

FORM 51-102F3
MATERIAL CHANGE REPORT

Item 1 Name and Address of Company

Ivanhoe Mines Ltd. (“**Ivanhoe Mines**”, “**Ivanhoe**” or the “**Company**”)
Suite 654, 999 Canada Place
Vancouver, British Columbia
Canada, V6C 3E1

Item 2 Date of Material Change

December 13, 2016

Item 3 News Release

A news release with respect to the material change referred to in this report was disseminated through the facilities of recognized newswire services on December 13, 2016 and subsequently filed under the Company’s profile on the System for Electronic Document Analysis and Retrieval (“**SEDAR**”). The statements in such news release under the heading “Forward-Looking Statements” are incorporated in this material change report.

Item 4 Summary of Material Change

On December 13, 2016, the Company announced the results of a positive, independent, preliminary economic assessment (“**PEA**”) of initial options for the start-up of world-scale copper mining on the Kakula and Kamoia deposits in the Democratic Republic of Congo (“**DRC**”):

The PEA presents two initial scenarios for development of the high-grade copper deposits at the Kamoia-Kakula Project on the Central African Copperbelt, west of the DRC’s Katanga mining region.

Initial option for a single 4 Mtpa mine:

- One initial option analyzed in the PEA is the development of a four-million-tonne-per-annum (“**Mtpa**”) Kakula Phase 1 Mine at the Kakula Deposit, in the southerly portion of the project’s discovery area. For this option, the PEA envisages an average annual production rate of 216,000 tonnes of copper at a mine-site cash cost of US\$0.37/lb copper for the first 10 years of operations (see details Table 4), and peak copper production of 262,000 tonnes by year three.
- A pre-production capital cost of US\$1.0 billion for this option would result in an after-tax net present value at an 8% discount rate (NPV8%) of US\$3.7 billion – an increase of 272% compared to the after-tax NPV8% of US\$986 million that was projected in the March 2016 Kamoia pre-feasibility study. The internal rate of return of 38% would be more than double the return that was estimated in the March 2016 Kamoia pre-feasibility study.

Initial option for two mines producing a total of 8 Mtpa:

- The PEA also analyzed an alternative initial option that could involve a two-phase sequential expansion of production to 8 Mtpa from the proposed Kakula Phase 1 Mine at the Kakula Deposit and also the Kansoko Mine at the adjacent Kamoia Deposit.
- Under this alternative, the PEA envisages US\$1.0 billion in capital costs and an average annual production rate of 292,000 tonnes of copper at a mine-site cash cost of US\$0.42/lb copper during the

first 10 years of operations, (see details Table 8), and peak production of 370,000 tonnes by year seven.

Under study: New option for one mine producing 8 Mtpa, plus expanded output options of up to 16 Mtpa from two mines:

- The follow-on PEA, now underway, is examining an alternative approach that would see development of a single 8 Mtpa mine on the Kakula Deposit. This option is expected to have substantial advantages over the development of two mines to achieve the same production rate. Planned studies also will assess higher mining rates of up to 16 Mtpa, which would utilize high-grade copper mineralization from both the Kakula Deposit and the Kansoko Sud and Kansoko Centrale areas of the adjacent Kamoa Deposit.

Item 5 Full Description of Material Change

On December 13, 2016, the Company announced the results of a positive, independent, PEA of initial options for the start-up of world-scale copper mining on the Kakula and Kamoa deposits in the DRC:

The PEA presents two initial scenarios for development of the high-grade copper deposits at the Kamoa-Kakula Project on the Central African Copperbelt, west of the DRC's Katanga mining region.

Initial option for a single 4 Mtpa mine:

- One initial option analyzed in the PEA is the development of a 4 Mtpa Kakula Phase 1 Mine at the Kakula Deposit, in the southerly portion of the project's discovery area. For this option, the PEA envisages an average annual production rate of 216,000 tonnes of copper at a mine-site cash cost of US\$0.37/lb copper for the first 10 years of operations (see details Table 4), and peak copper production of 262,000 tonnes by year three.
- A pre-production capital cost of US\$1.0 billion for this option would result in an after-tax net present value at an 8% discount rate (NPV8%) of US\$3.7 billion – an increase of 272% compared to the after-tax NPV8% of US\$986 million that was projected in the March 2016 Kamoa pre-feasibility study. The internal rate of return of 38% would be more than double the return that was estimated in the March 2016 Kamoa pre-feasibility study.

Initial option for two mines producing a total of 8 Mtpa:

- The PEA also analyzed an alternative initial option that could involve a two-phase sequential expansion of production to 8 Mtpa from the proposed Kakula Phase 1 Mine at the Kakula Deposit and also the Kansoko Mine at the adjacent Kamoa Deposit.
- Under this alternative, the PEA envisages US\$1.0 billion in capital costs and an average annual production rate of 292,000 tonnes of copper at a mine-site cash cost of US\$0.42/lb copper during the first 10 years of operations, (see details Table 8), and peak production of 370,000 tonnes by year seven.

Under study: New option for one mine producing 8 Mtpa, plus expanded output options of up to 16 Mtpa from two mines:

- The follow-on PEA, now underway, is examining an alternative approach that would see development of a single 8 Mtpa mine on the Kakula Deposit. This option is expected to have substantial advantages over the development of two mines to achieve the same production rate. Planned studies also will assess higher mining rates of up to 16 Mtpa, which would utilize high-grade

copper mineralization from both the Kakula Deposit and the Kansoko Sud and Kansoko Centrale areas of the adjacent Kamoa Deposit.

The Kamoa-Kakula Project – a joint venture between Ivanhoe Mines, Zijin Mining Group Co., Ltd. (“**Zijin**”) and the government of the DRC – has been independently ranked as the world’s largest high-grade copper discovery by international mining consultant Wood Mackenzie.

The Kakula 2016 PEA was independently prepared by OreWin Pty. Ltd., Amec Foster Wheeler E&C Services Inc. and SRK Consulting Inc. (The same team of consulting engineers was involved in planning the development of the Oyu Tolgoi Project in Mongolia.)

The Kakula 2016 PEA assesses the planned first phase of development of the Kakula Deposit – a discovery that was announced in January this year – as a 4 Mtpa underground mining and processing complex that would be known as the Kakula Phase 1 Mine at the Kamoa-Kakula Project.

Incorporated within the Kakula 2016 PEA is an option for an integrated, 8 Mtpa, two-stage development scenario involving an initial mining operation at the Kakula Deposit and a subsequent, separate mining operation at the Kansoko Sud and Kansoko Centrale areas of the adjacent Kamoa Deposit, discovered in 2008, which would be known as the Kansoko Mine.

The Kakula 2016 PEA is preliminary in nature and includes an economic analysis that is based, in part, on Inferred Mineral Resources. Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would allow them to be categorized as Mineral Reserves, and there is no certainty that the results will be realized.

Mineral Resources do not have demonstrated economic viability and are not Mineral Reserves.

Ivanhoe Mines and Zijin Mining are continuing with the drilling program in and around the Kakula Deposit area, using six drill rigs, to expand the extent of the known mineralization and support potential upgrades in resource confidence categories. Ivanhoe Mines expects an updated resource estimate for the Kakula Deposit will be issued in the first quarter of 2017. In addition, a pre-feasibility study also is underway to enhance the findings of the Kakula 2016 PEA and to advance the project toward production.

Summary of the PEA’s key results for an initial Kakula Phase 1 Mine

1. Very high-grade initial phase of production is projected to have a grade of 8.1% copper in year two and an average grade of 7.52% copper over the initial five years of operations, resulting in estimated average annual copper production of 209,000 tonnes.
2. Peak annual copper production is estimated at 262,000 tonnes in year three.
3. Initial capital cost, including contingency, is estimated at US\$1.0 billion, approximately US\$200 million lower than previously estimated in the March 2016 Kamoa pre-feasibility study.
4. Average mine-site cash cost of US\$0.37/lb of copper during the first 10 years (see details Table 4).
5. After-tax NPV, at an 8% discount rate, of US\$3.7 billion, an increase of 272% compared to the after-tax NPV, at an 8% discount rate, of US\$986 million estimated in the March 2016 Kamoa pre-feasibility study.
6. After-tax internal rate of return (“**IRR**”) of 38.0%, which is more than double the IRR of the 2016 Kamoa pre-feasibility study, and a payback period of 2.3 years.
7. Kakula is expected to produce a very-high-grade copper concentrate in excess of 50% copper, with extremely low arsenic levels.

Greatly expanded production scenario now under study as part of a new PEA could double the mining rate and is expected to further improve net present value

A subsequent PEA now is underway to examine a doubling of the proposed mining rate at the Kakula Phase 1 Mine to 8 Mtpa. This next PEA is expected to be released in early 2017. Michael Gray, Ivanhoe Mines' senior mining advisor and former President and co-founder of McIntosh Engineering, will assist with the expansion studies for the Kamo-a-Kakula Project. Mr. Gray has extensive experience in underground mine development and previously has worked on major projects such as San Manuel (BHP), Grasberg (Freeport Indonesia), Bingham Canyon (Rio Tinto), El Teniente (Codelco), Olympic Dam (BHP Billiton) and Oyu Tolgoi (the original Ivanhoe Mines).

Given the extremely high copper grades and bottom-loaded nature of the mineralization at the Kakula Deposit, Ivanhoe Mines expects that the results of having a single, 8 Mtpa mine at the Kakula Deposit will be even better than the results of an integrated, 8 Mtpa, two-stage, two-mine development scenario. The project engineering team is targeting a life-of-mine average annual copper production scenario for a single 8 Mtpa mine at Kakula in excess of 400,000 tonnes per annum. Given that the initial capital costs for the two options examined in the Kakula 2016 PEA are the same at US\$1.0 billion, it can be expected that an expansion to 8 Mtpa also will have essentially unchanged initial capital costs and, in particular, given that the expansion then could be funded from future cash flows.

Based on initial metallurgical test work, the chalcocite-rich nature of the copper mineralization at the Kakula Deposit is expected to yield higher metallurgical recoveries and higher concentrate grades, which in turn are expected to reduce unit transportation costs and therefore improve financial returns.

Additional expansion studies are planned for 2017 in which the project engineering team will assess higher mining rates of up to 16 Mtpa, incorporating high-grade copper mineralization from both the Kakula Deposit and the Kansoko Sud and Kansoko Centrale areas of the Kamo-a Deposit.

Figure 1. Planned Kakula 2016 PEA development and infrastructure for Kakula and Kansoko mines.

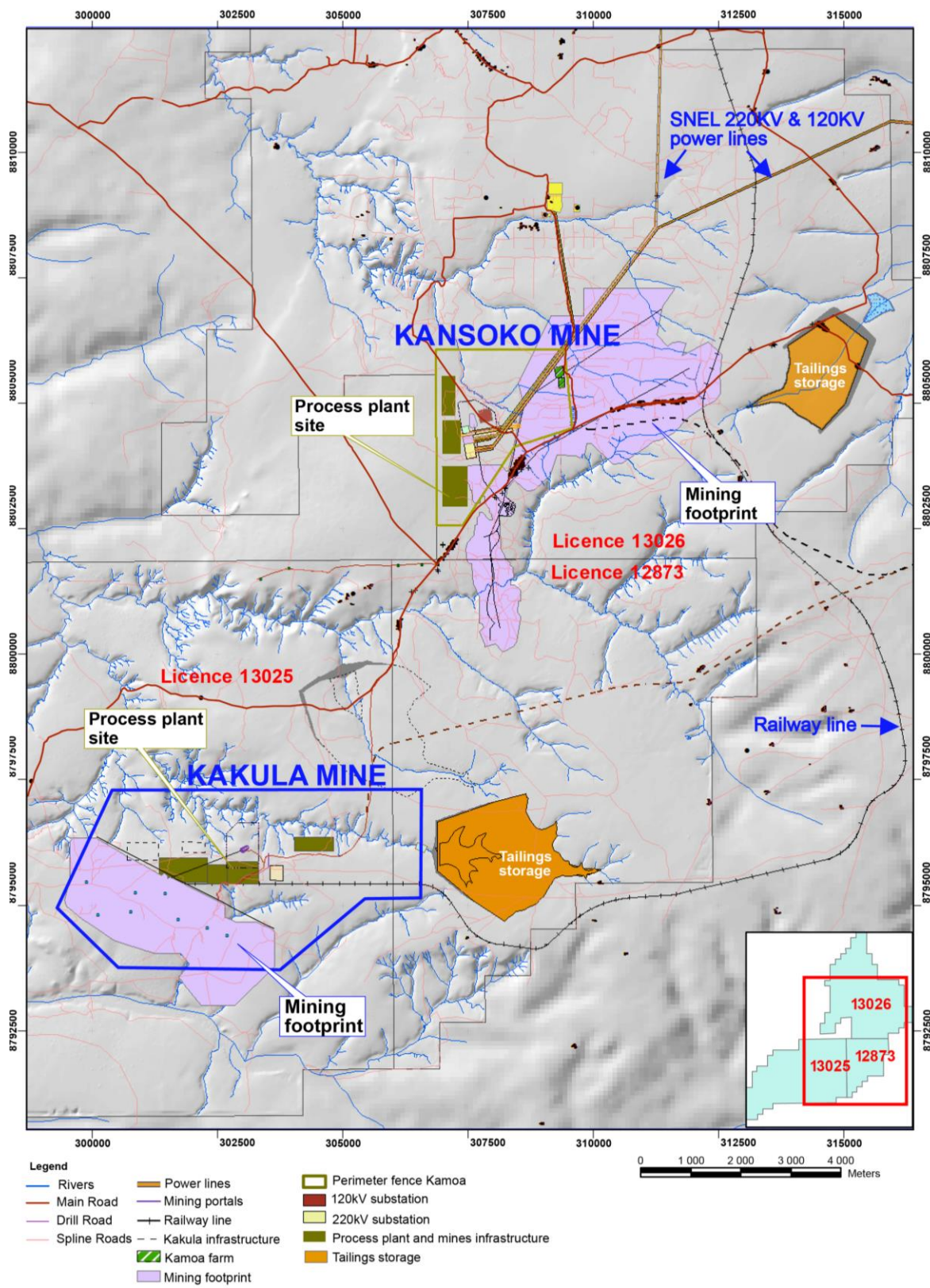


Figure by Ivanhoe Mines 2016.

Principal initial projections from the Kakula 2016 PEA

The report assesses the potential development of the Kakula Deposit as a 4 Mtpa mining and processing complex. The life-of-mine production scenario schedules 82.6 million tonnes to be mined at an average grade of 5.76% copper, producing 7.5 million tonnes of high-grade copper concentrate, containing approximately 9.1 billion pounds of copper.

Figure 2. Start-up of 4 Mtpa Kakula Phase 1 Mine development scenario.

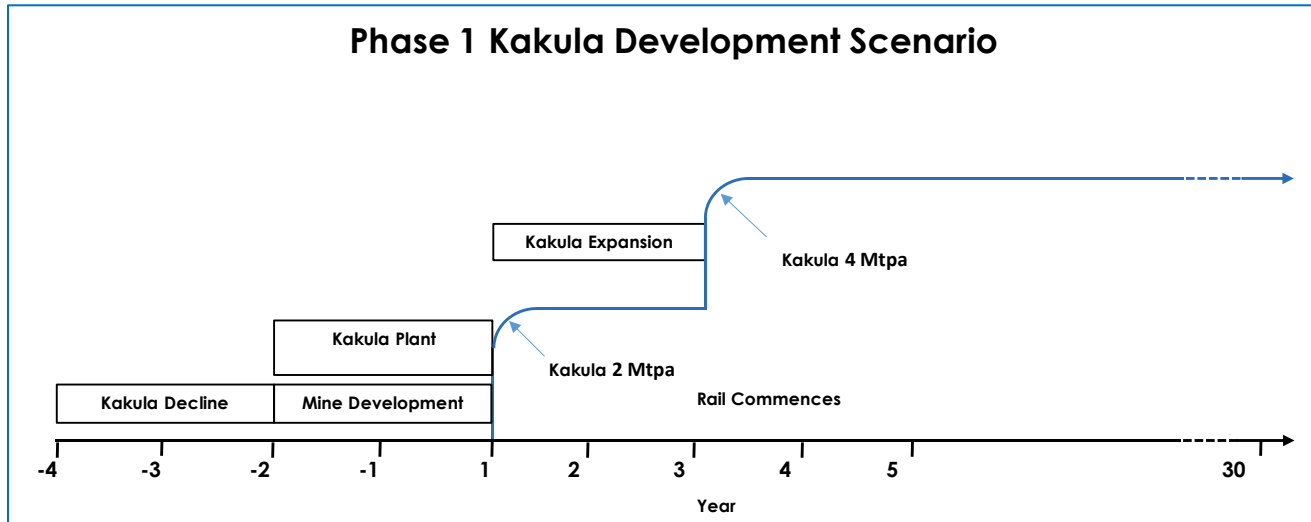


Figure by OreWin 2016.

The economic analysis uses a long-term price assumption of US\$3.00/lb of copper and returns an after-tax NPV at an 8% discount rate of US\$3.7 billion. It has an after-tax IRR of 38.0% and a payback period of 2.3 years.

The estimated initial capital cost, including contingency, is US\$1.0 billion. The capital expenditure for off-site power, which is included in the initial capital cost, includes a US\$147 million advance payment to the DRC state-owned electricity company, SNEL, to upgrade two hydropower plants (Koni and Mwadingusha) to provide the Kamo-Kakula Project with access to clean electricity for its planned operations. The upgrading work is being led by Stucky Ltd., of Switzerland, and the advance payment will be recovered through a reduction in the power tariff.

Solar power and high-capacity, grid-scale battery storage of electricity under study

The project team also is evaluating the installation of up to 100 megawatts of solar power and large-scale vanadium redox batteries for high-capacity storage of both solar and hydro-electric power.

Key results of the Kakula 2016 PEA for a single 4 Mtpa mine are summarized in Table 1.

Table 1. Kakula Phase 1 Mine results summary for 4 Mtpa steady-state production.

| Item | Unit | Total |
|-----------------------------------|----------|--------|
| Total Processed | | |
| Quantity Milled | kt | 82,566 |
| Copper Feed Grade | % | 5.76 |
| Total Concentrate Produced | | |
| Copper Concentrate Produced | kt (dry) | 7,534 |
| Copper Recovery | % | 87.01 |
| Copper Concentrate Grade | % | 54.94 |
| Contained Metal in Concentrate | Mlb | 9,126 |
| Contained Metal in Concentrate | kt | 4,139 |
| Key Financial Results | | |
| Initial Capital | US\$M | 999 |
| After-Tax NPV8% | US\$M | 3,664 |
| After-Tax IRR | % | 38.0 |
| Project Payback Period | Years | 2.3 |
| Initial Project Life | Years | 23 |

Table 2 summarizes the financial results and Table 3 summarizes planned mine production and processing statistics.

Table 2. Kakula Phase 1 Mine financial results for 4 Mtpa steady-state production.

| Net Present Value (US\$M) | Discount Rate | Before Taxation | After Taxation |
|--------------------------------|---------------|-----------------|----------------|
| | Undiscounted | 15,561 | 10,935 |
| | 4.0% | 8,876 | 6,180 |
| | 6.0% | 6,843 | 4,735 |
| | 8.0% | 5,337 | 3,664 |
| | 10.0% | 4,203 | 2,859 |
| | 12.0% | 3,338 | 2,245 |
| Internal Rate of Return | – | 44.9% | 38.0% |
| Project Payback Period (Years) | – | 2.2 | 2.3 |

Table 3. Kakula Phase 1 Mine average estimated production and processing statistics for 4 Mtpa steady-state production.

| Item | Unit | YEARS 1-5 | YEARS 1-10 | LOM AVERAGE |
|---------------------------------------|----------|--------------|---------------|----------------|
| Total Processed | | | | |
| Quantity Milled | Kt | 3,163 | 3,584 | 3,590 |
| Copper Feed Grade | % | 7.52 | 6.90 | 5.76 |
| Total Concentrate Produced | | | | |
| Copper Concentrate Produced | kt (dry) | 380 | 394 | 328 |
| Copper Recovery | % | 87.74 | 87.50 | 87.01 |
| Copper Concentrate Grade | % | 54.94 | 54.94 | 54.94 |
| Contained Metal in Concentrate | | | | |
| Copper | Mlb | 460 | 477 | 397 |
| Copper | Kt | 209 | 216 | 180 |
| Payable Metal | | | | |
| Copper | Mlb | 449 | 465 | 387 |
| Copper | kt | 204 | 211 | 176 |

The Kakula concentrator production is shown in Figure 3 and the concentrate and metal production is shown in Figure 4.

Figure 3. Kakula Phase 1 Mine estimated concentrator production for the first 20 years.

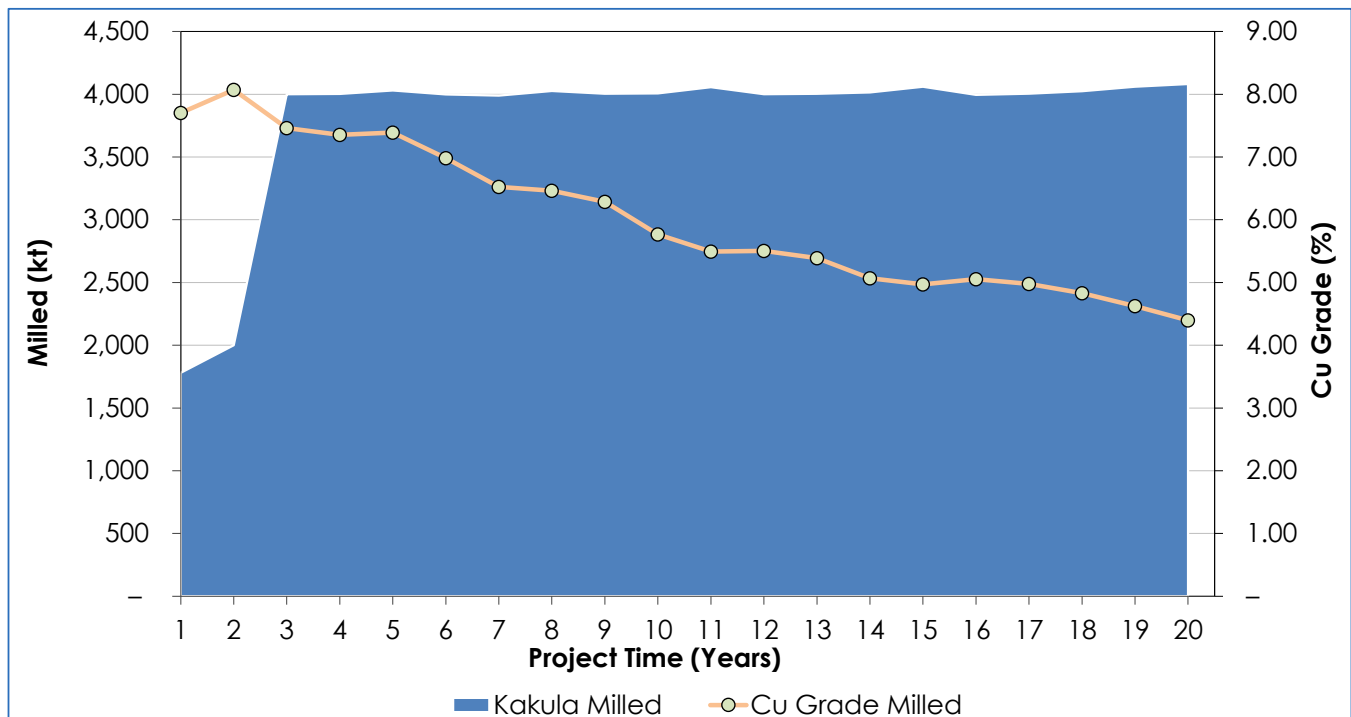


Figure by OreWin 2016.

Figure 4. Kakula Phase 1 Mine estimated concentrate and metal production for the first 20 years.

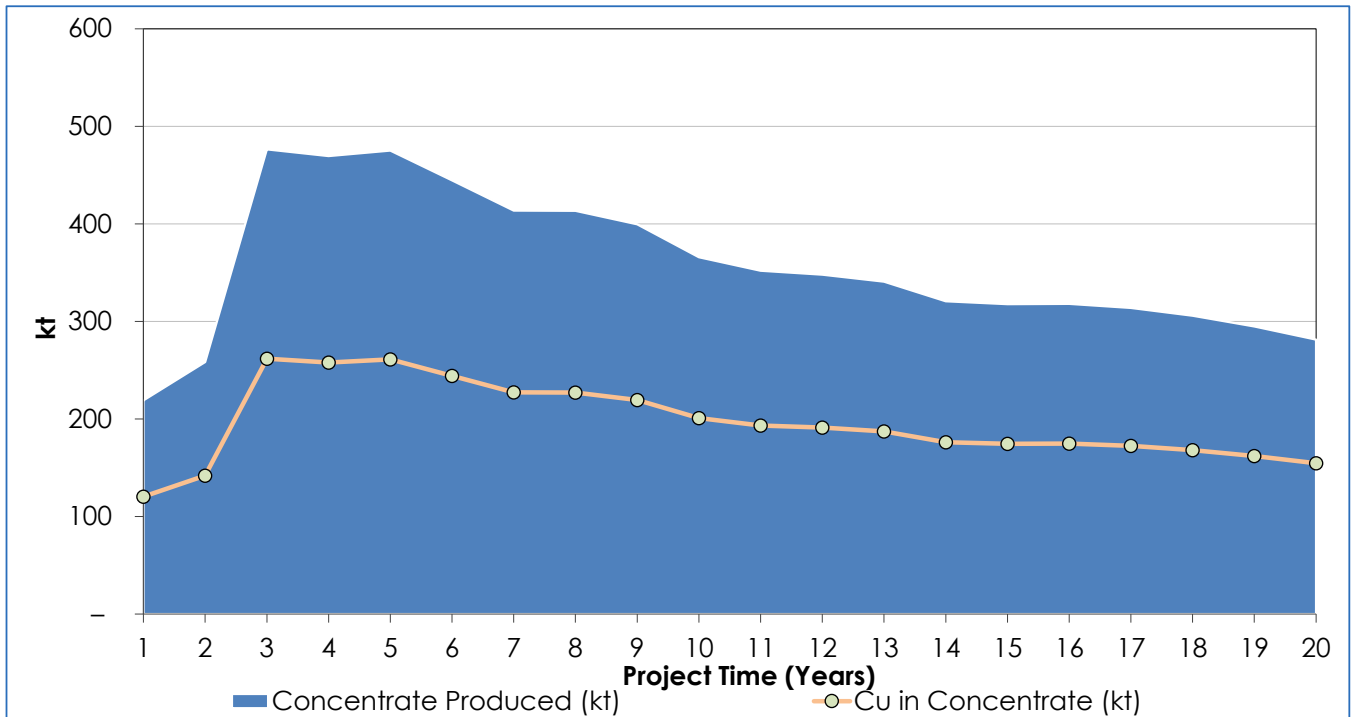
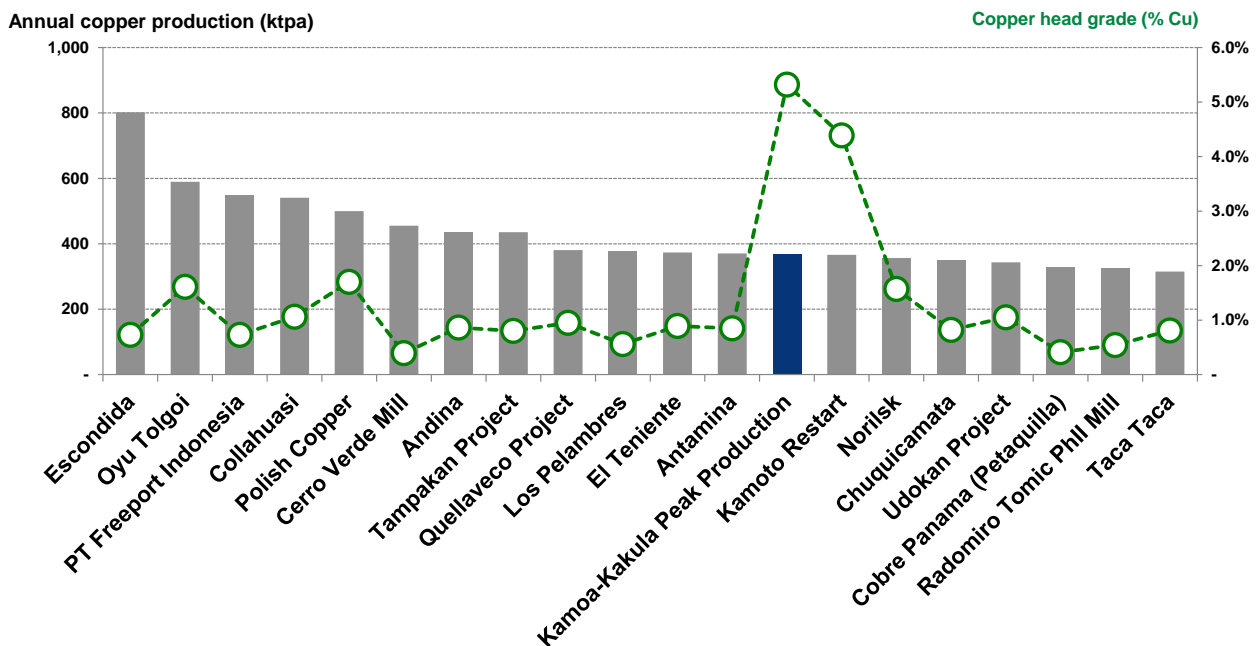


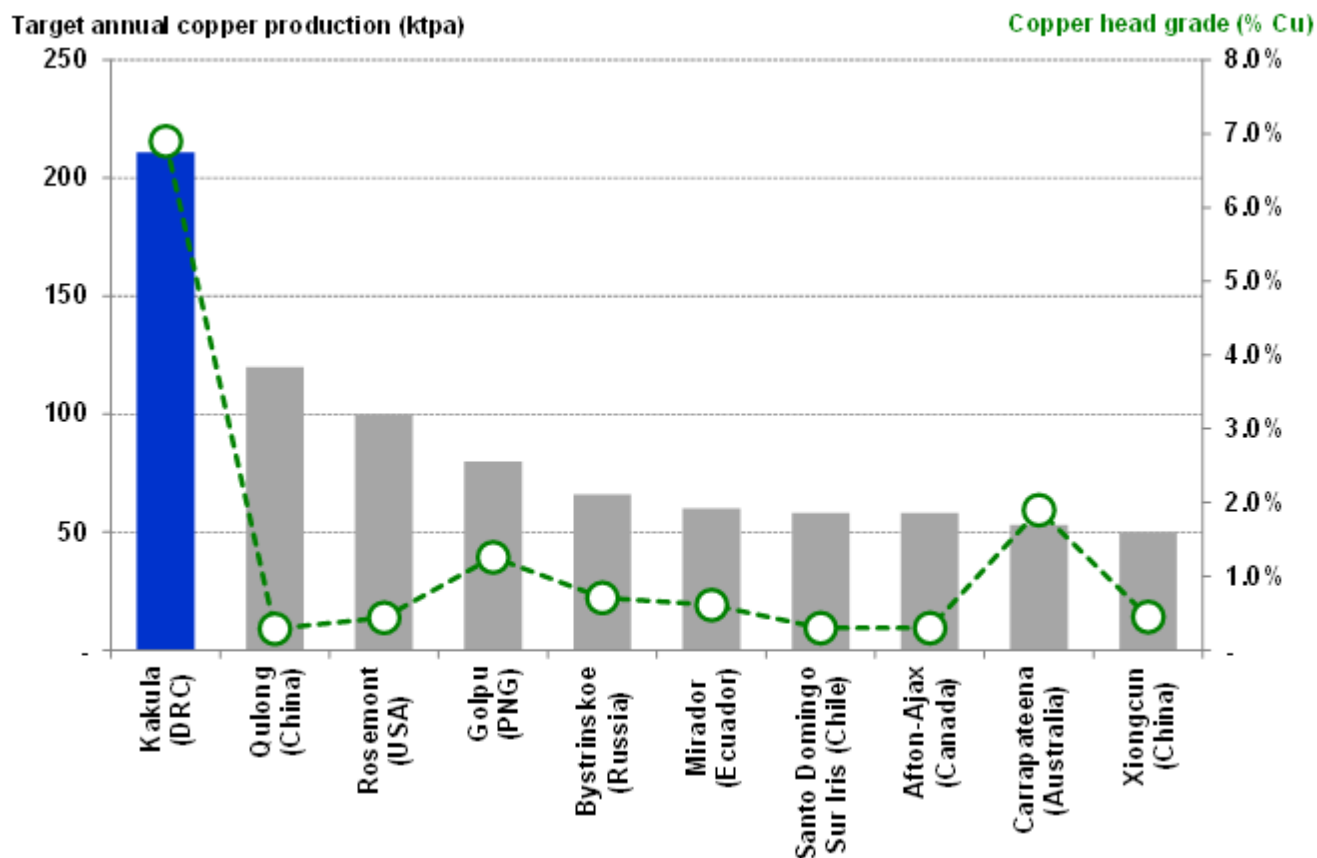
Figure by OreWin 2016.

Figure 5. World's projected top 20 largest copper concentrate mines by 2027.



Note: Kamoa-Kakula Peak Production based on projected peak copper production (which occurs in year seven) of the 8 Mtpa development plan for the Kamoa-Kakula Project as detailed in the Kamoa 2016 PEA. Source: Wood Mackenzie (based on public disclosure of comparable projects and operations).

Figure 6. Target annual production and head grade for Wood Mackenzie’s “highly probable” and “probable” copper concentrate projects.



Note: 10 largest greenfield copper projects classified by Wood Mackenzie as “highly probable” or “probable” and ranked by nominal copper production. Kakula based on projected average copper production and grade during the first 10 years of production as detailed in the Kakula 2016 PEA.

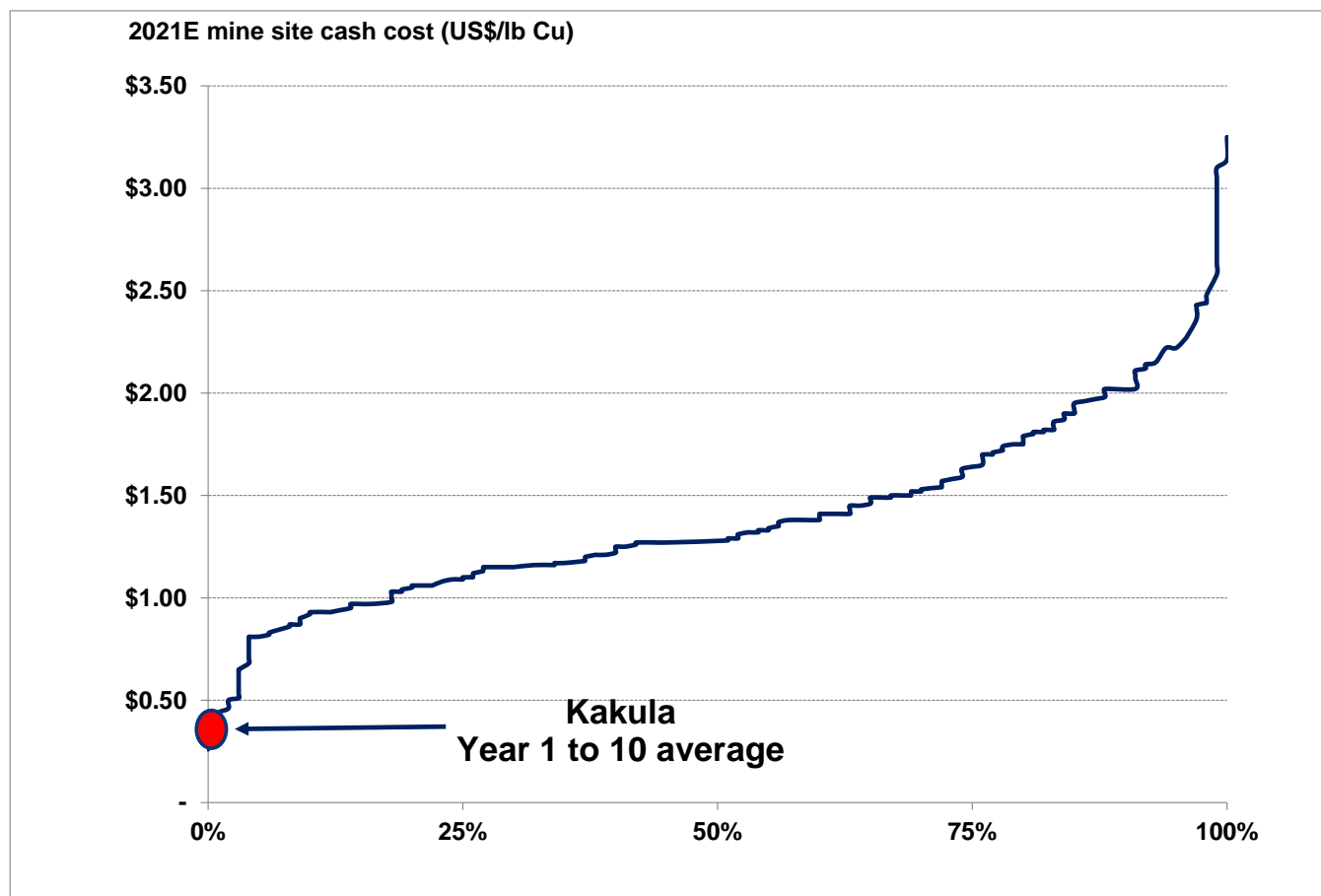
Source: Wood Mackenzie (based on public disclosure of comparable projects).

Table 4 summarizes unit operating costs and Table 5 provides a breakdown of revenue and operating costs. The capital costs for the project are detailed in Table 6.

Table 4. Kakula Phase 1 Mine unit operating costs for 4 Mtpa steady-state production.

| | \$/lb Payable Copper | | |
|------------------------------|----------------------|-------------|-------------|
| | YEARS 1-5 | YEARS 1-10 | LOM AVERAGE |
| Mine Site | 0.34 | 0.37 | 0.45 |
| Transport | 0.31 | 0.31 | 0.31 |
| Treatment & Refining Charges | 0.15 | 0.15 | 0.15 |
| Royalties & Export Tax | 0.14 | 0.14 | 0.14 |
| Total Cash Costs | 0.94 | 0.97 | 1.05 |

Figure 7. 2021 estimated mine-site copper cash costs.



Note: Represents mine-site cash costs that reflect the direct cash costs of producing paid concentrate or cathode incorporating mining, processing and mine-site G&A costs. Kakula is based on the average mine-site cash cost during the first 10 years as detailed in the Kakula 2016 PEA.

Source: Wood Mackenzie (based on public disclosure of comparable projects and operations).

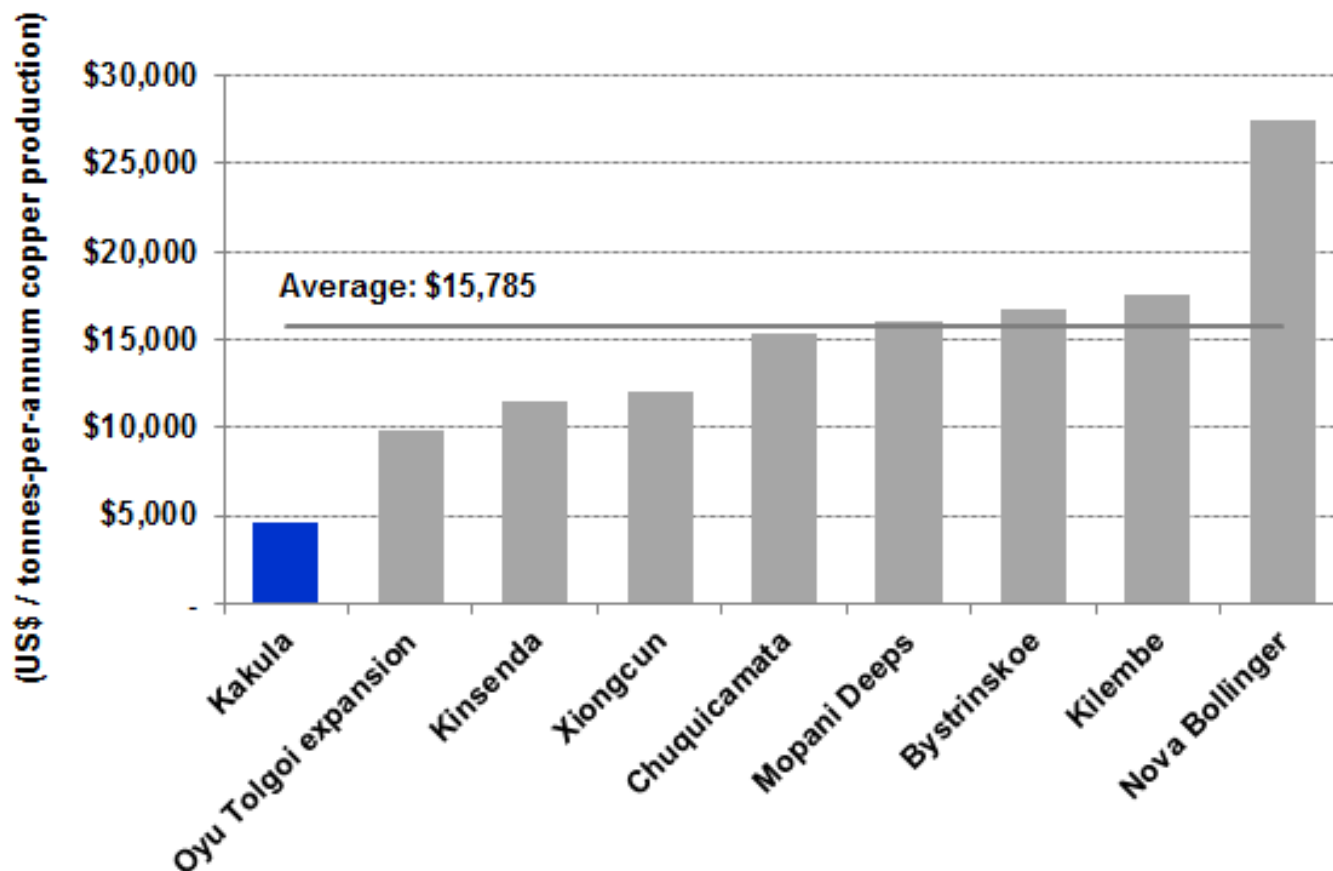
Table 5. Kakula Phase 1 Mine estimated revenue and operating costs for 4 Mtpa steady-state production.

| | YEARS 1-5 | YEARS 1-10 | TOTAL |
|--------------------------------|---------------|---------------|---------------|
| | US\$/t Milled | | US\$M |
| REVENUE | | | |
| Copper in Concentrate | 426.00 | 389.65 | 26,729 |
| Gross Sales Revenue | 426.00 | 389.65 | 26,729 |
| Less: Realisation Costs | | | |
| Transport | 44.58 | 40.25 | 2,745 |
| Treatment & Refining | 21.24 | 19.43 | 1,333 |
| Royalties & Export Tax | 19.32 | 17.68 | 1,213 |
| Total Realisation Costs | 85.14 | 77.36 | 5,291 |
| Net Sales Revenue | 340.86 | 312.29 | 21,438 |
| SITE OPERATING COSTS | | | |
| UG Mining | 28.46 | 29.13 | 2,455 |
| Processing | 15.15 | 14.54 | 1,178 |
| Tailings | 0.31 | 0.28 | 22 |
| General & Administration | 6.81 | 6.47 | 521 |
| SNEL Discount | -2.51 | -2.46 | -201 |
| Customs | 0.55 | 0.74 | 61 |
| Total | 48.77 | 48.70 | 4,037 |
| Operating Margin | 292.09 | 263.58 | 17,401 |
| Operating Margin | 85.69% | 84.40% | 81.17% |

Table 6. Kakula Phase 1 Mine estimated capital investment summary for 4 Mtpa steady-state production.

| Description | Initial Capital | Expansion Capital | Sustaining Capital | Total |
|---|-----------------|-------------------|--------------------|--------------|
| | US\$M | US\$M | US\$M | US\$M |
| MINING | | | | |
| Underground Mining | 275 | – | 404 | 679 |
| Capitalised Pre-Production | 16 | – | – | 16 |
| Subtotal | 291 | – | 404 | 695 |
| POWER | | | | |
| Power Infrastructure On Site | 32 | – | – | 32 |
| Power Supply Off Site | 115 | – | – | 115 |
| Subtotal | 148 | – | – | 148 |
| CONCENTRATE & TAILINGS | | | | |
| Process Plant | 143 | 31 | 78 | 253 |
| Tailings | 32 | – | 74 | 106 |
| Subtotal | 176 | 31 | 152 | 359 |
| INFRASTRUCTURE | | | | |
| Plant Infrastructure | 23 | – | 52 | 75 |
| Plant mobile equipment | 3 | 0 | – | 4 |
| Buildings & Structures | 20 | – | – | 20 |
| Camps | 20 | – | – | 20 |
| Rail | – | 36 | – | 36 |
| Subtotal | 66 | 36 | 52 | 154 |
| INDIRECTS | | | | |
| EPCM | 53 | 7 | – | 61 |
| Owners Cost | 80 | 7 | – | 86 |
| Closure | – | – | 67 | 67 |
| Subtotal | 133 | 14 | 67 | 214 |
| CAPITAL EXPENDITURE BEFORE CONTINGENCY | 812 | 81 | 676 | 1,569 |
| CONTINGENCY | 187 | 20 | 30 | 237 |
| CAPITAL EXPENDITURE AFTER CONTINGENCY | 999 | 101 | 706 | 1,806 |

Figure 8. Capital intensity for Wood Mackenzie's "highly probable" projects currently under construction.



Note: All development projects classified as "highly probable" by Wood Mackenzie. Kakula Phase 1 Mine based on estimated pre-production capital of (US\$999 million) and projected average copper production during first 10 years (216 ktpa) as detailed in the Kakula 2016 PEA.

Source: Wood Mackenzie (based on public disclosure of comparable projects).

The after-tax NPV sensitivity to metal price variation is shown in Table 7 for copper prices from US\$2.00/lb to US\$4.00/lb. The annual and cumulative cash flows for the combined base case and each operation are shown in Figure 9.

Table 7. Kakula Phase 1 Mine copper price sensitivity.

| After Tax NPV (US\$M) | Copper Price - US\$/lb | | | | |
|-----------------------|------------------------|--------------|--------------|--------------|--------------|
| Discount Rate | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 |
| Undiscounted | 4,884 | 7,911 | 10,935 | 13,960 | 16,985 |
| 4.0% | 2,629 | 4,406 | 6,180 | 7,954 | 9,728 |
| 6.0% | 1,942 | 3,340 | 4,735 | 6,129 | 7,524 |
| 8.0% | 1,433 | 2,551 | 3,664 | 4,778 | 5,891 |
| 10.0% | 1,052 | 1,958 | 2,859 | 3,761 | 4,662 |
| 12.0% | 762 | 1,506 | 2,245 | 2,984 | 3,723 |
| IRR | 23.2% | 31.3% | 38.0% | 43.7% | 48.9% |

Figure 9. Kakula Phase 1 Mine projected cumulative cash flow for the first 20 years.

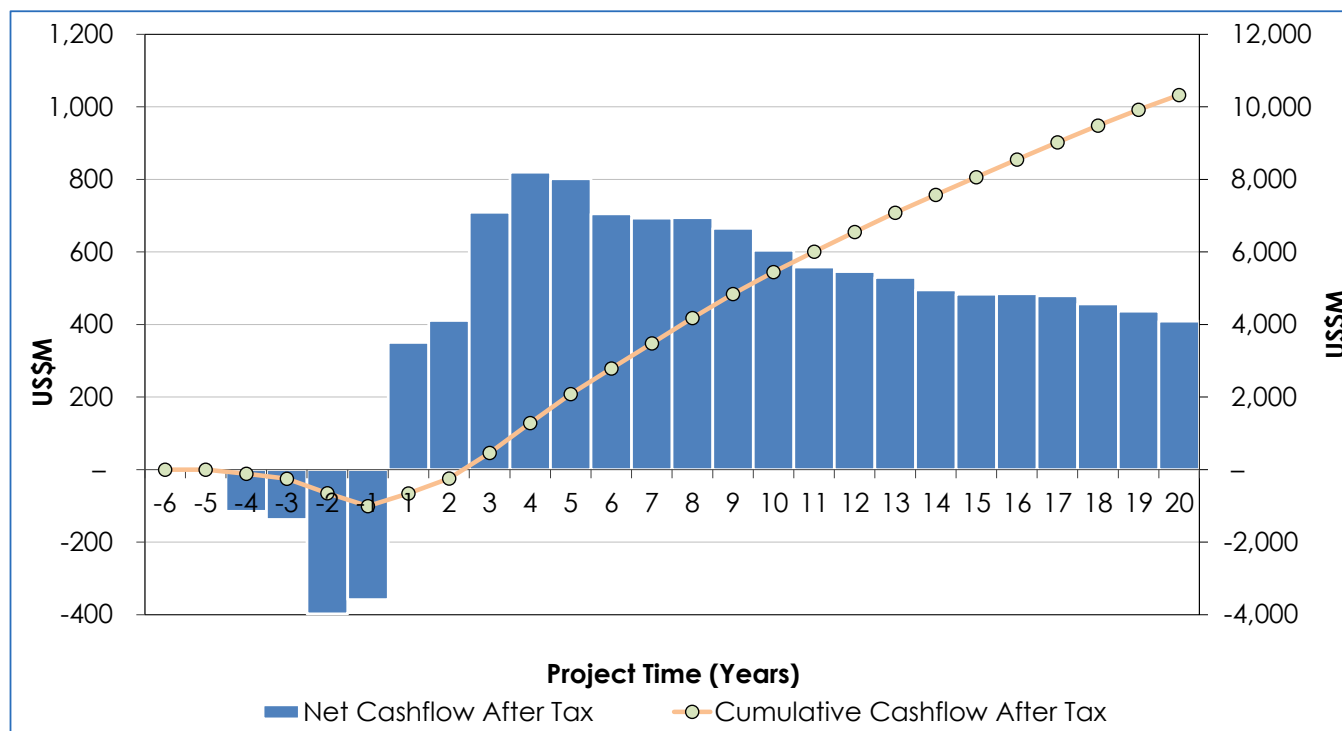


Figure by OreWin 2016.

Alternative 8 Mtpa development scenario for the Kakula and Kamoia deposits

The Kakula 2016 PEA also assesses the development of the Kakula and Kamoia deposits as an integrated, 8 Mtpa mining and processing complex. This scenario envisages the construction and operation of two separate facilities: the Kakula Phase 1 Mine on the Kakula Deposit and the Kansoko Mine on the Kansoko Sud and Kansoko Centrale areas of the Kamoia Deposit. Each operation is expected to be a separate underground mine with an associated processing facility and surface infrastructure.

Summary of the PEA's key results for the alternative 8 Mtpa development scenario

1. Very high-grade initial phase projected to have a grade of 8.1% copper in year two and an average grade of 7.10% copper over the initial five years of operations, results in average annual copper production of 224,000 tonnes.
2. Combined, the Kakula and Kansoko mines are projected to produce an annual average of 292,000 tonnes of copper at an average grade of 5.81% copper during the first 10 years of operations.
3. Peak annual copper production of 370,000 tonnes by year seven.
4. Initial capital cost, including contingency, is US\$1.0 billion.
5. Average mine-site cash cost of US\$0.42 /lb of copper during the first ten years.
6. After-tax NPV at an 8% discount rate of US\$4.7 billion, an increase of 382% compared to the after-tax NPV at an 8% discount rate of US\$986 million estimated in the 2016 Kamoia pre-feasibility study.

7. After-tax IRR of 34.6%, which is more than double the IRR of the 2016 Kamoia pre-feasibility study, and a payback period of 3.5 years.

Figure 10. Alternative 8 Mtpa development scenario.

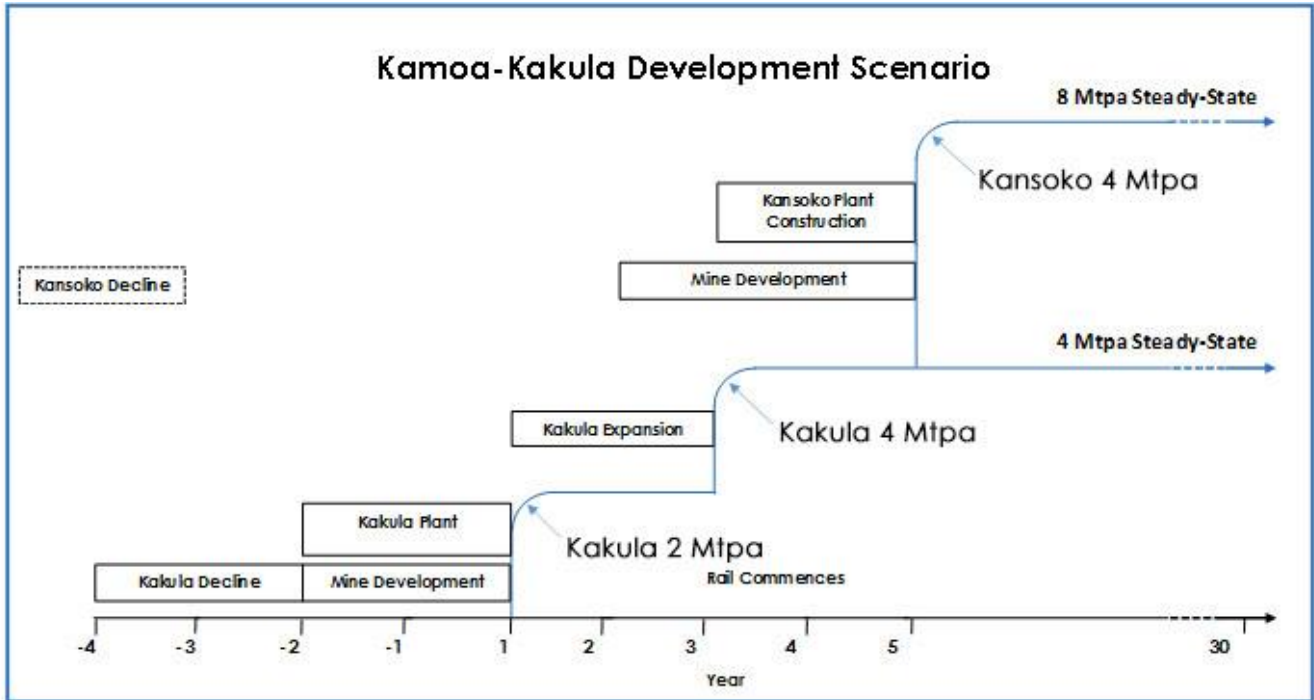


Figure by OreWin 2016.

Key results of this alternative development scenario are summarized in figures 11 & 12 and Table 8.

Figure 11. Kakula Phase 1 Mine & Kansoko Mine concentrator production for the first 20 years.

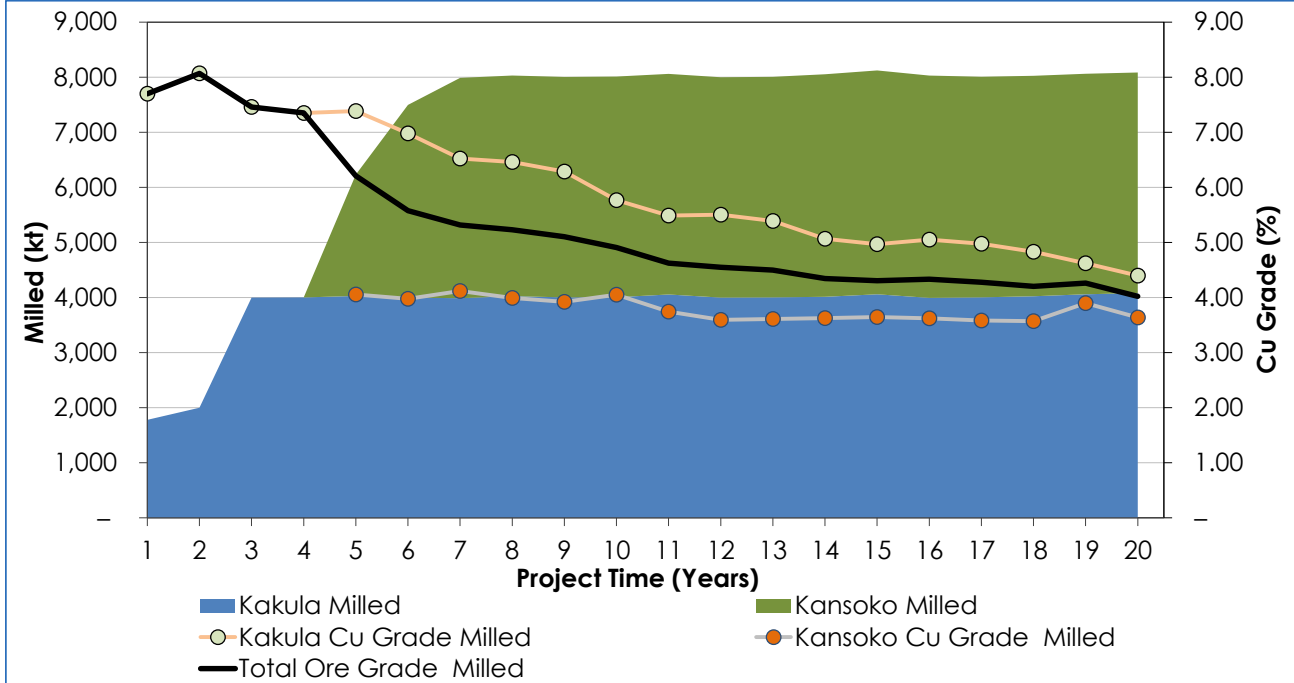


Figure by OreWin 2016.

Figure 12. Kakula Phase 1 Mine & Kansoko Mine concentrate and metal production for the first 20 years.

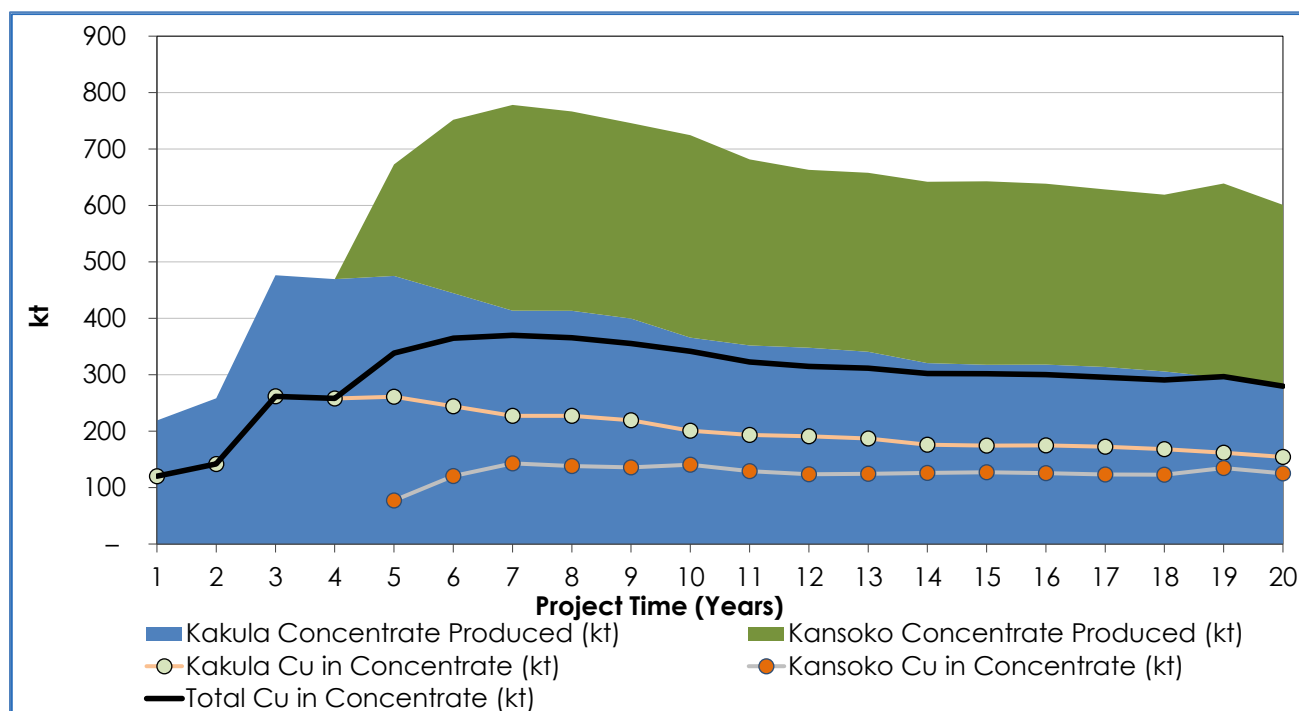


Figure by OreWin 2016.

Table 8. Alternative 8 Mtpa development results summary.

| Item | Unit | Total |
|-----------------------------------|----------|---------|
| Total Processed | | |
| Quantity Milled | kt | 179,492 |
| Copper Feed Grade | % | 4.68 |
| Total Concentrate Produced | | |
| Copper Concentrate Produced | kt (dry) | 15,548 |
| Copper Recovery | % | 86.66 |
| Copper Concentrate Grade | % | 46.83 |
| Contained Metal in Concentrate | Mlb | 16,052 |
| Contained Metal in Concentrate | kt | 7,281 |
| Ten Year Average | | |
| Copper Concentrate Produced | kt (dry) | 586 |
| Contained Metal in Concentrate | kt | 292 |
| Mine-Site Cash Cost | US\$/lb | 0.42 |
| Total Cash Cost | US\$/lb | 1.06 |
| Key Financial Results | | |
| Initial Capital | US\$M | 999 |
| After-Tax NPV8% | US\$M | 4,748 |
| After-Tax IRR | % | 34.6 |
| Initial Project Life | Years | 29 |

Current partners in the Kamo-Kakula Project

The Kamo-Kakula Project is a very large, stratiform copper deposit with adjacent prospective exploration areas within the Central African Copperbelt, located approximately 25 kilometres west of the town of Kolwezi and about 270 kilometres west of Lubumbashi. The Kamo copper deposit was discovered by Ivanhoe Mines (then named Ivanhoe Nickel & Platinum) in 2008 and the Kakula Deposit in early 2016.

In August 2012, the DRC government granted mining licences to Ivanhoe Mines for the Kamo-Kakula Project that cover a total of 400 square kilometres. The licences are valid for 30 years and can be renewed at 15-year intervals. Mine development work at the project began in July 2014 with construction of a box cut for the decline ramps for the Kansoko Mine that will provide underground access to the high-grade mining areas in Kansoko Sud and Kansoko Centrale.

Following the recently signed agreement with the DRC government, Ivanhoe Mines and Zijin Mining each hold an indirect 39.6% interest in the Kamo-Kakula Project, Crystal River Global Limited (“**Crystal River**”) holds an indirect 0.8% interest and the DRC Government holds a direct 20% interest.

In addition, Ivanhoe Mines, Zijin Mining and Crystal River have recently amended their Shareholder, Governance and Option Agreement that originally became effective on December 8, 2015, and under which their relationship in the Kamo-Kakula Project is governed, to, among other things, codify the operation of the project committee and the management of the DRC subsidiary, Kamo Copper SA, so that the agreement is consistent with existing, on-the-ground practice. The amendments also clarify that if Ivanhoe Mines arranges project financing for 65% of the capital required to develop the first phase of the Kamo-Kakula Project, then Ivanhoe Mines will be entitled to acquire the indirect 0.8% interest in the Kamo-Kakula Project held by Crystal River for a price equal to the then current market value of that interest as determined by an independent expert valuator. The acquisition of Crystal River’s indirect 0.8% interest in the Kamo-Kakula Project would give Ivanhoe Mines majority control of Kamo Holding Limited (the entity that presently owns 80% of the Kamo-Kakula Project). Zijin Mining already had committed to use its best efforts to arrange or procure project financing for 65% of the capital required to develop the first phase of the Kamo-Kakula Project, as set out in a feasibility study, without any recourse, and on terms acceptable to Ivanhoe Mines. In the event Ivanhoe Mines and Zijin Mining cannot agree on project financing, the matter will be referred to binding arbitration in Hong Kong.

At the request of Ivanhoe Mines and Zijin Mining and subject to the satisfaction of the applicable conditions, the DRC will provide its assistance in obtaining the advantages contemplated by the DRC’s special law – No. 14/005, enacted to facilitate Sino-Congolese cooperation – relating to the tax, customs, parafiscal tax, non-tax revenues and currency exchange regime applicable to cooperation projects.

Kamo-Kakula Project Mineral Resource estimate

Indicated and Inferred Mineral Resources for the Kakula Deposit have an effective date of October 9, 2016. Indicated and Inferred Mineral Resources for the Kamo Deposit have an effective date of May 5, 2014. Mineral Resources are summarized in Table 9 and are reported on a 100% basis.

Table 9. Consolidated Mineral Resource statement, Kamo-a-Kakula Project, at a 1% copper cut-off over minimum thickness of 3 metres.

| Deposit | Category | Tonnes (millions) | Area (sq. km) | Copper Grade | True Thickness (metres) | Contained Copper (kt) | Contained Copper (billion lbs) |
|-----------------------------|-----------|-------------------|---------------|--------------|-------------------------|-----------------------|--------------------------------|
| Kamo-a | Indicated | 752 | 50.5 | 2.67% | 5.2 | 20,110 | 44.3 |
| | Inferred | 185 | 16.8 | 2.08% | 3.8 | 3,840 | 8.5 |
| Kakula | Indicated | 192 | 4.6 | 3.45% | 14.3 | 6,630 | 14.6 |
| | Inferred | 101 | 3.3 | 2.74% | 10.3 | 2,763 | 6.1 |
| Total Kamo-a-Kakula Project | Indicated | 944 | 55.1 | 2.83% | 6.0 | 26,740 | 58.9 |
| | Inferred | 286 | 20.1 | 2.31% | 4.9 | 6,603 | 14.6 |

Notes to accompany Kamo-a-Kakula Project Mineral Resource table

1. Ivanhoe Mines Mineral Resources Manager, George Gilchrist, Professional Natural Scientist (Pr. Sci. Nat) with the South African Council for Natural Scientific Professions (SACNASP), estimated the Mineral Resources under the supervision of Dr. Harry Parker and Gordon Seibel, both RM of Society of Mining, Metallurgy and Exploration (SME), who are the Qualified Persons for the Mineral Resource estimate. The effective date of the estimate for the Kakula Deposit is October 9, 2016 and for the Kamo-a Deposit is May 5, 2014. Mineral Resources are estimated using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.
2. Mineral Resources are estimated assuming underground mining methods, a copper price of US\$3.30/lb (Kamo-a) and US\$3.00/lb (Kakula Discovery), a cut-off of 1% total copper, a minimum thickness of 3 m, and that concentrates will be produced and sent to a smelter.
3. Tonnage and contained-copper tonnes are reported in metric units, contained-copper pounds are reported in imperial units and grades are reported as percentages.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.

The Kakula Deposit remains open along a northwesterly-southeasterly strike and there is considerable potential for resource expansion. High-grade copper mineralization has been outlined along a corridor that is currently approximately one kilometre wide and at least four kilometres in length. This high-grade corridor lies within an area of 8.7 square kilometres over which resources have been delineated. Given the outstanding success to date in delineating high-grade copper resources, the Kakula drilling program has been expanded by 60,000 metres and will continue unabated into 2017.

Combination of mining methods selected

Mining methods in the Kakula 2016 PEA are assumed to be a combination of controlled-convergence room-and-pillar mining and room-and-pillar mining with hydraulic fill. At the Kakula Phase 1 Mine, the room-and-pillar mining method with hydraulic fill was selected to maximize the extraction of the Mineral Resource where the selected mining height is greater than six metres and two or three mining lifts are required to achieve maximum extraction. At the planned Kansoko Mine, in the Kansoko Sud and Centrale areas, only the controlled-convergence room-and-pillar mining method is required as the mining height is six metres or less. The design for the Kansoko Sud and Centrale mining areas is based on the 2016 Kamoa pre-feasibility study mine design, which includes a service decline and a conveyor decline. The production rate envisaged in the Kakula 2016 PEA increased to 4 Mtpa compared to 3 Mtpa outlined in the 2016 Kamoa pre-feasibility study. At Kakula, the Kakula Deposit similarly is accessed by twin declines and the Kakula Phase 1 Mine also has a productive mining rate of 4 Mtpa.

Controlled-convergence room-and-pillar mining does not require cemented backfill and instead pillars are stripped to allow the controlled convergence of the backs and floors of the mine; this is a productive method that provides very good extractive rates at relatively low costs. The controlled-convergence room-and-pillar mining method has been successfully implemented by KGHM at its copper-mining operations in Poland for the past 20 years. Ivanhoe Mines engaged KGHM Cuprum R&D Centre Ltd. to study the applicability of this method to Kamoa. The results of the study indicate that the Kamoa Deposit is suited to the application of the controlled-convergence room-and-pillar mining method.

Metallurgical test work and concentrator design

Between 2010 and 2015, a series of metallurgical test work programs were completed on drill-core samples of known Kamoa copper mineralization. These investigations focused on metallurgical characterization and flow-sheet development for the processing of hypogene and supergene copper mineralization.

Bench-scale metallurgical flotation test work, carried out at XPS Consulting and Testwork Services laboratories in Falconbridge, Ontario, Canada, has shown positive results. This test work was conducted on composite samples of drill core from the Kansoko Sud and Kansoko Centrale areas in the southern part of the Kamoa Mineral Resource area. Test work on a composite grading 3.61% copper produced a copper recovery of 85.4% at a concentrate grade of 37.0% copper. The second composite, grading 3.20% copper, produced a copper recovery of 89.2% at a concentrate grade of 35.0% copper using the same flowsheet.

Additional bench-scale metallurgical flotation test work was carried out in 2016 on two chalcocite-rich composites from the Kakula Deposit at a Zijin Mining laboratory and by XPS Consulting and Testwork Services. The initial composite, grading 4.1% copper, produced a copper recovery of 86% at a concentrate grade of 53% copper at a Zijin Mining laboratory in July 2016. The second composite, grading 8.1% copper, produced a recovery of 87% at an extremely high concentrate grade of 56% copper. The flotation tests were conducted using the circuit developed during the 2016 Kamoa pre-feasibility study.

Average arsenic levels in the concentrate were measured to be approximately 0.02%, which is significantly lower than the limit of 0.5% imposed by Chinese smelters. Extremely low arsenic levels in concentrate are expected to attract a premium from copper-concentrate traders.

The concentrator design incorporates a run-of-mine stockpile, followed by primary and secondary crushing on surface. The crushed material with a design-size distribution of 80% passing (or p80) nine millimetres ("mm"), is fed into a two-stage ball-milling circuit for further size reduction to a target grind size p80 of 53 micrometres ("µm"). The milled slurry will be passed through a rougher and scavenger. The high-grade, or fast-floating rougher concentrate, and medium-grade, or slow-floating scavenger

concentrate, will be collected separately. The rougher concentrate is upgraded in two stages to produce a high-grade concentrate. The medium-grade scavenger concentrate and tailings from the two rougher cleaning stages, representing approximately 25% of the feed mass, will be combined and re-ground to a p80 of 10µm before being cleaned in two stages. The cleaned scavenger concentrate then will be combined with the cleaned rougher concentrate to form the final concentrate. The final concentrate will be thickened before being pumped to the concentrate filter where the filter cake then will be bagged for shipment to market.

Electricity supply arrangements

Electrical power for the Kamoia-Kakula Project is planned to be sourced on a priority basis from the DRC national grid in return for the financing of the rehabilitation of three hydropower plants: Koni, Mwadingusha and Nzilo. A financing agreement with SNEL has been finalized for upgrading these plants to secure a long-term, clean, sustainable power supply to meet the requirements of the Kamoia-Kakula Project.

The Kakula 2016 PEA's estimated initial capital cost of US\$1.0 billion includes a US\$147 million advance payment to SNEL to upgrade two of the hydropower plants, Koni and Mwadingusha, to provide the Kamoia-Kakula Project with hydroelectric power for its operations. The upgrading work is being led by Stucky Ltd. and the advance payment will be recovered through a reduction in the power tariff. The Kamoia-Kakula Project initially will be powered by existing capacity on the national grid, until upgrading work on the hydropower plants has been completed.

The upgrading work on the first of six generators at the Mwadingusha hydropower plant was completed in August 2016 and the plant began supplying 11 megawatts of electricity to the national interconnected grid in September. The Kamoia-Kakula Project began drawing power from the national grid in October 2016.

Transportation routes to international markets

A phased logistics solution is proposed in the Kakula 2016 PEA. Initially, the corridor between southern DRC and Durban in South Africa is viewed as the most attractive and reliable export route. As soon as the railway between Kolwezi and Dilolo, a town near the DRC-Angolan border, is upgraded, the Kamoia-Kakula Project's production is expected to be transported by rail to the Atlantic port of Lobito in Angola. In addition, there is the potential to negotiate off-take arrangements with smelters in Zambia.

Qualified persons

The following companies have undertaken work in preparation of the Kakula 2016 PEA:

1. OreWin – Overall report preparation, mining, logistics, power and economic analysis.
2. MDM/Amec Foster Wheeler – Mineral Resource estimation, processing and infrastructure.
3. SRK Consulting – Mine geotechnical recommendations.

The independent Qualified Persons responsible for preparing the Kakula 2016 PEA, on which the technical report will be based are Bernard Peters (OreWin); Dr. Harry Parker (Amec Foster Wheeler); Gordon Seibel (Amec Foster Wheeler); John Edwards (MDM/Amec Foster Wheeler); and William Joughin (SRK). Each Qualified Person has reviewed and approved the information in this material change report relevant to the portion of the Kakula 2016 PEA for which they are responsible.

Other scientific and technical information in this material change report has been reviewed and approved by Stephen Torr, P.Geo., Ivanhoe Mines' Vice President, Project Geology and Evaluation, a Qualified

Person under the terms of National Instrument 43-101. Mr. Torr has verified the technical data disclosed in this material change report.

Wood Mackenzie provided data based on public disclosure of comparable copper projects for the compilation of certain figures used in this material change report; however, Wood Mackenzie did not review the Kakula 2016 PEA.

Kamoa 2016 PFS Mineral Reserve

The Kakula 2016 PEA assumes changes to the project production rate for both mining and processing of the Kamoa Mineral Resources and that a separate mine and processing plant is to be constructed at Kakula. The Kamoa 2016 PFS Mineral Reserve remains valid and is the current Mineral Reserve for the Kamoa-Kakula Project. The Mineral Reserve has an effective date of March 29, 2016 and has been estimated by Qualified Person Bernard Peters, Technical Director – Mining, OreWin Pty. Ltd. using the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves to conform to the Canadian NI 43-101 Standards of Disclosure for Mineral Projects. The Mineral Reserve is based on the planned Kansoko Mine operation at a production rate of 3 Mtpa and is entirely a Probable Mineral Reserve that was converted from Indicated Mineral Resources.

Data verification and quality control and assurance

Amec Foster Wheeler reviewed the sample chain of custody, quality assurance and control procedures, and qualifications of analytical laboratories. Amec Foster Wheeler is of the opinion that the procedures and QA/QC control are acceptable to support Mineral Resource estimation. Amec Foster Wheeler also audited the assay database, core logging and geological interpretations on a number of occasions between 2009 and 2015 and has found no material issues with the data as a result of these audits.

In the opinion of the Amec Foster Wheeler Qualified Persons, the data verification programs undertaken on the data collected from the Kamoa-Kakula Project support the geological interpretations. The analytical and database quality and the data collected can support Mineral Resource estimation.

Ivanhoe Mines maintains a comprehensive chain of custody and QA/QC program on assays from its Kamoa-Kakula Project. Half-sawn core is processed at its on-site preparation laboratory in Kamoa, prepared samples then are shipped by secure courier to Bureau Veritas Minerals (BVM) Laboratories in Australia, an ISO17025 accredited facility. Copper assays are determined at BVM by mixed-acid digestion with ICP finish. Industry-standard certified reference materials and blanks are inserted into the sample stream prior to dispatch to BVM. For detailed information about assay methods and data verification measures used to support the scientific and technical information, please refer to the current technical report on the Kamoa-Kakula Project on the SEDAR profile of Ivanhoe Mines at www.sedar.com.

Item 6 Reliance on subsection 7.1(2) of National Instrument 51-102

Not applicable.

Item 7 Omitted Information

No confidential information has been omitted from this material change report.

Item 8 Executive Officer

For further information, please contact Mary Vincelli, Vice President, Compliance and Corporate Secretary of the Company, at +1 604 331 9882.

Item 9 Date of Report

December 21, 2016