interest. (See “*Kipushi Project*”)
- **The Western Foreland Exploration Project.** A group of exploration licences totalling approximately 2,550 km<sup>2</sup> and located in close proximity to the Kamoa-Kakula Project, the

majority of which are 90%-100%-owned. Ivanhoe's DRC exploration group is targeting Kamoa-Kakula-style copper mineralization through a regional exploration and drilling program. (See *"DRC Western Foreland Exploration Project"*)

## **KAMOA-KAKULA PROJECT**

The Kamoa-Kakula Project, a joint venture between Ivanhoe Mines and Zijin Mining, has been independently ranked as the world's fourth-largest copper deposit by international mining consultant Wood Mackenzie. The project is approximately 25 kilometres west of the town of Kolwezi and about 270 kilometres west of Lubumbashi. The Kamoa-Kakula Project began producing copper in May 2021 and achieved commercial production on July 1, 2021.

Ivanhoe sold a 49.5% share interest in Kamoa Holding Limited (Kamoa Holding) to Zijin Mining and a 1% share interest in Kamoa Holding to privately-owned Crystal River in December 2015. Since the conclusion of the Zijin transaction, each shareholder has been required to fund expenditures at the Kamoa-Kakula Project in an amount equivalent to its proportionate shareholding interest in Kamoa Holding.

A 5%, non-dilutable interest in the Kamoa-Kakula Project was transferred to the DRC government on September 11, 2012, for no consideration, pursuant to the 2002 DRC mining code. Following the signing of an agreement with the DRC government in November 2016, in which an additional 15% interest in the Kamoa-Kakula Project was transferred to the DRC government, Ivanhoe and Zijin Mining now each hold an indirect 39.6% interest in the Kamoa-Kakula Project, Crystal River holds an indirect 0.8% interest and the DRC government holds a direct 20% interest. Kamoa Holding holds an 80% interest in the project.

### ***Health and safety at Kamoa-Kakula***

At the end of June 2021, the Kamoa-Kakula Project reached 1,492,769 work hours free of a lost-time injury. A fatality occurred on May 31, 2021 when a contractor's employee was hit in the leg by a loose falling rock while working at one of the mine's underground faces, which caused the employee to fall backwards, striking his head. Despite immediate first-aid assistance by his colleagues, he passed away at the accident scene. Since the fatality, remedial safety interventions have been implemented. Two other lost-time injuries occurred in Q2 2021. The project continues to strive toward its workplace objective of zero harm to all employees and contractors.

Kamoa-Kakula has successfully focused on prevention, preparation, and mitigation in managing the risks associated with COVID-19. Large-scale testing, combined with focused preventative measures, ensured that positive cases were quickly identified, isolated, and treated, with cross contamination kept to a minimum. Maintaining this high standard of risk management remains a daily focus, to prevent future cases. During the first six months of 2021, the Kamoa-Kakula Project conducted 3,743 COVID-19 tests, with 163 patients testing positive for COVID-19.

Kamoa Copper has secured an initial supply of the AstraZeneca vaccine for employees, contractors and Democratic Republic of Congo residents who live in the mine's host communities. Kamoa Copper continues to administer its initial supply of 1,500 doses. The second dose will be administered eight to 12 weeks after the first and a certificate of vaccination completion will be issued to those who have received two doses.

The Kamoa COVID-19 hospital continues to treat patients when required, as construction progresses well for the expansion and upgrade of the primary healthcare wing. Kamoa-Kakula's highly-experienced doctors and nurses apply the latest medical treatments, supported by a world-leading emergency response and paramedic team.

Kamoa is one of 15 sites in the province where COVID-19 vaccination programs are being rolled-out to curb the spread of the virus. As the pandemic evolves, the medical team at the Kamoa hospital



continues to review and update risk mitigation protocols, while ensuring that new medical advances are investigated and applied to protect the health and safety of employees and community members.

***Copper concentrate production from the initial 3.8-Mtpa Kakula concentrator plant commenced in May 2021; commercial production achieved on July 1, 2021***

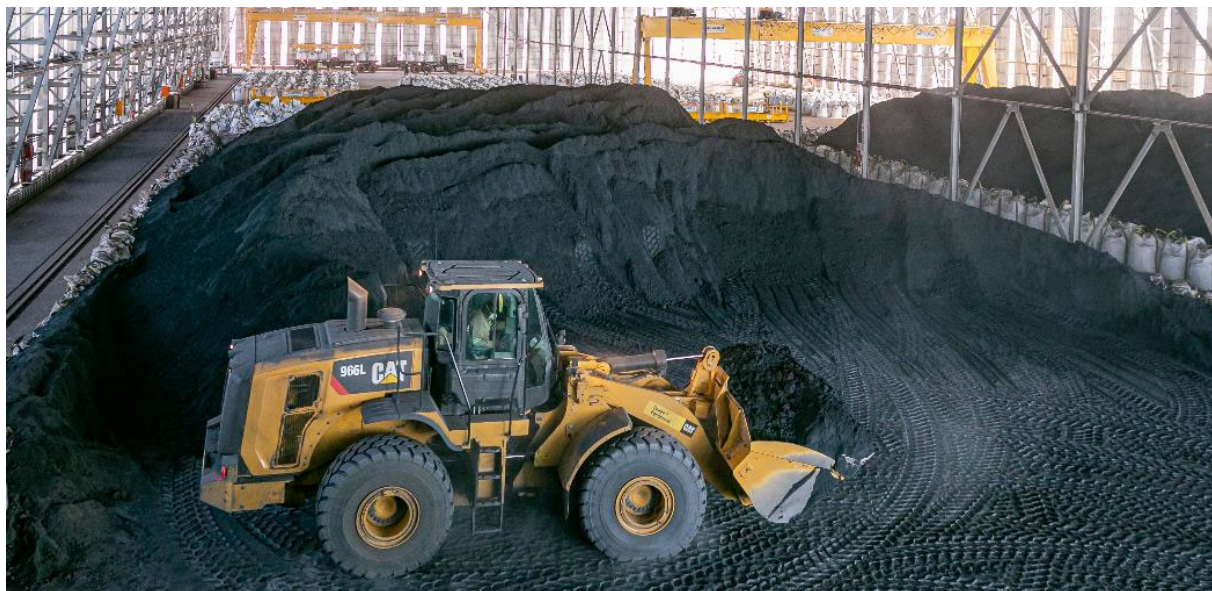
Overall progress of Kamo-Kakula's first phase, 3.8-Mtpa mining and milling operation (covering mine infrastructure, concentrator plant and surface infrastructure) was very nearly complete at the end of Q2 2021. The only major construction activity that still was outstanding was the backfill plant which was completed in July 2021, with the first paste to be delivered to underground stopes in August 2021.

The backfill plant will be used to mix tailings from the processing plant with cement to produce paste backfill. The backfill will be pumped back into the mine and used to help support mined-out areas. Approximately one-half of the mine's tailings will be sent back underground, significantly reducing the surface tailings storage. Construction of the tailings storage facility has been completed and first tailings deposited.

Overall construction of the project's first phase, 3.8-Mtpa concentrator plant and associated facilities is complete, with C4 or hot commissioning advancing according to plan. First ore was introduced into the ball mills on May 20, 2021, and first saleable concentrate was filtered on May 25, 2021, marking the start of concentrate production. Lower-grade ore was fed into the plant during initial hot commissioning and the feed grade has since been increased.

The Kamo-Kakula Project was deemed to have reached commercial production on July 1, 2021, after achieving a milling rate in excess of 80% of design capacity and recoveries close to 70% for a continuous, seven-day period. Revenue recognition, as well as depreciation of Kamo-Kakula's first phase, 3.8-Mtpa concentrator plant and milling operation, commenced from this date.

**Photo: Loading high-grade copper concentrate at the Kamo-Kakula concentrate storage warehouse for transport to the nearby Lualaba Copper Smelter for processing into blister copper ingots, containing approximately 99% copper.**



Approximately 500,000 tonnes of ore had been milled by early August 2021. Copper production has steadily increased since hot commissioning began at the end of May 2021. Copper production exceeded 500 tonnes per day on occasion during July, nearing the Phase 1 steady-state design capacity of approximately 550 tonnes per day, or 200,000 tonnes per year. During August, the focus of the commissioning team will shift from the front end crushing and milling circuit to balancing and

optimizing the flotation and regrind milling areas. This is expected to further improve concentrate grade and recovery.

Copper recoveries increased from an average of approximately 70% in June 2021 to approximately 81% in July 2021, progressively increasing toward the Phase 1 steady-state design copper recoveries of approximately 86%.

***Construction of Kamoa-Kakula's Phase 2 expansion is more than 35% complete; Phase 3 studies are progressing***

Construction of the second 3.8-Mtpa concentrator plant is progressing well toward a Q3 2022 start-up with the current focus on the completion of civil works and early structural steel erection. Civil works are over 80% complete with a number of areas handed over to the steel, mechanical, piping and platework contractor.

Engineering and procurement activities are well advanced with both approximately 80% complete. Structural steel, platework and major equipment has started arriving on site and steel erection in the high-pressure grinding rolls and tailings thickening areas has commenced. The bulk of the structural steel and platework is scheduled to be on site in early Q3 2021. Piping fabrication is advancing well with some piping en route to site.

Ivanhoe and its partner Zijin are exploring the acceleration of the Kamoa-Kakula Phase 3 concentrator expansion, which may be fed from expanded mining operations at Kansoko, or new mining areas at Kamoa North (including the Bonanza Zone) and Kakula West.

Study work for the Phase 3 mine and concentrator expansion is underway, which includes optimization work to determine mining production capacity and costs at the various mining areas. This work also will inform the optimal sizing of the Phase 3 concentrator, which was outlined as a further expansion of 3.8 Mtpa in the Kamoa-Kakula Integrated Development Plan announced in September 2020. In addition, the studies will take into consideration the plans to upgrade Turbine 5 at the Inga II hydropower complex to provide 162 megawatts of renewable hydropower, as well as the construction of a direct-to-blister smelter.

Once the optimization work is completed, Kamoa Copper will advance into a more detailed phase of design and engineering work with its objective to accelerate the Phase 3 concentrator expansion.

**Photo: Construction of the Phase 2 tailings thickener is nearing completion.**





**Photos: Two views of Kamoakakula's Phase 1 concentrator plant in full operation and the adjacent, parallel Phase 2 concentrator plant under construction.**



***Ore stockpiles now hold approximately 3.54 million tonnes grading 4.77% copper, containing more than 168,000 tonnes of copper***

At the end of March 2021, Kamoakakula's pre-production surface stockpiles contained approximately 2.56 million tonnes of high-grade and medium-grade ore at an estimated blended grade of 4.60% copper, containing more than 117,000 tonnes of copper. The project's combined medium-grade and high-grade ore mined was approximately 409,000 tonnes at an average grade of 5.71% copper in April 2021; approximately 406,000 tonnes at an average grade of 5.77% copper in



May 2021; and approximately 338,000 tonnes at an average grade of 4.59% copper in June 2021. This brings the project's total high- and medium-grade ore surface stockpiles to approximately 3.40 million tonnes at an estimated grade of 4.78% copper as of the end of June 2021.

A total of 414,000 tonnes grading 5.16% copper was mined in July 2021 and comprised 367,000 tonnes grading 5.29% copper from the Kakula Mine, including 85,000 tonnes grading 7.70% copper from the mine's high-grade centre, and 47,000 tonnes grading 4.13% copper from the Kansoko Mine.

First ore was fed into the concentrator plant on May 20, 2021, and the start of copper concentrate production occurred on May 25, 2021, several months ahead of schedule. As of June 30, 2021, 313,000 tonnes of ore grading 4.85% copper had been conveyed to the run-of-mine (ROM) stockpile.

**Photo: New employee accommodations under construction at the Kakula Mine, with the Kakula North ore stockpiles and concentrator plant in the background.**



***Kamoa-Kakula's off-take agreements signed for Phase 1 blister copper and copper concentrate***

On June 9, 2021, Kamoa Copper signed off-take agreements with CITIC Metal (HK) Limited (CITIC Metal) and Gold Mountains (H.K.) International Mining Company Limited, a subsidiary of Zijin, for 50% each of the copper products from Kamoa-Kakula's Phase 1 production. The off-take agreements are evergreen for the production volumes from Phase 1, including copper concentrate and blister copper resulting from processing of copper concentrates at the nearby Lualaba Copper Smelter.

The off-take agreements contain standard, international commercial terms, including copper payables and treatment and refining charges based on the annual benchmark across the copper industry. The ultra-high-grade, clean concentrate produced by Kamoa-Kakula is expected to contain approximately 57% copper and very low levels of impurities.

CITIC Metal and Zijin are purchasing the copper concentrate at the Kakula Mine and the blister copper at the Lualaba Copper Smelter on a free-carrier basis, meaning the buyers will be responsible for arranging freight and shipment to the final destination, initially via the port of Durban, South Africa.

CITIC Metal and Zijin each provided an advance payment facility of \$150 million (\$300 million in total), which was drawn at the election of Kamo Copper and received in June 2021. The facility carries an annual interest rate of 8% and will be offset against provisional payments due to Kamo Copper from product deliveries. Payment terms include an option to receive a provisional payment on a 100%-basis within three business days of invoicing, at the end of each delivery month.

***Agreement signed with Lualaba Copper Smelter to produce 99% blister copper in the DRC***

On May 31, 2021, Kamo Copper signed a 10-year agreement with the Lualaba Copper Smelter, located outside the town of Kolwezi, for the processing of a portion of Kamo's copper concentrate production. Kamo Copper delivered its first bulk copper concentrates to the Lualaba Copper Smelter on June 1, 2021, and since then, deliveries to the smelter have been occurring on a daily basis. The Lualaba Copper Smelter is 60%-owned by China Nonferrous Metal Mining Group (CNMC) of Beijing, China. Yunnan Copper of Kunming, China, owns the remaining 40%.

The smelter, which began operations in early 2020, will treat up to 150,000 wet metric tonnes of copper concentrates from Kamo-Kakula, in return for a treatment charge and market-based realization fee, and produce blister copper containing approximately 99% copper that will be returned to Kamo Copper, and collected by CITIC Metal and Zijin from a dedicated storage area at the Lualaba Copper Smelter.

The Lualaba Copper Smelter is the first modern, large, pyro-metallurgical copper smelter built in the DRC, and is approximately 40 kilometres from Kamo-Kakula via the recently-constructed, dedicated by-pass road.

The first truckloads of Kamo-Kakula's blister copper ingots, containing approximately 99% copper, were exported from the Lualaba Copper Smelter to international markets in July 2021.

**Photo: Pouring Kamo Copper blister ingots, containing approximately 99% copper, at the local Lualaba Copper Smelter.**





**Photo: Kamoa Copper blister copper ingots produced at the Lualaba Copper Smelter being loaded for transport to international markets.**



***Kamoa-Kakula begins exporting copper concentrate internationally as production ramps up***

Kamoa Copper SA began exporting its copper concentrate internationally in July 2021. The first truckloads of copper concentrate destined for smelters outside of the DRC departed from the mine site on July 17, 2021, marking a significant milestone in the ongoing ramp-up of Kamoa-Kakula's Phase 1, 3.8-Mtpa concentrator plant.

By early August 2021, approximately 32,700 tonnes of copper concentrate had been loaded at the mine site for delivery to either the Lualaba Copper Smelter, or to international markets.

Kamoa Copper received all necessary authorizations from the DRC government to export copper concentrate and blister copper on June 8, 2021.

**Photo: Transport trucks loaded with high-grade copper concentrate at Kamoa-Kakula awaiting customs approval, which usually takes five days, before beginning their journey to international smelters, via the port of Durban, South Africa.**



### ***Outstanding economic results of the Kamoa-Kakula Integrated Development Plan 2020***

On September 8, 2020, Ivanhoe Mines announced the results of an independent Integrated Development Plan (IDP) for the Kamoa-Kakula Project. The Kamoa-Kakula Integrated Development Plan 2020 encompasses three development scenarios:

- The definitive feasibility study (DFS) for stage one Kakula Mine development. The Kakula 2020 DFS evaluates the initial development of a 6.0-Mtpa underground mine and surface processing complex at the Kakula Deposit with a capacity of 7.6 Mtpa, built in two modules of 3.8 Mtpa, with the first already under advanced construction.
- The pre-feasibility study (PFS) including Kansoko Mine development. The Kakula-Kansoko 2020 PFS evaluates the development of mining activities at the Kansoko Deposit in addition to the Kakula Mine, initially at a rate of 1.6 Mtpa to fill the concentrator at Kakula, eventually ramping up to 6.0 Mtpa as the reserves at Kakula are depleted.
- The expanded, subsequent development to four producing mines. The Kamoa-Kakula 2020 preliminary economic assessment (PEA) includes an analysis of the potential for an integrated, 19-Mtpa multi-stage development, beginning with initial production from the Kakula Mine, to be followed by subsequent, separate underground mining operations at the nearby Kansoko, Kakula West and Kamoa North mines, along with the construction of a direct-to-blister smelter. The Kamoa North area comprises of five separate mines that would be developed as resources are mined out elsewhere, to maintain the production rate at up to 19 Mtpa, with an overall life in excess of 40 years.

The Kamoa-Kakula IDP 2020 was independently prepared on a 100%-basis by OreWin Pty Ltd. of Adelaide, Australia; China Nerin Engineering Co., Ltd., of Jiangxi, China; DRA Global of Johannesburg, South Africa; Epoch Resources of Johannesburg, South Africa; Golder Associates Africa of Midrand, South Africa; KGHM Cuprum R&D Centre Ltd. of Wroclaw, Poland; Outotec Oyj of Helsinki, Finland; Paterson and Cooke of Cape Town, South Africa; Stantec Consulting International LLC of Phoenix, USA; SRK Consulting Inc. of Johannesburg, South Africa; and Wood plc of Reno, USA.

Highlights of the Kakula 2020 DFS, initial 6.0-Mtpa mine at Kakula, include:

- The Kakula 2020 DFS evaluates the development of a stage one, 6.0-Mtpa underground mine with a surface processing complex at the Kakula Deposit with a capacity of 7.6 Mtpa, built in two modules of 3.8 Mtpa. For this option, the DFS envisages an average annual production rate of 284,000 tonnes of copper at a mine-site cash cost of \$0.52 per pound (lb) copper and total cash cost of \$1.16/lb copper for the first 10 years of operations, and annual copper production of up to 366,000 tonnes by year four.
- Remaining initial capital cost of \$0.65 billion for this option would result in an after-tax net present value at an 8% discount rate (NPV8%) of \$5.5 billion.
- The internal rate of return of 77.0% and project payback period of 2.3 years confirm the compelling economics for the Kamoa-Kakula Project's stage one of production.
- Kakula benefits from an ultra-high feed grade averaging 6.6% copper over the first five years of operations, and 5.2% copper on average over a 21-year mine life.

Highlights of the Kakula-Kansoko 2020 PFS, which incorporates Kansoko mine development, include:

- The Kakula-Kansoko 2020 PFS evaluates the development of mining activities at the Kansoko Deposit in addition to Kakula, initially at a rate of 1.6 Mtpa to fill the 7.6-Mtpa concentrator at Kakula, eventually ramping up to 6.0 Mtpa as the reserves at Kakula are depleted. For this option, the PFS envisages an average annual production rate of 331,000 tonnes of copper at a mine-site cash cost of \$0.55/lb copper and total cash cost of \$1.23/lb copper for the first 10 years of operations, and annual copper production of up to 427,000 tonnes by year four.



- Remaining initial capital cost of \$0.69 billion for this option would result in an after-tax net present value at an 8% discount rate (NPV8%) of \$6.6 billion. The internal rate of return of 69.0% and project payback period of 2.5 years confirm the compelling economics of Kakula and Kansoko.
- The combined Kakula-Kansoko production benefits from an ultra-high feed grade averaging 6.2% copper over the first five years of operations, and 4.5% copper on average over a 37-year mine life.

Highlights of the modular, integrated, expanded development option potential for the Kakula and Kamoia deposits, mining a total of 19 Mtpa, with construction of a direct-to-blister smelter, include:

- The Kamoia-Kakula 2020 PEA presents an additional development option of a multi-stage, sequential operation on Kamoia-Kakula's high-grade copper deposits.
- Initial production from the Kakula Mine at a rate of 6.0 Mtpa, followed by subsequent, separate underground mining operations at the nearby Kansoko, Kakula West and Kamoia North mines, along with the construction of a direct-to-blister smelter. The Kamoia North Area comprises five separate mines that will be developed as resources are mined out elsewhere, to maintain the production rate at up to 19 Mtpa, with an overall life in excess of 40 years.
- For the integrated, 19-Mtpa, multi-stage development, the PEA envisages \$0.7 billion in remaining initial capital costs. Future expansion at the Kansoko Mine, Kakula West Mine and Kamoia North mines would be funded by cash flows from the Kakula Mine, resulting in an after-tax net present value at an 8% discount rate (NPV8%) of \$11.1 billion, an internal rate of return of 56.2%, and a payback period of 3.6 years.
- Under this approach, the PEA also contemplates the construction of a direct-to-blister copper smelter at the Kakula plant site with a capacity to process one million tonnes of copper concentrate per annum to be funded from internal cash flows. This would be completed in year five of operations, achieving significant savings in treatment charges and transportation costs.
- The 19-Mtpa scenario shows the potential for average annual production of 501,000 tonnes of copper at a total cash cost of \$1.07/lb copper during the first 10 years of operations, and production of 805,000 tonnes of copper by year eight.
- At this future production rate, Kamoia-Kakula would rank as the world's second largest copper mine.

The capital costs incurred by the Kamoia-Kakula joint venture amounted to \$309 million in 2019 and \$643 million in 2020. Further capital cost of \$164 million and \$208 million, which includes the costs allocated to the pre-production ore stockpiles, was incurred in Q1 2021 and Q2 2021 respectively. As of June 30, 2021, the joint venture had an estimated \$697 million of initial capital costs remaining for completion of Phase 1 and Phase 2.

### ***Draw-down of equipment financing facility successfully commenced***

On December 1, 2020, Ivanhoe announced the Kamoia-Kakula Project had secured an equipment financing facility of up to EUR 176 million (approximately \$211 million), together with a \$9 million down-payment facility to purchase underground mobile mining equipment and services from leading Swedish manufacturers Sandvik AB and Epiroc AB, and Finnish manufacturer Normet Oy.

The facility has an availability period of three years and amortizes over five years from utilization and is tied to underground mining equipment at the Kamoia-Kakula Project. The Swedish Export Credit Agency (EKN) has provided both political and commercial cover to the lenders and receives a one-off premium per each tranche's first utilization.

After the completion of all conditions precedent, the Kamoia-Kakula Project completed the draw-down of \$9 million of the down-payment facility, and an equivalent of \$56 million of the equipment financing, in December 2020. In 2021, further draw-downs of the equipment financing equivalent of \$16.2 million were completed. Further draw-downs under the equipment finance facilities remain subject to conditions precedent customary for facilities of this nature. The Company expects the conditions precedent to be met prior to each utilization.

The equipment finance is secured only by the equipment that is being financed. The down-payment facility is unsecured. No guarantee is required from any of the sponsors or parent companies with Kamoa Holding Limited issuing a non-binding Letter of Support, confirming its support for the project.

In addition, Gold Mountains (H.K.) International Mining Company has provided Kamoa Holding Limited with a limited recourse line of credit of \$200 million secured by the project's pre-production ore stockpiles to fund the Phase 2 concentrator expansion. Kamoa Holding has not yet drawn on this line of credit.

***Kamoa-Kakula connected to the national power grid, providing clean, renewable 220-kV hydropower***

The mine is receiving hydroelectric power via the permanent 35-kilometre, 220-kilovolt (kV) power line, supplying the project with reliable and clean hydro-generated electricity from the national grid.

The main mine 220-kilovolt Kamoa Consumer Substation (KCS) has been energized on grid power, as has the 33kV KCS substation. The main plant 33kV substation and all the plant medium-voltage and low-voltage substations also are energized.

***Agreement reached to upgrade major turbine at the Inga II hydropower facility***

On April 26, 2021, Ivanhoe announced that Ivanhoe Mines Energy DRC, a subsidiary of Kamoa Holding and sister company of Kamoa Copper SA, tasked with delivering reliable, clean, renewable hydropower to the Kamoa-Kakula Project, signed a memorandum of understanding in a public-private partnership with the DRC's state-owned power company La Société Nationale d'Electricité (SNEL) to upgrade turbine 5, a major turbine at the existing Inga II hydropower facility on the Congo River. The upgraded turbine is expected to produce 162 MW of clean, renewable hydropower, providing the Kamoa-Kakula Copper Mine with sufficient, sustainable electricity for future expansions, including its own copper smelter. A definitive agreement superseding the memorandum of understanding has been prepared and is expected to be signed imminently.

**Photo: Aerial view of the Inga I (rear) and Inga II (front) hydropower plants on the Congo River. The penstock funneling water to turbine 5 at Inga II is circled in red.**





***Ongoing upgrading work enables Mwadingusha hydropower station to supply clean, sustainable electricity***

The upgrading work of six new turbines at the Mwadingusha hydropower plant, the first public-private partnership between Ivanhoe Mines Energy DRC and SNEL, is nearing completion and is expected to soon deliver approximately 78 MW of electricity to the national electrical grid, to provide power for Kamoa-Kakula's initial two phases of production to 7.6 Mtpa. Five of the six new turbines at the Mwadingusha hydropower plant now have been synchronized to the national electrical grid, with each generating unit producing approximately 13 MW of power. The completion and commissioning of the hydropower plant's remaining one generating unit is in progress. The synchronization of this last unit to the grid is expected in August 2021.

The work is being conducted by engineering firm Stucky Ltd. of Renens, Switzerland, under the direction of Ivanhoe Mines and Zijin Mining, in conjunction with the DRC's state-owned power company, SNEL.

**Photo: Aerial view of the 78-MW Mwadingusha hydropower plant, the reservoir and the community of Mwadingusha.**



***Kamoa-Kakula aiming to become the first net-zero carbon emitter among top-tier copper mines by electrifying its mining fleet with state-of-the-art equipment powered by electric batteries or hydrogen fuel cells***

On May 5, 2021, Ivanhoe Mines announced its pledge to achieve net-zero operational greenhouse gas emissions (Scope 1 and 2) at the industry-leading Kamoa-Kakula Copper Mine.

In support of the Paris Agreement on climate change, and in the spirit of the commitments at the April 2021 Leaders Summit on Climate by the Chinese and American governments to sharply cut emissions, Ivanhoe Mines has committed to working with its joint-venture partners and leading underground mining equipment manufacturers to ensure that Kamoa-Kakula becomes the first net-zero operational carbon emitter among the world's top-tier copper producers.

Since the Kamo-Kakula mine and concentrator plant already are powered by clean, renewable hydro-generated electricity, the focus of the Company's net-zero commitment will be on electrifying the project's mining fleet with new, state-of-the-art equipment powered by electric batteries or hydrogen fuel cells.

Kamo-Kakula is working closely with its mining equipment suppliers to decrease the use of fossil fuels in its mining fleet, and evaluate the viability, safety and performance of new electric, hydrogen and hybrid technologies. The mine plans to introduce them into its mining fleet as soon as they become commercially available.

### ***Enriching communities through sustainable development***

The Sustainable Livelihoods Program was founded in 2010 to strengthen food security and farming capacity in the host communities near Kamo-Kakula by establishing an agricultural training garden and support for farmers at the community level. Today, approximately 467 community farmers are benefiting from the Sustainable Livelihoods Program, producing high-quality food for their families and selling the surplus for additional income. The Sustainable Livelihoods Program, which commenced with maize and vegetable production, now includes fruit, aquaculture, poultry and honey.

The construction of 100 new fish ponds is progressing well with 60 ponds complete, of which 21 ponds are fully stocked and operational, and 20 ponds currently under construction. The project will significantly contribute toward local entrepreneurship and enhanced regional food security. The Musokantanda Agronomist Secondary School, constructed and equipped during 2020, now serves as a research facility and offers educational programs to 118 students, as well as training programs to local farmers. Plans also are underway for a collaboration between the agronomy school and the University of Kolwezi, which will provide further practical training for students.

Additional non-farming-related activities continued during Q2 2021 and include education programs, a community brick-making program, a sewing program, and the supply of fresh water to a number of local communities using solar-powered boreholes. The Tujenge brick-making program purchased an additional machine to enable the production of hollow bricks to meet the mine's demand, successfully producing 9,000 bricks so far. To ensure that the sewing team is geared to commence operations and that production of Kamo-Kakula personal protective equipment (PPE) and other garments meet quality standards, 28 members of the project have completed a six-month professional training program. The new Muvunda Primary School, catering to 206 students, has been opened. Construction and equipping of the Kaponda Primary School is underway. A total of 13 of a planned 29 boreholes were drilled in communities using local contractors, providing thousands of community members with easy access to clean water.

Construction of resettlement houses for the relocation program is continuing as planned. To date, 114 homes have been relocated, with 20 households remaining. The remaining families are scheduled for relocation upon completion of the construction of their new homes. Construction of the community church at Kaponda is 80% complete, with all concrete work finalized and the contractor currently installing all door frames and windows.



**Photo: Excellent progress is being made on the new primary healthcare wing of the Kamoia hospital.**



**Photo: Five of the 100 new fish ponds being constructed in surrounding communities under the Kamoia-Kakula Sustainable Livelihoods Program.**





## **PLATREEF PROJECT**

The Platreef Project is owned by Ivanplats (Pty) Ltd (Ivanplats), which is 64%-owned by Ivanhoe Mines. A 26% interest is held by Ivanplats' historically-disadvantaged, broad-based, black economic empowerment (B-BBEE) partners, which include 20 local host communities with approximately 150,000 people, project employees and local entrepreneurs. Ivanplats reached Level 4 contributor status in its most recent verification assessment on the B-BBEE scorecard. A Japanese consortium of ITOCHU Corporation, Japan Oil, Gas and Metals National Corporation, and Japan Gas Corporation, owns a 10% interest in Ivanplats, which it acquired in two tranches for a total investment of \$290 million.

The Platreef Project hosts an underground deposit of thick, platinum-group metals, nickel, copper and gold mineralization on the Northern Limb of the Bushveld Igneous Complex in Limpopo Province – approximately 280 kilometres northeast of Johannesburg and eight kilometres from the town of Mokopane.

On the Northern Limb, platinum-group metals mineralization is primarily hosted within the Platreef, a mineralized sequence that is traced more than 30 kilometres along strike. Ivanhoe's Platreef Project, within the Platreef's southern sector, is comprised of two contiguous properties: Turfspruit and Macalacaskop. Turfspruit, the northernmost property, is contiguous with, and along strike from, Anglo Platinum's Mogalakwena group of mining operations and properties.

Since 2007, Ivanhoe has focused its exploration and development activities on defining and advancing the down-dip extension of its original discovery at Platreef, now known as the Flatreef Deposit, which is amenable to highly-mechanized, underground mining methods. The Flatreef area lies entirely on the Turfspruit and Macalacaskop properties that form part of the Company's mining right.

### ***Health and safety at Platreef***

At the end of June 2021, the Platreef Project reached a total of 57,616 lost-time, injury-free hours worked, after the Project reported the first recordable injury for 2021 in June.

COVID-19 protocols are continuously reviewed and optimized to prevent and mitigate viral spread. During the first 6 months of 2021, the Platreef Project conducted 760 COVID-19 tests, with 38 patients testing positive for COVID-19. In support of the National Department of Health's national vaccine rollout strategy, Ivanplats launched its own on-site COVID-19 vaccination campaign that has administered 279 vaccine doses to date. Approximately 73% of the Platreef Project's employees and contractors working on site have at minimum received their first dose of vaccine.

### ***Powerful economic results of the Platreef Integrated Development Plan 2020***

On November 30, 2020, Ivanhoe Mines published the results of an independent Integrated Development Plan 2020 (IDP20) for the Platreef Project. The Platreef IDP20 encompasses two development scenarios:

- The Platreef 2020 feasibility study (Platreef 2020 FS) updates the feasibility results announced in July 2017. The Platreef 2020 FS evaluates the development of a 4.4 Mtpa underground mine with two concentrators built in modules of 2.2 Mtpa. This update takes into account development schedule advancement since 2017, as well as updated costs, metal prices and foreign exchange assumptions; in addition to increased throughput from 4.0 Mtpa to 4.4 Mtpa to utilize the full processing capacity of the two concentrators.
- The Platreef 2020 preliminary economic assessment (Platreef 2020 PEA) evaluates an alternate, phased development plan that fast-tracks Platreef into production, starting with an initial 700-ktpa underground mine using the existing Shaft 1 and a new on-site concentrator with a capacity of up to 770 ktpa. This phased development plan will be targeting high-grade mining areas in

close proximity to the shaft, requiring significantly lower initial capital costs. After first production has been achieved at Shaft 1, Shaft 2 sinking will commence in tandem with the construction of two additional 2.2 Mtpa concentrator modules and ramp up of the initial concentrator to its full capacity of 770 ktpa. Total mine production will then increase to the envisaged steady-state production of 5.2 Mtpa. Ivanhoe is considering accelerating the expansion by bringing forward the development of Shaft 2.

Highlights of the Platreef 2020 FS, include:

- The Platreef 2020 FS evaluates the development of a 4.4-Mtpa underground mine with two concentrators built in modules of 2.2 Mtpa, which updates the 2017 FS by taking into account development schedule advancement, as well as updated costs, metal prices and foreign exchange assumptions.
- The FS has increased throughput from 4.0 Mtpa to 4.4 Mtpa to utilize the full processing capacity of the two concentrators, which is well within the mining and hoisting capability of Shaft 2.
- Tailings storage methodology has been modified to a dry-stack tailings facility – a sustainable and water-efficient method wherein tailings are placed and compacted in a mound that is concurrently rehabilitated with soil and vegetation during the operating life of the facility.
- The FS has an average annual production rate of 508,000 ounces of platinum, palladium, rhodium and gold (3PE+Au), plus 22 million pounds of nickel and 13 million pounds of copper, at a cash cost of \$442 per ounce of 3PE+Au, net of by-products, and including sustaining capital costs.
- The project schedule is driven by the sinking of Shaft 2, a 10-metre-diameter shaft with total rock hoisting capacity of up to 6.0 Mtpa, plus a 40-tonne-capacity, double-deck man/material cage capable of transporting fully assembled load-haul-dump vehicles and other equipment to support the mine, with first production targeted in 2025.
- Initial capital cost of \$1.4 billion for this option would result in an after-tax net present value at an 8% discount rate (NPV8%) of \$1.8 billion and an internal rate of return (IRR) of 19.8%.
- At spot prices as at November 27, 2020, the NPV8% increases to \$3.7 billion and the IRR increases to 28.4%.

Highlights of the Platreef 2020 PEA, include:

- The Platreef 2020 PEA evaluates the phased development of Platreef, with an initial 700-ktpa underground mine and a 770-ktpa capacity concentrator, targeting high-grade mining areas close to Shaft 1, with a significantly lower initial capital cost of \$390 million.
- First concentrate production for this option is targeted in 2024, with the sinking of Shaft 2 recommencing in 2025 to coincide with the construction of two 2.2-Mtpa concentrators to be completed by 2029 and 2030. This would increase steady production to 5.2 Mtpa by using Shaft 2 as the primary production shaft.
- While the PEA considers the deferral of Shaft 2 sinking to 2025, this is a discrete decision that can commence at any point in time, pending funding.
- By utilizing the 825-ktpa rock-hoisting capacity (including up to 125 ktpa allocated for development rock) of Shaft 1, reduced initial development is required, targeting the nearest and highest-grade stopes with drift-and-fill mining.
- Cost estimates for the phased development plan are largely based on the Platreef 2020 FS, augmented with early drift-and-fill mining and a 770-ktpa concentrator and associated site infrastructure.
- For this option, the PEA envisages phase one during years 1 to 6 at an average annual production rate of 109,000 ounces of platinum, palladium, rhodium and gold (3PE+Au), plus 5 million pounds of nickel and 3 million pounds of copper followed by phase two during years 7 to 30 at an average annual production rate of 613,000 ounces of 3PE+Au, plus 27 million pounds of nickel and 16 million pounds of copper.
- The PEA envisages a life-of-mine cash cost of \$460 per ounce of 3PE+Au, net of by-products, and including sustaining capital costs.

- The after-tax net present value at an 8% discount rate (NPV8%) is \$1.6 billion with an internal rate of return (IRR) of 20.0%. At spot prices as at November 27, 2020, the NPV8% increases to \$3.3 billion and the IRR increases to 29.1%.
- Construction of the 950-metre-level station near the bottom of Shaft 1 was recently completed. This station lies within a few hundred metres of the initial high-grade mining zone that would be targeted during the early years of the phased development plan under the 2020 PEA alternative development scenario.
- In parallel with the changeover of Shaft 1 for permanent hoisting, detailed engineering will take place in 2021 on the mine design, 770-ktpa concentrator and associated infrastructure design, which also will include the dry-stack tailings storage facility. In addition, amendments to the water use licence, waste licence and environmental impact assessment required for the phased development plan will be tabled. Following the completion of the changeover, off-shaft development would take place in early 2022, with the initial aim of establishing a ventilation raise to allow for the development of underground infrastructure from 2023.

All figures are on a 100%-project basis unless otherwise stated. The Platreef IDP20 was independently prepared on a 100%-basis by OreWin Pty Ltd. of Adelaide, Australia; Wood plc (formerly Amec Foster Wheeler) of Vancouver, Canada; SRK Consulting Inc. of Johannesburg, South Africa; Stantec Consulting International LLC of Phoenix, USA; DRA Global of Johannesburg, South Africa; and Golder Associates Africa of Midrand, South Africa.

### ***Phased development plan, detailed engineering and feasibility study progressing well***

Platreef's detailed engineering and updated feasibility study for the phased development plan is progressing well toward completion by late 2021 or early 2022. Most of the design and engineering work has been completed and the focus now is on finalizing cost estimates.

**Photo: Platreef Project with the Shaft 1 headframe on the right and a construction crane working on Shaft 2 in the centre.**



### ***Project-level financing arrangements of up to \$420 million to advance Platreef's development***

In February 2021, Ivanplats signed a non-binding term sheet with Orion Mine Finance, a leading international provider of production-linked stream financing to base and precious metals mining companies, for a \$300 million gold, palladium and platinum streaming facility. The stream financing remains subject to completion of legal due diligence and structuring, as well as negotiation and execution of definitive documentation. The streaming facility is planned to be drawn down in two separate tranches, as needed, in parallel with the engineering studies to upgrade the Platreef 2020 PEA to a feasibility study and the changeover of Platreef's Shaft 1 to a production shaft.

Ivanplats also appointed two prominent, international commercial banks – Societe Generale and Nedbank – as mandated lead arrangers for a senior project debt facility of up to \$120 million. The senior project debt facility is scheduled to be utilized only after the streaming facility is fully drawn. Definitive terms and conditions of the debt facility are subject to the completion of the feasibility study for Platreef's phased development plan, completion of due diligence and structuring, as well as negotiation and execution of definitive documentation. Terms and conditions of the debt facility will be made available when finalized.

### ***Shaft 1 changeover to a production shaft progressing well***

The construction of the 996-metre-level station at the bottom of Shaft 1 was completed in July 2020. Shaft 1 will initially be used to access the orebody, and is approximately 350 metres away from a high-grade area of Flatreef that is planned for bulk, mechanized mining. The three development stations that will provide initial, underground access to the high-grade orebody also have been completed on the 750-, 850-, and 950-metre levels.

Construction of the auxiliary winder foundations has been completed, and the auxiliary winder installed and commissioned. The headgear, both winders, equipping stage, conveyances and control systems comply with the highest current industry safety standards, with proven and tested safety and redundancy systems in place.

The changeover construction at Shaft 1 is progressing to plan and is on schedule for commencement of rock hoisting early in 2022. All equipment for the shaft changeover has been procured and is on site. The changeover work within the shaft is being done by Platreef's experienced owners' team.

The winder that was used to successfully sink Shaft 1 has been converted to function as the main equipping conveyance during the shaft changeover, and will serve as the permanent rock, personnel and material winder following the shaft-equipping phase. The shaft will be equipped with two 12.5-tonne skips (with hoisting capacity of 825,000 tonnes per year) and an interchangeable personnel and materials conveyance to accommodate the movement of personnel and materials during the initial phase of mining.

Rope guides will be used for the main rock, personnel and materials conveyances, while steel sets and guides will be used for the auxiliary winder conveyance. The stage and winder ropes used during the sinking phase have been removed, and the new equipping stage, permanent guide-ropes and permanent hoisting ropes have been installed. The auxiliary winder has been installed and commissioned to assist during the shaft and station equipping phase, and to function as a man winder during the main rock hoisting cycle. Shaft equipping reached the 450-metre-level station in July 2021.

Newly-designed rock chutes will connect the conveyors feeding the concentrator plant and the waste rock area; from there the waste rock will be crushed and used as cemented backfill underground, as well as for protection berms to contain storm water and reduce noise emissions.

Shaft equipping commenced in May 2021 and remains on track to be completed in early 2022. Following the completion of the changeover work in the shaft, underground stations, and establishment of the ore and waste passes, lateral underground mine development will commence toward high-grade ore zones.

### ***Key underground development orders placed***

The design and engineering for the waste conveyor, which will feed from Shaft 1, has been completed with the radial stacker conveyor order placed for delivery in February 2022. Additionally, Ivanplats placed an initial order with Epiroc for its primary mining fleet consisting of emissions-free, battery electric jumbo face drill rigs and load haul dumpers, due for delivery in early 2022.

**Photo: An Epiroc Scooptram ST14 Battery loader, one of the emissions-free mining machines ordered by Ivanplats to begin underground development at the Platreef Mine.**



***Shaft 2 headgear construction from hitch to collar well underway***

Early-works surface construction for Shaft 2 began in 2017, including the excavation of a surface box-cut to a depth of approximately 29 metres below surface and construction of the concrete hitch for the 103-metre-tall concrete headgear (headframe), which will house the shaft's permanent hoisting facilities and support the shaft collar. The Shaft 2 headframe construction, from the hitch to the collar level, is progressing well with the first and second headgear lifts well advanced. A total of 10 civil lifts are to be constructed, including a ventilation plenum and personnel access tunnel, with a targeted completion of May 2022.

***Underground mining to incorporate highly-productive, mechanized methods***

Mining zones in the current Platreef mine plan occur at depths ranging from approximately 700 metres to 1,200 metres below surface. Initial access to the mine will be via the 996-metre-deep, 7.25-metre-diameter Shaft 1, that recently has been sunk to its final depth. Once expanded mine production is achieved, primary access to the mine will be by way of a 1,104-metre-deep, 10-metre-diameter production shaft (Shaft 2). During mine production, both shafts also will serve as ventilation intakes. Three additional ventilation exhaust raises (Ventilation Raise 1, 2 and 3) are planned to achieve steady-state production.

Mining will be performed using highly-productive mechanized methods, including long-hole stoping and drift-and-fill. Each method will utilize cemented backfill for maximum ore extraction. The production plans in both the PEA's initial five-year drift-and-fill mining operation hoisting from Shaft 1, and the expansion when Shaft 2 is available, are focused on maximizing higher-grade areas, which is achieved through optimization based on stope locations, stope grades, mining method, and zone productivities. The orebody was targeted to recover approximately 125 million tonnes at the highest net smelter return.

Ore will be hauled from the stopes to a series of internal ore passes and fed to the bottom of the shafts, where it will be crushed and hoisted to surface.



**Photo: Platreef's Shaft 2 construction, raising the headframe from the hitch to the collar (at surface).**



### ***Long-term supply of bulk water for the Platreef Mine***

In May 2018, Ivanhoe announced the signing of an agreement to receive local, treated water to supply most of the bulk water needed for the first phase of production at Platreef. The Mogalakwena Local Municipality agreed to supply a minimum of five million litres of treated water a day for 32 years from the town of Mokopane's new Masodi Treatment Works. Ivanplats has agreed to work with the municipality to complete the treatment facility in time to be used in Platreef's ongoing underground mine development and surface infrastructure construction.

Under the terms of the agreement, which is subject to certain suspensive conditions, Ivanplats will provide financial assistance to the municipality for certified costs of up to a maximum of R248 million (approximately \$17 million) to complete the Masodi treatment plant. Ivanplats will purchase the treated wastewater at a reduced rate of R5 per thousand litres for the first 10 million litres per day to offset a portion of the initial capital contributed.

During June 2021 and in addition to the Masodi treatment plant, Ivanplats also signed and undertaking to participate with the Lebalalo Water User Association for an additional 10 million litres per day from the Olifants River Water Resources Development Project. The initial agreement is to partake in a feasibility study for this venture with the prospect of securing an additional long-term water supply for the Platreef Project.

### ***Development of human resources and job skills***

The Platreef Project's second Social and Labour Plan (SLP) now has been approved. Through the implementation of this second SLP, Ivanplats plans to build on the first SLP and continue with its

training and development suite, which includes 15 new mentors, internal skills training for 78 staff members, a legends program to prepare retiring employees with new/other skills, community adult education training for host community members, core technical skills training for at least 100 community members, portable skills training, and more. The Platreef Project continues to support several educational programs and the provision of free Wi-Fi in host communities.

Local economic development projects will contribute to community water-source development through the Mogalakwena Municipality boreholes program. Other projects, which will be undertaken in partnership with other parties, include the refurbishment and equipping of a clinic in Tshamahansi Village.

The enterprise and supplier development commitments comprise of expanding the existing kiosk and laundry facilities and adding expanded change house facilities to be managed by a community partner in the future. A five-year integrated business accelerator and funding project will assist community members to obtain help with development and supplier readiness.

## **KIPUSHI PROJECT**

The Kipushi copper-zinc-germanium-silver-lead mine in the DRC is adjacent to the town of Kipushi and approximately 30 kilometres southwest of Lubumbashi. It is located on the Central African Copperbelt, approximately 250 kilometres southeast of the Kamoa-Kakula Project and less than one kilometre from the Zambian border. Ivanhoe acquired its 68% interest in the Kipushi Project in November 2011; the balance of 32% is held by the state-owned mining company, Gécamines.

### ***Health and safety at Kipushi***

At the end of June 2021, the Kipushi Project reached a total of 3,441,678 work hours free of lost-time injuries. It has been more than two and a half years since the last lost-time injury occurred at the project.

Since temporarily suspending mine development operations due to the COVID-19 pandemic, the project maintained a reduced workforce to safely and cost-effectively maintain infrastructure and pumping systems and to execute planned projects.

The Kipushi Project has built a new potable water station to provide a free daily supply of water to the municipality of Kipushi. The daily support in supply of free potable water to the Kipushi municipality community members includes power supply, disinfectant chemicals, routine maintenance, security and emergency repair of leaks to the primary reticulation to the benefit of an estimated 100,000 people, excluding those from rural areas. Approximately 1,000 cubic metres of potable water is pumped hourly and continuously to consumers on a daily basis.

50 boreholes of potable water are planned to be drilled around the Kipushi district over five years to reach areas not served by the current distribution reticulation. To date, 11 solar-powered potable water wells have been drilled and operate throughout the district.

The Kipushi Project continues to support educational initiatives through renovations and the supply of school desks to the Mungoti School, and the granting of bursaries and scholarships to students from Kipushi. Over the past four years, approximately 300 students have been supported through the bursary program. The sewing training centre project established by the Kipushi Project continued producing cloth face masks, donating approximately 2,000 masks a month to host communities. The Kipushi Project also is broadcasting daily COVID-19 awareness messages on a local community radio station, as well as through a motorized caravan.

The Sustainable Livelihoods Program, which commenced in 2020 with a poultry farming initiative established for the benefit of a consortium of local women, is progressing well with more than 500 chickens having been brought to market. This program is planned for expansion around the Kipushi district.



### ***Kipushi's definitive feasibility study in final stages of completion***

The Kipushi Project's pre-feasibility study (PFS), announced by Ivanhoe Mines on December 13, 2017, anticipated annual production of an average of 381,000 tonnes of zinc concentrate over an 11-year, initial mine life at a total cash cost of approximately \$0.48 per pound (lb) of zinc.

Highlights of the PFS, based on a long-term zinc price of \$1.10/lb, include:

- After-tax net present value (NPV) at an 8% real discount rate of \$683 million.
- After-tax real internal rate of return (IRR) of 35.3%.
- After-tax project payback period of 2.2 years.
- Pre-production capital costs, including contingency, of \$337 million.
- Existing surface and underground infrastructure allow for significantly lower capital costs than comparable greenfield development projects.
- Life-of-mine average planned zinc concentrate production of 381,000 dry tonnes per annum, with a concentrate grade of 59% zinc, is expected to rank Kipushi, once in production, among the world's largest zinc mines.

All figures are on a 100%-project basis unless otherwise stated. Estimated life-of-mine average cash cost of \$0.48/lb of zinc is expected to rank Kipushi, once in production, in the bottom quartile of the cash-cost curve for zinc producers internationally.

The draft definitive feasibility study, together with the development and financing plan for Kipushi, are being reviewed by Ivanhoe Mines and its partner Gécamines. It is anticipated that these discussions will be concluded with the finalization of the feasibility study and the agreement on the development and financing plan by Q4 2021.

**Photo: (L-R) Ethienne Mulambe, Jhon Nkunda and Mulanga stripping out the old winder from Kipushi's Shaft 15.**



### ***Project development and infrastructure***

Although development and rehabilitation activities in the first half of 2021, as well as for 2020, were limited, significant progress has been made in recent years to modernize the Kipushi Mine's underground infrastructure as part of preparations for the mine to resume commercial production, including upgrading a series of vertical mine shafts to various depths, with associated headframes, as well as underground mine excavations and infrastructure. A series of crosscuts and ventilation infrastructure still is in working condition and have been cleared of old materials and equipment to facilitate modern, mechanized mining. The underground infrastructure also includes a series of high-capacity pumps to manage the mine's water levels, which now are easily maintained at the bottom of the mine.

Shaft 5 is eight metres in diameter and 1,240 metres deep and has been upgraded and re-commissioned. The main personnel and material winder has been upgraded and modernized to meet international industry standards and safety criteria. The Shaft 5 rock-hoisting winder also is fully operational with new rock skips, new head- and tail-ropes, and attachments installed. The two newly-manufactured rock conveyances (skips) and the supporting frames (bridles) have been installed in the shaft to facilitate the hoisting of rock from the main ore and waste storage silos feeding rock on the 1,200-metre level.

Since temporarily suspending mine development operations, priority engineering tasks still continue, including new winder installations as a second means of egress on the cascade side, and repairs, as well as replacement of main critical pump columns in Shaft 5 to ensure reliable and continued pumping of water from the mine.

**Photo: Gael Shimatu drilling an anchor hole to install a safety barricade.**



## **DRC WESTERN FORELAND EXPLORATION PROJECT**

Ivanhoe's DRC exploration group is targeting Kamo-Kakula-style copper mineralization through a regional exploration and drilling program on its Western Foreland exploration licences, located to the north, south and west of the Kamo-Kakula Project. Ivanhoe's Western Foreland Exploration Project consists of 17 licences that cover a combined area of approximately 2,550 square kilometres.

Exploration models that successfully led to the discoveries of Kakula, Kakula West, and the Kamo North Bonanza Zone on the Kamo-Kakula joint-venture mining licence are being applied to the extensive Western Foreland land package by the same team of exploration geologists responsible for previous discoveries.

Exploration activities at the Western Foreland area continued during Q2 2021, with drilling in the western and eastern extensions of the main Makoko area.

In Q2 2021, 32 diamond holes were completed at the Makoko area, on the west and the east of the main Makoko areas, following a fence of 1,000-metre spacing for a total of 7,310 metres. These results are pending assay. A 200-metre by 200-metre soil-sampling grid on this zone is planned for Q3 2021 for a follow-up on the previous soil geochemistry work.

Diamond drilling started at the Kiala discovery zone in late April. Nine holes have been drilled in the area to date for a total of 2,947 metres, investigating the extension to the north of the high-grade copper structure, as well as exploring the western extent of the zone. Assay results are pending.

The construction of a 16-kilometre road to provide critical access to the new exploration target areas on the newly-acquired western permits has been completed, as well as a bridge over the Lubudi River. Construction of a 60-kilometre access spine road across the western permits also has started, with 20 kilometres having been cleared to date, of which six kilometres have been covered with laterite. The plan is to complete the final bridge construction toward the end of the year once the spine road is complete.

Geophysical airborne surveys such as magnetics, gravity and electromagnetics are scheduled to start in early Q3 2021 in the Western Foreland and the Kamo North areas. This new geophysical data will enhance the target delineation program for drill testing and soil sampling.

The recent Makoko West drilling is extremely significant for the exploration potential of the new exploration permits as it demonstrates that the target stratigraphy extends westward and that the copper mineralizing system on the western edge of the basin is laterally extensive. Future drilling in the Makoko West area will target specific structural locations that are conducive to developing higher copper grades.



Photo: Ivanhoe Mines’ Western Foreland exploration core shack at the Makoko Discovery.



COPPER PRODUCTION GUIDANCE FOR 2021

Overall construction of the project’s first phase, 3.8-Mtpa concentrator plant and associated facilities is complete, with C4 or hot commissioning advancing according to plan. First ore was introduced into the ball mills on May 20, 2021, and first saleable concentrate was filtered on May 25, 2021, marking the start of concentrate production. As at June 30, 2021, contained copper in concentrate produced by the Kamoakakula Project amounted to 9,858 tonnes. Ivanhoe’s guidance for contained copper in concentrate expected to be produced by the Kamoakakula Project for 2021 assumes ramp-up from first production continues in line with published technical disclosures, and is as follows:

		2021 Guidance
<b>Kamoakakula Project</b>		
Contained copper in concentrate	tonnes	80,000 - 95,000

All figures in the above table are on a 100%-project basis. Metal reported in concentrate is prior to refining losses or deductions associated with smelter terms. Cost guidance is expected to be provided once the Kamoakakula Project’s Phase 1 plant has operated at steady state production for a continuous period.

## SELECTED QUARTERLY FINANCIAL INFORMATION

The following table summarizes selected financial information for the prior eight quarters. Ivanhoe had no operating revenue in any financial reporting period and did not declare or pay any dividend or distribution in any financial reporting period.

	Three months ended			
	June 30,	March 31,	December 31,	September 30,
	2021	2021	2020	2020
	\$'000	\$'000	\$'000	\$'000
Exploration and project evaluation expenditure	11,972	8,722	13,754	9,972
General administrative expenditure	13,165	7,919	6,973	4,868
Share of losses from joint venture	9,960	4,093	6,151	7,323
Share-based payments	4,068	3,327	4,824	4,250
Loss (gain) on fair valuation of financial liability	85,700	(25,600)	-	-
Finance income	(25,095)	(22,780)	(21,032)	(20,241)
Finance costs	10,110	1,791	1,464	69
Total comprehensive loss (income) attributable to:				
Owners of the Company	92,793	(20,339)	(33,170)	(3,032)
Non-controlling interest	2,901	4,102	1,349	4,049
Basic loss (profit) per share	0.09	(0.02)	(0.00)	0.00
Diluted loss (profit) per share	0.09	(0.02)	(0.00)	0.00

	Three months ended			
	June 30,	March 31,	December 31,	September 30,
	2020	2020	2019	2019
	\$'000	\$'000	\$'000	\$'000
Exploration and project evaluation expenditure	9,018	11,980	3,664	3,266
General administrative expenditure	7,464	14,016	5,642	4,985
Share of losses from joint venture	6,597	6,728	5,610	7,084
Share-based payments	4,180	3,677	3,320	2,744
Finance income	(18,672)	(20,810)	(20,761)	(18,920)
Finance costs	70	100	76	71
Total comprehensive (income) loss attributable to:				
Owners of the Company	(3,458)	65,736	(25,182)	13,077
Non-controlling interest	3,123	10,889	(317)	3,718
Basic loss (profit) per share	0.00	0.01	(0.01)	(0.00)
Diluted loss (profit) per share	0.00	0.01	(0.01)	(0.00)

## DISCUSSION OF RESULTS OF OPERATIONS

### *Accounting for the convertible notes closed in March 2021*

The Company closed a private placement offering of \$575.0 million of 2.50% convertible senior notes maturing in 2026 on March 17, 2021. Upon conversion, the convertible notes may be settled, at the Company's election, in cash, common shares or a combination thereof. Due to this election right, the convertible notes have an embedded derivative liability that is measured at fair value with changes in value being recorded in profit or loss, as well as the host loan that is accounted for at amortized cost.

The convertible senior notes are senior unsecured obligations of the Company which will accrue interest payable semi-annually in arrears at a rate of 2.50% per annum and will mature on April 15, 2026, unless earlier repurchased, redeemed or converted. The initial conversion rate of the notes is 134.5682 Class A common shares of the Company per \$1,000 principal amount of notes, or an initial conversion price of approximately \$7.43 (equivalent to approximately C\$9.31) per common share.

Holders of the notes may convert the notes, at their option, in integral multiples of \$1,000 principal amount, or in excess thereof, at any time until the close of business on the business day immediately preceding October 15, 2025, but only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on June 30, 2021 (and only during such calendar quarter), if the last reported sale price of the Company's Class A common shares for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; or
- during the five consecutive business day period after any ten consecutive trading day period (the "measurement period") in which the trading price per \$1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's Class A common shares and the conversion rate on each such trading day; or
- if the Company calls any or all of the notes for redemption in certain circumstances or upon the occurrence of certain corporate events.

On or after October 15, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert all or any portion of their notes, in multiples of \$1,000 principal amount, at the option of the holder regardless of the foregoing conditions.

The convertible notes will not be redeemable at the Company's option prior to April 22, 2024, except upon the occurrence of certain tax law changes. On or after April 22, 2024 and on or prior to the 41st scheduled trading day immediately preceding the maturity date, the notes will be redeemable at the Company's option if the last reported sale price of the Company's common shares has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the convertible notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

Due to the fact that upon conversion, the notes may be settled, at the Company's election, in cash, common shares or a combination thereof, the conversion feature is a derivative financial liability. The effect of this is that the host liability will be accounted for at amortized cost, with an embedded derivative liability being measured at fair value with changes in value being recorded in profit or loss.

The effective interest rate of the host liability was deemed to be 9.39% and the interest recognized on the convertible notes amounted to \$9.8 million in Q2 2021 and \$11.3 million for the six months ended June 30, 2021. The carrying value of the host liability was \$425.3 million as at June 30, 2021.

The derivative liability had a fair value of \$150.5 million on closure of the convertible notes offering, which decreased to \$124.9 million as at March 31, 2021 and increased to \$210.6 million as at June 30, 2021, resulting in a gain on fair valuation of financial liability of \$25.6 million for Q1 2021 and a loss on fair valuation of financial liability of \$85.7 million for Q2 2021. The change in the fair value of the embedded derivative liability is largely due to the changes in the closing share price of the Company's common shares at the different reporting dates.

The following key inputs and assumptions were used in determining the fair value of the embedded derivative liability:

	<b>March 17, 2021</b>	<b>March 31, 2021</b>	<b>June 30, 2021</b>
Share price	C\$7.00	C\$6.47	C\$8.95
Credit spread	630 basis points	610 basis points	487 basis points
Volatility	42%	42%	40%
Borrowing cost	50 basis points	50 basis points	50 basis points

Transaction costs on the convertible notes offering relating to the derivative liability amounted to \$3.7 million and was expensed and included in the profit and loss for Q1 2021.

#### *Review of the three months ended June 30, 2021 vs. June 30, 2020*

The Company recorded a total comprehensive loss of \$95.7 million for Q2 2021 compared to income of \$0.3 million for the same period in 2020.

As explained above, the Company recognized a loss on fair valuation of the embedded derivative financial liability of \$85.7 million for Q2 2021. Finance cost increased from \$0.1 million for Q2 2020 to \$10.1 million for the same period in 2021, \$9.8 million of which related to the interest on the convertible notes at the effective interest rate.

Finance income for Q2 2021 amounted to \$25.1 million, and was \$6.4 million more than for the same period in 2020 (\$18.7 million). Included in finance income is the interest earned on loans to the Kamoa Holding joint venture to fund operations that amounted to \$23.0 million for Q2 2021, and \$16.4 million for the same period in 2020, and increased as the accumulated loan balance increased.

Exploration and project evaluation expenditure amounted to \$12.0 million in Q2 2021 and \$9.0 million for the same period in 2020. Exploration and project evaluation expenditure related to exploration at Ivanhoe's Western Foreland exploration licences and amounts spent at the Kipushi Project which was on reduced activities and incurred limited cost of a capital nature during these periods. The main classes of expenditure at the Kipushi Project in Q2 2021 and Q2 2020 are set out in the following table:

	<b>Three months ended June 30,</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$'000</b>	<b>\$'000</b>
<b>Kipushi Project</b>		
Salaries and benefits	2,672	3,585
Other expenditure	2,309	1,308
Depreciation	1,842	1,389
Electricity	861	897
Studies and contracting work	112	362
Other additions to property, plant and equipment	17	614
Total project expenditure	7,813	8,155
<i>Exclude:</i>		
Other additions to property, plant and equipment	(17)	(614)
Exploration and project evaluation expenditure in the loss from operating activities	7,796	7,541

The Company's share of losses from the Kamoa Holding joint venture increased from \$6.6 million in Q2 2020 to \$10.0 million in Q2 2021. The following table summarizes the Company's share of losses of the joint venture for the three months ended June 30, 2021, and for the same period in 2020:

	<b>Three months ended June 30,</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$'000</b>	<b>\$'000</b>
Finance costs	21,906	18,711
Exploration expenses	2,058	2,338
Foreign exchange losses	(24)	(28)
Finance income	(1,238)	(1,193)
Loss before taxes	22,702	19,828
Deferred tax recovery	(97)	(4,431)
Loss after taxes	22,605	15,397
Non-controlling interest of Kamoa Holding	(2,485)	(2,068)
Loss for the period attributable to joint venture partners	20,120	13,329
Company's share of losses from joint venture (49.5%)	9,960	6,597

The finance costs in the Kamoa Holding joint venture relates to shareholder loans where each shareholder is required to fund Kamoa Holding in an amount equivalent to its proportionate shareholding interest. The Company is advancing Crystal River's portion on its behalf in return for an increase in the promissory note due to Ivanhoe.



*Review of the six months ended June 30, 2021 vs. June 30, 2020*

The Company recorded a total comprehensive loss of \$79.5 million for the six months ended June 30, 2021 compared to a loss of \$76.3 million for the same period in 2020. As explained above, the Company recognized a loss on fair valuation of the embedded derivative financial liability of \$60.1 million for the six months ended June 30, 2021.

The comprehensive loss for the six months ended June 30, 2020, included an exchange loss on translation of foreign operations of \$53.9 million, resulting from the weakening of the South African Rand by 24% from December 31, 2019, to June 30, 2020, compared to an exchange gain on translation of foreign operations recognized for the same period in 2021 of \$8.7 million.

Finance income for the six months ended June 30, 2021, amounted to \$47.9 million, and was \$8.4 million more than for the same period in 2020 (\$39.5 million). Included in finance income is the interest earned on loans to the Kamoia Holding joint venture to fund operations that amounted to \$44.1 million for the six months ended June 30, 2021, and \$32.7 million for the same period in 2020, interest increased as the accumulated loan balance increased. Interest received on cash and cash equivalents decreased due to US interest rate cuts by the Federal Reserve.

Exploration and project evaluation expenditure amounted to \$20.7 million for the six months ended June 30, 2021, and \$21.0 million for the same period in 2020. Exploration and project evaluation expenditure related to exploration at Ivanhoe's Western Foreland exploration licences and amounts spent at the Kipushi Project which was on reduced activities and incurred limited cost of a capital nature in the periods. The main classes of expenditure at the Kipushi Project for the six months ended June 30, 2021 and for the same period in 2020 are set out in the following table:

	<b>Six months ended</b>	
	<b>June 30,</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$'000</b>	<b>\$'000</b>
<b>Kipushi Project</b>		
Salaries and benefits	4,417	7,347
Other expenditure	4,091	3,616
Depreciation	3,706	3,121
Electricity	1,739	2,064
Studies and contracting work	130	1,375
Other additions to property, plant and equipment	17	775
Total project expenditure	14,100	18,298
<i>Exclude:</i>		
Other additions to property, plant and equipment	(17)	(775)
Exploration and project evaluation expenditure in the loss from operating activities	14,083	17,523

The Company's share of losses from the Kamoia Holding joint venture increased from \$13.3 million for the six months ended June 30, 2020 to \$14.1 million for the same period 2021. The following table summarizes the Company's share of the losses of Kamoia Holding for the six months ended June 30 2021, and for the same period in 2020:

	Six months ended June 30,	
	2021 \$'000	2020 \$'000
Finance costs	43,077	38,150
Exploration expenses	2,435	4,965
Foreign exchange losses	64	102
Other income	(65)	—
Finance income	(2,468)	(2,852)
Loss before taxes	43,043	40,365
Deferred tax recovery	(9,991)	(9,167)
Loss after taxes	33,052	31,198
Non-controlling interest of Kamoia Holding	(4,663)	(4,278)
Loss for the period attributable to joint venture partners	28,389	26,920
Company's share of losses from joint venture (49.5%)	14,053	13,325

*Financial position as at June 30, 2021 vs. December 31, 2020*

The Company's total assets increased by \$567.2 million, from \$2,417.1 million as at December 31, 2020, to \$2,984.3 million as at June 30, 2021. The main reason for the increase in total assets was the receipt of the net proceeds from the convertible senior notes that closed on March 17, 2021. The net proceeds from the sale of the convertible notes, after deducting the expenses of the offering that related to the host liability of \$10.3 million, was \$564.7 million.

Cash and cash equivalents increased by \$381.6 million, from \$262.8 million as at December 31, 2020, to \$644.5 million as at June 30, 2021 due to the receipt of the convertible note proceeds. The Company utilized \$36.4 million of its cash resources in its operations and advanced loans of \$127.6 million to the Kamoia Holding joint venture during the six months ended June 30, 2021.

The Company's total liabilities increased by \$637.3 million to \$717.9 million as at June 30, 2021, from \$80.6 million as at December 31, 2020, with the increase mainly due to the private placement offering of \$575.0 million of 2.50% convertible senior notes described above.

The net increase of property, plant and equipment amounted to \$24.5 million, with additions of \$19.9 million to project development and other property, plant and equipment. Of this total, \$19.4 million pertained to development costs and other acquisitions of property, plant and equipment at the Platreef Project.

The main components of the additions to property, plant and equipment – including capitalized development costs – at the Platreef Project for the six months ended June 30, 2021, and for the same period in 2020, are set out in the following table:

	<b>Six months ended</b>	
	<b>June 30,</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$'000</b>	<b>\$'000</b>
<b>Platreef Project</b>		
Studies and contracting work	4,401	651
Salaries and benefits	4,189	2,973
Shaft 1 changeover and construction	3,752	12,192
Administrative and other expenditure	2,706	1,950
Shaft 2 construction works	2,351	14
Site costs	1,227	444
Social and environmental	662	310
Infrastructure	–	2
Total development costs	19,288	18,536
Other additions to property, plant and equipment	161	8
Total additions to property, plant and equipment for Platreef	19,449	18,544

Costs incurred at the Platreef Project are deemed necessary to bring the project to commercial production and are therefore capitalized as property, plant and equipment.

The Company's investment in the Kamoia Holding joint venture increased by \$157.7 million from \$1,289.5 million as at December 31, 2020, to \$1,447.2 million as at June 30, 2021, with each of the current shareholders funding the operations equivalent to their proportionate shareholding interest. The Company's portion of the Kamoia Holding joint venture cash calls amounted to \$127.6 million during the six months ended June 30, 2021, while the Company's share of losses from the joint venture amounted to \$14.1 million.

The Company's investment in the Kamoia Holding joint venture can be broken down as follows:

	June 30, 2021	December 31, 2020
	\$'000	\$'000
Company's share of net assets of the joint venture	136,468	150,520
Loan advanced to joint venture	1,310,760	1,138,992
Total investment in joint venture	1,447,228	1,289,512

The Kamoia Holding joint venture principally uses loans advanced to it by its shareholders to advance the Kamoia-Kakula Project through investing in development costs and other property, plant and equipment, as well as continuing with exploration. This can be evidenced by the movement in the Company's share of net assets in the Kamoia Holding joint venture which can be broken down as follows:

	June 30, 2021		December 31, 2020	
	100%	49.5%	100%	49.5%
	\$'000	\$'000	\$'000	\$'000
<b>Assets</b>				
Property, plant and equipment	1,700,150	841,574	1,316,708	651,770
Mineral property	802,021	397,000	802,021	397,000
Cash and cash equivalents	288,087	142,603	138,805	68,708
Long term loan receivable	159,509	78,957	155,815	77,128
Deferred tax asset	153,927	76,194	143,891	71,226
Prepaid expenses	137,981	68,301	114,784	56,818
Non-current inventory	131,841	65,261	109,516	54,210
Indirect taxes receivable	120,920	59,855	91,862	45,472
Consumable stores	61,420	30,403	32,883	16,277
Right-of-use asset	22,782	11,277	24,689	12,221
Current inventory	13,639	6,751	—	—
Non-current deposits	1,689	836	1,689	836
<b>Liabilities</b>				
Shareholder loans	(2,647,248)	(1,310,388)	(2,300,271)	(1,138,634)
Advance payment facility	(301,118)	(149,053)	—	—
Trade and other payables	(135,517)	(67,081)	(131,167)	(64,927)
Equipment finance facility	(72,574)	(35,924)	(57,556)	(28,490)
Rehabilitation provision	(27,840)	(13,781)	(19,916)	(9,858)
Lease liability	(24,765)	(12,259)	(26,318)	(13,027)
Other provisions	(22,887)	(11,329)	(2,365)	(1,171)
Non-controlling interest	(86,324)	(42,730)	(90,987)	(45,039)
<b>Net assets of the joint venture</b>	<b>275,693</b>	<b>136,468</b>	<b>304,083</b>	<b>150,520</b>

The Kamoia Holding joint venture completed the draw-down of EUR 45 million (approximately \$56 million) of the equipment financing and \$9 million of the down-payment facilities in late December 2020 and EUR 13.4 million (approximately \$16.2 million) of the equipment financing during the six months ended June 30, 2021. The equipment finance is secured only by the equipment that is being financed and has an effective interest rate of 8.96%. The down-payment facility is unsecured and has an effective interest rate of 11.58%.

Furthermore, Kamoia Copper elected to draw the \$300 million advance payment facility available under its offtake agreements in June 2021. The facility bears interest at a rate of 8% and will be offset against provisional payments due to Kamoia Copper from product deliveries.



The Kamo Holding joint venture's net increase in property, plant and equipment from December 31, 2020, to June 30, 2021, amounted to \$383.4 million and can be further broken down as follows:

	Six months ended June 30,	
	2021	2020
	\$'000	\$'000
<b>Kamo Holding joint venture</b>		
Kakula decline and mine development	222,822	80,372
Salaries and benefits	57,624	11,822
Borrowing costs capitalized	46,065	27,885
Office and administrative expenditure	25,153	11,406
Studies and contracting work	18,111	30,280
Other development costs	13,219	24,102
Camp and office construction	4,803	7,015
Project fleet	3,145	904
Site costs, security and safety	863	5,220
Roads	86	4,057
Total development costs	391,891	203,063
Other additions to property, plant and equipment	3,153	27,502
Total additions to property, plant and equipment for Kamo Holding	395,044	230,565
Less depreciation, disposals and foreign exchange translation	(11,602)	(5,686)
Net increase in property, plant and equipment of Kamo Holding	383,442	224,879

## LIQUIDITY AND CAPITAL RESOURCES

The Company had \$644.5 million in cash and cash equivalents as at June 30, 2021. At this date, the Company had consolidated working capital of approximately \$689.9 million, compared to \$544.8 million at December 31, 2020.

Since December 8, 2015, each shareholder in Kamo Holding has been required to fund Kamo Holding in an amount equivalent to its proportionate shareholding interest. The Company is advancing Crystal River's portion on its behalf in return for an increase in the promissory note due to Ivanhoe.

The Platreef Project's current expenditure is being funded solely by Ivanhoe, through an interest-bearing loan to Ivanplats, as the Japanese consortium has elected not to contribute to current expenditures.

The Company's main objectives for the remainder of 2021 at the Platreef Project is the detailed engineering and updated feasibility study for the phased development plan, progression of the Shaft 1 changeover and the construction of the Shaft 2 headframe to the collar. At Kipushi, cost-saving measures will continue until the finalization of the feasibility study and the development and financing plan are agreed. With first production achieved at the Kamo-Kakula Project, construction of the Phase 2 concentrator expansion and associated infrastructure continues.

The Company has forecast to spend \$56 million on further development at the Platreef Project; \$17 million at the Kipushi Project; \$15 million on Western Foreland exploration projects; and \$16 million on corporate overheads for the remainder of 2021.

The Kamo Holding joint venture had cash and cash equivalents on hand of \$288.1 million as at June 30, 2021. Going forward, all Phase 1 operating costs and the majority of Phase 2 capital

expenditures are expected to be funded from copper sales and facilities in place at Kamoia. Ivanhoe's proportionate funding of Kamoia-Kakula's Phase 2 construction capital costs for the remainder of 2021 is expected to be \$85 million, with the assumption that the limited recourse line of credit from Zijin is not drawn.

On March 17, 2021, the Company closed a private placement offering of \$575 million of 2.50% convertible senior notes maturing in 2026. The convertible senior notes are senior unsecured obligations of the Company which will accrue interest payable semi-annually in arrears at a rate of 2.50% per annum and will mature on April 15, 2026, unless earlier repurchased, redeemed or converted. The notes will be convertible at the option of holders, prior to the close of business on the business day immediately preceding October 15, 2025, only under certain circumstances and during certain periods, and thereafter, at any time until the close of business on the second scheduled trading day immediately preceding the maturity date. Upon conversion, the notes may be settled, at the Company's election, in cash, common shares or a combination thereof. The carrying value of the host liability was \$425.3 million and the fair value of the embedded derivative liability was \$210.6 million as at June 30, 2021.

The Company has a mortgage bond outstanding on its offices in London, United Kingdom, of £3.2 million (\$4.5 million). The bond is fully repayable on August 28, 2025, secured by the property and incurs interest at a rate of GBP 1 month LIBOR plus 1.9% payable monthly in arrears. Only interest will be payable until maturity.

In 2013, the Company became party to a loan payable to ITC Platinum Development Limited, which had a carrying value of \$32.9 million as at June 30, 2021, and a contractual amount due of \$34.8 million. The loan is repayable once the Platreef Project has residual cashflow, which is defined in the loan agreement as gross revenue generated by the Platreef Project, less all operating costs attributable thereto, including all mining development and operating costs. The loan attracts interest of USD 3 month LIBOR plus 2% calculated monthly in arrears. Interest is not compounded. The difference of \$1.9 million between the contractual amount due and the carrying value of the loan is the benefit derived from the low-interest loan.

The Company has an implied commitment in terms of spending on work programs submitted to regulatory bodies to maintain the good standing of exploration and exploitation permits at its mineral properties. The following table sets forth the Company's long-term obligations:

	Payments Due By Period				
		Less than			After
Contractual obligations as at	Total	1 year	1-3 years	4-5 years	5 years
June 30, 2021	\$'000	\$'000	\$'000	\$'000	\$'000
Convertible notes	579,135	4,135	-	575,000	-
Debt	39,282	-	-	4,473	34,809
Lease commitments	1,671	502	1,120	49	-
<b>Total contractual obligations</b>	<b>620,088</b>	<b>4,637</b>	<b>1,120</b>	<b>579,522</b>	<b>34,809</b>

Debt in the above table represents the mortgage bond owing to Citibank and loan payable to ITC Platinum Development Limited, as described above.

The Company is required to fund its Kamoia Holding joint venture in an amount equivalent to its proportionate shareholding interest.

## OFF-BALANCE SHEET ARRANGEMENTS

The Company had no off-balance sheet arrangements for the periods under review.

## TRANSACTIONS WITH RELATED PARTIES

The following tables summarize related party income earned and expenses incurred by the Company, primarily on a cost-recovery basis, with companies related by way of directors or significant shareholders in common. The tables summarize the transactions with related parties and the types of income earned and expenditures incurred with such parties. Amounts in brackets denote income.

	Three months ended		Six months ended	
	June 30,		June 30,	
	2021	2020	2021	2020
	\$'000	\$'000	\$'000	\$'000
Kamoa Holding Limited (a)	(22,960)	(16,392)	(44,140)	(32,679)
Kamoa Services (Pty) Ltd. (b)	(1,851)	–	(1,851)	–
High Power Exploration Inc. (c)	(1,274)	(1,034)	(2,264)	(2,084)
Ivanhoe Mines Energy DRC Sarl (d)	(14)	(45)	(60)	(109)
Ivanhoe Capital Aviation Ltd. (e)	1,125	875	2,233	1,750
Kamoa Copper SA (f)	962	(1,767)	(917)	(3,937)
Global Mining Management Corporation (g)	162	1,763	427	2,354
Ivanhoe Capital Services Ltd. (h)	160	139	264	272
CITIC Metal Africa Investments Limited (i)	52	50	105	100
Ivanhoe Capital Pte Ltd (j)	10	115	10	111
GMM Tech Holdings Inc. (k)	–	(26)	–	388
Global Mining Services Ltd. (l)	–	256	–	364
Ivanhoe Capital Corporation (UK) Ltd (m)	–	4	–	2
	(23,628)	(16,062)	(46,193)	(33,468)
Finance income	(24,234)	(17,386)	(46,400)	(34,668)
Cost recovery and management fee	(903)	(1,812)	(2,828)	(4,046)
Travel	1,125	1,011	2,250	1,890
Salaries and benefits	169	1,941	288	2,608
Office and administration	133	55	148	168
Directors fees	52	50	105	100
Consulting	30	79	244	480
	(23,628)	(16,062)	(46,193)	(33,468)

The above noted transactions were in the normal course of operations and were measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

- (a) Kamoa Holding Limited ("Kamoa Holding") is a company registered in Barbados. The Company has an effective 49.5% ownership in Kamoa Holding. The Company earns interest on the loans advanced to Kamoa Holding.
- (b) Kamoa Services (Pty) Ltd. ("Kamoa Services") is a company registered in South Africa. On March 31, 2021 the Company sold its 100% interest in Kamoa Services to Kamoa Holding. The Company now has an effective 49.5% ownership in Kamoa Services. The Company provides administration, accounting and other services to Kamoa Services on a cost-recovery basis.



- (c) High Power Exploration Inc. ("HPX") is a private company incorporated under the laws of Delaware, USA. The Company's Executive Co-Chairman is the Chief Executive Officer and Chairman of HPX and holds an indirect equity interest in HPX. The Company extended a secured loan of \$50 million to HPX in April 2019. Following the signing of an amendment to the loan facility agreement on June 16, 2021, the scheduled maturity date of the loan was extended to April 25, 2022. In addition, the loan facility agreement was amended such that the rate of interest for the period after April 25, 2021 is fixed at 11% per annum compounded monthly.
- (d) Ivanhoe Mines Energy DRC Sarl ("Energy") is a company incorporated in the DRC. Energy is 100% owned by Kamoa Holding Limited, a joint venture of the Company. The Company provides administration, accounting and other services to Energy on a cost-recovery basis.
- (e) Ivanhoe Capital Aviation Ltd. ("Aviation") is a private company owned indirectly by the Executive Co-Chairman of the Company. Aviation operates an aircraft for which the Company contributes toward the running costs.
- (f) Kamoa Copper SA ("Kamoa Copper") is a company incorporated in the DRC. Kamoa Copper is 80% owned by Kamoa Holding Limited, a joint venture of the Company. The Company provides administration, accounting and other services to Kamoa Copper on a cost-recovery basis.
- (g) Global Mining Management Corporation ("Global") is a private company based in Vancouver, Canada. The Company and the Executive Co-Chairman of the Company hold an indirect equity interest in Global. Global provides administration, accounting and other services to the Company on a cost-recovery basis.
- (h) Ivanhoe Capital Services Ltd. ("Services") is a private company owned indirectly by the Executive Co-Chairman of the Company. Services provides salaries administration and other services to the Company in Singapore and Beijing on a cost-recovery basis.
- (i) Citic Metal Africa Investments Limited ("Citic Metal Africa") is a private company incorporated in Hong Kong. Citic Metal Africa is a shareholder in the Company and nominates two directors who serve of the Company's Board of Directors.
- (j) Ivanhoe Capital Pte Ltd. ("Capital") is a private company owned indirectly by the Executive Co-Chairman of the Company. Capital provides administration, accounting and other services in Singapore on a cost-recovery basis.
- (k) GMM Tech Holdings Inc. ("GMM Tech") is a private company incorporated in British Columbia, Canada and is 100% owned by Global. GMM Tech provides information technology services to the Company on a cost-recovery basis.
- (l) Global Mining Services Ltd. ("GMS") is a private company incorporated in Delaware and is 100% owned by Global. GMS provides administration and other services to the Company on a cost-recovery basis.
- (m) Ivanhoe Capital Corporation (UK) Ltd. ("ICC") is a private company owned indirectly by the Executive Co-Chairman of the Company. ICC provides administration, accounting and other services in the United Kingdom on a cost-recovery basis.

As at June 30, 2021, trade and other payables included \$0.1 million (December 31, 2020: \$1.1 million) with regards to amounts due to parties related by way of director, officers or shareholder in common. These amounts are unsecured and non-interest bearing.

Amounts included in other receivables due from parties related by way of director, officers or shareholder in common as at June 30, 2021 amounted to \$3.1 million (December 31 2020: \$4.0 million).

On March 11, 2020, the Company entered into a purchase and sale agreement with ICA Global Services LLC ("ICA Global"), under which ICA Global agreed to sell a Gulfstream Aerospace G-IV aircraft to the Company for a purchase consideration equal to 1,000,000 Common Shares of the Company. The transaction closed on May 11, 2020. ICA Global is a private company controlled by the Executive Co-Chairman of the Company.

## **CRITICAL ACCOUNTING ESTIMATES**

The Company's significant accounting policies are presented in Note 2 to the consolidated financial statements for the year ended December 31, 2020. The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the end of the reporting period presented and reported amounts of expenses during said reporting period. Actual outcomes could differ from these estimates. The consolidated financial statements include estimates that, by their nature, are uncertain. Such estimates have a pervasive effect on the consolidated financial statements and may require accounting adjustments based on future occurrences. Revisions to accounting estimates are recognized in the year in which the estimate is revised and future years if the revision affects both current and future years. These estimates are based on historical experience, current and future economic conditions and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Significant assumptions about the future and other sources of estimation uncertainty at the end of the reporting period, which could result in a material adjustment to the carrying amounts of assets and liabilities in the event that actual results differ from assumptions made, include, but are not limited to, the following:

### *Recoverability of assets*

Property, plant and equipment, including capitalized development costs and finite lived intangible assets are assessed at each reporting period to determine whether there is any indication that those assets have suffered an impairment loss.

In assessing whether an impairment is required, the carrying value of the asset or cash generating unit ("CGU") is compared with its recoverable amount. The recoverable amount is the higher of the CGU's fair value less costs of disposal and value in use. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent, if any, of the impairment loss.

The Company assesses whether an impairment is required on loans receivables. A range of cash flow scenarios are considered, taking into account forward looking information which may impact recoverability of loan receivables.

Given the nature of the Company's activities, information on the fair value of an asset is usually difficult to obtain unless negotiations with potential purchasers or similar transactions are taking place. Consequently, the fair value less costs of disposal for each CGU is estimated based on discounted future estimated cash flows that are expected to be generated from the continued use of the CGUs. They are estimated using market consensus based commodity price and exchange assumptions, estimated quantities of recoverable minerals, production levels, operating costs and capital requirements, including any expansion projects, and its eventual disposal, based on the CGU development plans and latest technical reports. These cash flows were discounted using a discount rate that reflected current market assessments of the time value of money and the risks specific to the CGU.

If the recoverable amount of an asset or CGU is estimated to be less than its carrying amount, the carrying amount of the asset or CGU is impaired to its recoverable amount. An impairment loss is recognized immediately in the statement of comprehensive income. The Company has concluded that there is no impairment required to any of its projects.

### *Technical feasibility and commercial viability of projects*

All direct costs related to the acquisition of mineral property interests are capitalized by property or project. Exploration costs are charged to operations in the period incurred, until such time as the Company determines that a property is technically feasible and commercially viable, whereafter development costs are capitalized. In making this determination, the Company considers whether a proposed project is capable of being developed at a sufficient return to justify the capital and managerial resources that must be committed to the project. This determination is made on a property-by-property basis and generally coincides with the finalization of a preliminary economic assessment or pre-feasibility study of the property. Exploration costs include value-added taxes incurred in foreign jurisdictions when recoverability of those taxes is uncertain.

In determining whether an exploration and evaluation property is technically feasible and commercially viable, the Company considers several criteria, including:

- a technical analysis of the basic geology of the project;
- a mine plan for accessing and exploiting the ore body;
- a process flow sheet for processing the ore generated from mining;
- projections as to the capital cost of constructing the project;
- projections as to the cost of operating the project in accordance with the mine plan;
- projections as to revenues from the concentrate or other mineral product to be generated from operations in accordance with the mine plan; and
- an economic analysis of the project based on the projected capital and operating costs and production revenues.

### *Determination of inputs into lease accounting*

Lease payments should be discounted using the interest rate implicit in the lease unless that rate cannot be readily determined, in which case the lessee's incremental borrowing rate is used, being the rate that the individual lessee would have to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions. The Company has used the risk-free interest rate adjusted for credit risk specific to the lease.

In determining the lease term, the Company considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

### *Valuation of the embedded derivative liability*

The Company has used key inputs and estimates to determine the fair value of the embedded derivative liability at initial recognition and at period end date.

## CHANGES IN ACCOUNTING POLICIES INCLUDING INITIAL ADOPTION

### Newly adopted accounting standards

The following standards became effective for annual periods beginning on or after January 1, 2021, with earlier application permitted. The Company adopted these standards in the current period.

- Amendment to IFRS 9, IAS 39 and IFRS 7 – Financial Instruments. These amendments provide certain reliefs in connection with interest rate benchmark reform (IBOR). The reliefs relate to hedge accounting and have the effect that IBOR should not generally cause hedge accounting to terminate. However, any hedge ineffectiveness should continue to be recorded in the income statement.
- Amendment to IFRS 16 – Leases for COVID-19 related rent concessions. The amendment provides lessees with relief in the form of an optional exemption from assessing whether a rent concession related to COVID-19 is a lease modification, provided that the concession meets certain conditions. Lessees can elect to account for qualifying rent concessions in the same way as they would if there were no lease modifications.

### Accounting standards issued but not yet effective

- Amendment to IFRS 3 - Business combinations. The amendment updates a reference in IFRS 3 to the Conceptual Framework for Financial reporting without changing the accounting requirements for business combinations. (i)

*The Company has considered the amendment and assessed that it will have no material impact on adoption.*

- Amendment to IFRS 9 – Financial instruments. The amendment clarifies which fees an entity includes when it applies the “10 per cent” test in assessing whether to derecognize a financial liability. (i)

*The Company has considered the amendment and assessed that it will have no material impact on adoption.*

- Amendment to IAS 1 – Presentation of financial statements. The amendments clarify how to classify debt and other liabilities as current or non-current. Another amendment requires companies to disclose their material accounting policy information rather than their significant accounting policies, with additional guidance added to the Standard to explain how an entity can identify material accounting policy information with examples of when accounting policy information is likely to be material. (ii)

*The Company has considered the amendment and assessed that it will have no material impact on adoption.*

- Amendment to IAS 16 - Property, plant and equipment. The amendments prohibit an entity from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in a manner intended by management. Instead an entity recognizes the proceeds from selling such items, and the cost of producing these items, in profit or loss. (i)

*The Company has considered the amendment and assessed that it will have no material impact on adoption.*



- Amendment to IAS 37 – Provisions, Contingent Liabilities and Contingent Assets. The amendments specify which costs should be included in an entity's assessment of whether a contract will be loss making. (i)

*The Company has considered the amendment and assessed that it will have no material impact on adoption.*

- (i) Effective for annual periods beginning on or after January 1, 2022
- (ii) Effective for annual periods beginning on or after January 1, 2023

The Company has not yet adopted these new and amended standards.

## FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS

### Fair value of financial instruments

The Company's financial assets and financial liabilities are categorized as follows:

	Level	June 30, 2021 \$'000	December 31, 2020 \$'000
<b>Financial assets</b>			
<i>Financial assets at fair value through profit or loss</i>			
Investment in listed entity	Level 1	1,013	1,410
Investment in unlisted entity	Level 3	655	655
<i>Amortized cost</i>			
Loan advanced to joint venture	Level 3	1,310,760	1,138,992
Cash and cash equivalents		644,456	262,825
Loans receivable	Level 3	100,086	97,340
Promissory note receivable	Level 3	26,098	23,519
Other receivables		4,803	5,559
<b>Financial liabilities</b>			
<i>Financial liabilities at fair value through profit or loss</i>			
Convertible notes - embedded derivative liability	Level 2	210,600	-
<i>Amortized cost</i>			
Convertible notes - host liability	Level 3	425,333	-
Borrowings	Level 3	37,357	36,197
Trade and other payables	Level 3	19,208	19,217
Advances payable	Level 3	2,847	2,788

IFRS 13 - “Fair value measurement”, requires an explanation about how fair value is determined for assets and liabilities measured in the financial statements at fair value and established a hierarchy into which these assets and liabilities must be grouped based on whether inputs to those valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company’s assumptions. The two types of inputs create the following fair value hierarchy:

- Level 1: observable inputs such as quoted prices in active markets;
- Level 2: inputs, other than the quoted market prices in active markets, which are observable, either directly and/or indirectly; and
- Level 3: unobservable inputs for the asset or liability in which little or no market data exists, therefore require an entity to develop its own assumptions.

## Finance income

The Company’s finance income is summarized as follows:

	<b>Six months ended</b>	
	<b>June 30,</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$'000</b>	<b>\$'000</b>
Interest on loan to joint venture	(44,140)	(32,679)
Interest on loan receivable - HPX	(2,260)	(1,989)
Interest on bank balances	(984)	(3,537)
Interest on long term loan receivable - Gecamines	(487)	(1,277)
Other finance income	(4)	-
	<b>(47,875)</b>	<b>(39,482)</b>

The interest from the loan to the joint venture is interest earned from the Kamoa Holding joint venture on shareholder loans advanced by the Company where each shareholder is required to fund Kamoa Holding in an amount equivalent to its proportionate shareholding interest.

## Financial risk management objectives and policies

The risks associated with the Company’s financial instruments and the policies on how to mitigate these risks are set out below. Management manages and monitors these exposures to ensure appropriate measures are implemented in a timely and effective manner.

### *Foreign exchange risk*

The Company incurs certain of its expenses in currencies other than the U.S. dollar. The Company also has foreign currency denominated monetary assets and liabilities. As such, the Company is subject to foreign exchange risk as a result of fluctuations in exchange rates. The Company enters into derivative instruments to manage foreign exchange exposure as deemed appropriate.

The carrying amount of the Company's foreign currency denominated monetary assets and liabilities at the respective statement of financial position dates are as follows:

	<b>June 30, 2021 \$'000</b>	<b>December 31, 2020 \$'000</b>
<b>Assets</b>		
South African rand	20,826	22,809
Canadian dollar	19,895	25,289
British pounds	6,956	4,116
Australian dollar	1,013	1,410
<b>Liabilities</b>		
South African rand	(7,569)	(6,338)
British pounds	(6,171)	(3,400)
Canadian dollar	(220)	(1,978)
Australian dollar	(61)	(56)

#### Foreign currency sensitivity analysis

The following table details the Company's sensitivity to a 5% increase or decrease in the U.S. dollar against the foreign currencies presented. The sensitivity analysis includes only outstanding foreign currency denominated monetary items not denominated in the functional currency of the Company or the relevant subsidiary and adjusts their translation at the end of the period for a 5% change in foreign currency rates. A positive number indicates a decrease in loss for the period where the foreign currencies strengthen against the U.S. dollar. The opposite number will result if the foreign currencies depreciate against the U.S. dollar.

	<b>Six months ended June 30,</b>	
	<b>2021 \$'000</b>	<b>2020 \$'000</b>
Canadian dollar	984	1,335
Australian dollar	48	34
South African rand	(157)	(60)
British pounds	(17)	(1)

#### *Credit risk*

Credit risk is the risk of an unexpected loss if a customer or third party to a financial instrument fails to meet its contractual obligations. Credit risk for the Company is primarily associated with the loan to the Kamo Holding joint venture, promissory note receivable, loans receivable, other receivables and cash and cash equivalents.

The Company reviews the recoverable amount of their financial assets at each statement of financial position date to ensure that adequate impairment losses are made for irrecoverable amounts. The Company has considered the requirement of IFRS 9 to recognize a loss allowance for expected credit losses on financial assets. The general approach was applied to these financial assets, where the 12 month expected credit losses are calculated. The Company did not apply lifetime expected credit losses as there has not been a significant increase in credit risk in 2021.

A significant increase in credit risk would include:

- Existing or forecast adverse changes in business, financial or economic conditions that are expected to cause a significant change in the borrower's ability to meet its debt obligations.
- An actual or expected significant change in the operating results of the borrower.
- Significant increases in credit risk on other financial instruments of the same borrower.
- An actual or expected significant adverse change in the regulatory, economic, or technological environment of the borrower that results in a significant change in the borrower's ability to meet its debt obligations.
- Significant changes in the value of the collateral supporting the obligation or in the quality of third-party guarantees or credit enhancements, which are expected to reduce the borrower's economic incentive to make scheduled contractual payments or to otherwise have an effect on the probability of a default occurring.

The Company assesses whether an impairment is required on loan receivables. A range of cash flow scenarios are considered, taking into account forward looking information which may impact recoverability of loan receivables.

The loan advanced to the joint venture will be repaid as and when there is residual cash flow in Kamoa Holding. Due to the positive results of Kamoa-Kakula's definitive feasibility study and good development progress, repayment of the loan is deemed to be highly probable.

The promissory note receivable will be repaid using proceeds from the sale of Crystal River's 1% stake in Kamoa Holding.

The principal amount of the loan receivable from HPX and accrued interest thereon, is convertible in whole, or part, by the Company at its sole discretion into shares of treasury common stock of HPX.

Repayment of the social development loan will be made by offsetting the loan against future royalties and dividends payable to Gécamines which arise from future profits to be earned at Kipushi.

The credit risk on cash and cash equivalents is limited because the cash and cash equivalents are composed of deposits with major banks who have investment grade credit ratings assigned by international credit ratings agencies and have low risk of default.

Other receivables is comprised primarily of administration consulting income from the joint venture and refundable taxes. The credit quality of these financial assets can be assessed by reference to historical information about counterparty default rates and adjusted to reflect current and forward-looking information, as well as macroeconomic factors affecting the ability of the parties to settle the receivables. The historical loss rates are negligible and therefore the expected credit losses relating to other receivables is also negligible.

The Company continues to monitor its credit risk and assess expected credit losses.

#### *Market risk*

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: interest rate risk, currency risk and other price risk, such as equity price risk. Financial instruments affected by market risk include the convertible notes, loan advanced to the joint venture and borrowings.

The Company will measure the convertible notes embedded derivative liability at fair value at each reporting date, recognizing changes in the fair value in the statement of comprehensive income. This requirement to "mark-to-market" the derivative features could significantly affect the results in the statement of comprehensive income. If the Company's share price had been C\$1.00 higher than it was on June 30, 2021, the fair value of the embedded derivative liability would have increased by



\$41.6 million, which would have resulted in the Company recording a loss on the fair valuation of the financial liability of \$101.7 million for the six months ended June 30, 2021, instead of \$60.1 million.

#### *Interest rate risk*

The Company's interest rate risk arises mainly from long term borrowings, the loans receivable and the loan advanced to the joint venture. The Company's main exposure to interest rate risk arises from the fact that the Company earns and incurs interest on interest rates linked to LIBOR.

If interest rates (including applicable USD LIBOR rates) had been 50 basis points higher or lower and all other variables were held constant, the Company's loss for the six months ended June 30, 2021 would have decreased or increased by \$6.6 million (June 30, 2020: \$4.8 million).

#### *Liquidity risk*

In the management of its liquidity risk, the Company maintains a balance between continuity of funding and flexibility through the use of borrowings. Management closely monitors the liquidity position with the goal of maintaining adequate sources of funding to finance the Company's projects and operations.

The following table details the Company's expected remaining contractual maturities for its financial liabilities. The table is based on the undiscounted cash flows of financial liabilities based on the earliest date on which the Company can be required to satisfy the liabilities.

	Less than 1 month	1 to 3 months	3 to 12 months	More than 12 months	<b>Total undiscounted cash flows</b>
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>As at June 30, 2021</b>					
Convertible notes liability	-	-	4,135	575,000	<b>579,135</b>
Non-current borrowings	-	-	-	39,282	<b>39,282</b>
Trade and other payables	14,153	611	1,289	3,155	<b>19,208</b>
Lease liability	38	91	256	11,637	<b>12,022</b>
<b>As at December 31, 2020</b>					
Non-current borrowings	-	-	-	38,876	<b>38,876</b>
Trade and other payables	15,445	1,327	2,445	-	<b>19,217</b>
Lease liability	30	93	227	11,554	<b>11,904</b>

Trade and other payables in the above table excludes payroll tax, other statutory liabilities and indirect taxes payable.

### **DESCRIPTION OF CAPITAL STOCK**

As at August 9, 2021, the Company's capital structure consists of an unlimited number of Class A common shares without par value (the "Class A Shares"), an unlimited number of Class B common shares without par value (the "Class B Shares") and an unlimited number of preferred shares without par value. At this date 1,208,641,482 Class A Shares, nil Class B Shares, nil warrants and nil preferred shares were issued and outstanding.

The Company granted 10,384,900 options in 2020 and 1,096,315 options in 2021 to date. As at August 9, 2021, there were 17,212,094 options outstanding issued in terms of the Equity Incentive Plan exercisable into 17,212,094 Class A Shares.

The Company granted 478,846 restricted share units (RSUs) in 2021 to date and 1,140,653 RSUs in 2020 per the Company's restricted share unit plan. As at August 9, 2021, there were 1,357,392 RSUs which may vest into 1,357,392 Class A Shares.

The Company granted 176,105 deferred share units (DSUs) in 2021 to date and 307,147 DSUs in 2020 per the Company's deferred share unit plan. As at August 9, 2021, there were 552,989 DSUs which may settle into 552,989 Class A Shares.

## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for the design and operation of disclosure controls and procedures (DC&P) and internal control over financial reporting (ICFR) in order to provide reasonable assurance that material information related to the Company, including its consolidated subsidiaries, is made known to the Company's certifying officers. The Company's President, in the capacity of Chief Executive Officer (CEO) and Chief Financial Officer (CFO) has evaluated the design effectiveness of the Company's DC&P and ICFR as of June 30, 2021 and, in accordance with the requirements established under National Instrument 52-109 - Certification of Disclosure in Issuer's Annual and Interim Filings, the President has concluded that these controls and procedures have been designed to provide reasonable assurance that material information relating to the Company is made known to her by others within the Company and that the information required to be disclosed in reports that are filed or submitted under Canadian securities legislation are recorded, processed, summarized and reported within the time period specified in those rules.

The Company's President, in the capacity of CEO and CFO, has used the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework to evaluate the design of the Company's ICFR as of June 30, 2021 and has concluded that these controls and procedures have been designed effectively to provide reasonable assurance that financial information is recorded, processed, summarized and reported in a timely manner. Management of the Company was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. The result of the inherent limitations in all control systems means design and operation of controls cannot provide absolute assurance that all control issues and instances of fraud will be detected.

During the six months ended June 30, 2021, there were no changes in the Company's DC&P or ICFR that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

## **RISK FACTORS**

The Company has summarized its foreign exchange risk, credit risk, interest rate risk and liquidity risk under the "Financial risk management objectives and policies" sub-heading under the "Financial instruments and other instruments" section in this MD&A. Additional risks and uncertainties are discussed in the Company's Annual Information Form filed with Canadian provincial regulatory authorities and available at [www.sedar.com](http://www.sedar.com).

## **DISCLOSURE OF TECHNICAL INFORMATION**

Disclosures of a scientific or technical nature regarding the revised capital expenditure and development scenarios at the Kamoa-Kakula Project in this MD&A have been reviewed and approved by Steve Amos, who is considered, by virtue of his education, experience and professional association, a Qualified Person under the terms of NI 43-101. Mr. Amos is not considered independent under NI 43-101 as he is the Head of the Kamoa Project. Mr. Amos has verified the technical data disclosed in this MD&A.

Other disclosures of a scientific or technical nature regarding the Kakula and Kansoko stockpiles in this MD&A have been reviewed and approved by George Gilchrist, who is considered, by virtue of his education, experience and professional association, a Qualified Person under the terms of NI 43-101. Mr. Gilchrist is not considered independent under NI 43-101 as he is the Vice President, Resources of Ivanhoe Mines. Mr. Gilchrist has verified the other technical data disclosed in this MD&A.

Other disclosures of a scientific or technical nature in this MD&A 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. Mr. Torr is not considered independent under NI 43-101 as he is the Vice President, Geosciences. Mr. Torr has verified the other technical data disclosed in this MD&A.

Ivanhoe has prepared a current, independent, NI 43-101-compliant technical report for each of the Platreef Project, the Kipushi Project and the Kamoa-Kakula Project, which are available under the Company's SEDAR profile at [www.sedar.com](http://www.sedar.com):

- The Kamoa-Kakula Integrated Development Plan 2020 dated October 13, 2020, prepared by OreWin Pty Ltd., China Nerin Engineering Co., Ltd., DRA Global, Epoch Resources, Golder Associates Africa, KGHM Cuprum R&D Centre Ltd., Outotec Oyj, Paterson and Cooke, Stantec Consulting International LLC, SRK Consulting Inc., and Wood plc., covering the Company's Kamoa-Kakula Project;
- The Platreef Integrated Development Plan 2020 dated December 6, 2020, prepared by OreWin Pty Ltd., Wood plc (formerly Amec Foster Wheeler), SRK Consulting Inc., Stantec Consulting International LLC, DRA Global, and Golder Associates Africa, covering the company's Platreef Project; and
- The Kipushi 2019 Mineral Resource Update dated March 28, 2019, prepared by OreWin Pty Ltd., MSA Group (Pty) Ltd., SRK Consulting (South Africa) (Pty) Ltd, and MDM (Technical) Africa Pty Ltd. (a division of Wood PLC), covering the Company's Kipushi Project.

These technical reports include relevant information regarding the effective dates and the assumptions, parameters and methods of the mineral resource estimates on the Platreef Project, the Kipushi Project and the Kamoa-Kakula Project cited in this MD&A, as well as information regarding data verification, exploration procedures and other matters relevant to the scientific and technical disclosure contained in this MD&A in respect of the Platreef Project, Kipushi Project and Kamoa-Kakula Project.

## **ADDITIONAL INFORMATION**

Additional information regarding the Company, including the Company's Annual Information Form, is available on SEDAR at [www.sedar.com](http://www.sedar.com).