

ASX Announcement  
28 June 2022

# KCGM MILL OPTIMISATION PRE-FEASIBILITY STUDY UPDATE

## Opportunity to deliver higher-margin ounces at improved capital efficiency

### KEY POINTS

- Tier-1 gold asset based on Mineral Resource<sup>1</sup>, green power strategy, production, mine life and jurisdiction
- Focus on optimising KCGM to drive increased shareholder returns
- All three expansion options considered as part of KCGM Mill Optimisation PFS deliver significantly higher free cash flow
- Final study phase underway to further maximise shareholder value beyond robust PFS options

Northern Star Resources Limited (ASX: NST) is pleased to present three mill expansion options that were considered as part of the KCGM Mill Optimisation Pre-Feasibility Study. Next steps include finalising the Feasibility Study, where opportunities to further maximise value may be progressed, subject to an investment decision.

Located in Kalgoorlie, Western Australia, KCGM is one of the world's largest and most significant gold mines with a Mineral Resource of 27.4Moz and an Ore Reserve of 11.9Moz. The growth optionality that comes with owning an asset as large as KCGM, is significant and unmatched across Australia.

Northern Star acquired 50% of KCGM on 3 January 2020 and assumed 100% control of KCGM as a result of the merger with Saracen Mineral Holdings Ltd, which was implemented on 12 February 2021. Since then, Northern Star has made major progress enhancing the Company's understanding of the underground resource base as well as optimising the mine through new fleet delivery to enable increased material movements. Progress highlights with geology and mining to date include:

- A substantial increase of the Mineral Resource to 27.4Moz and Ore Reserve to 11.9Moz;
- Cutting the first underground portal in the Super Pit in almost 25 years to establish an exploration drill platform;
- More than doubling material movements to 65Mtpa, in line with pathway to 80-100Mtpa; and
- Since consolidation, increase of the Fimiston underground Mineral Resource to 65Mt @ 2.3g/t for 5.0Moz; and increase of the Mt Charlotte underground Ore Reserve to 1.2 Moz.

Following consolidation of a 100% interest in KCGM, Northern Star commenced a process to investigate opportunities to create capital efficient, high-returning growth outcomes that may see the Company unlock additional value - more quickly - from this world-class operation. As KCGM transitions to a lower-cost position, the Company will be able to revisit the geological model and identify extra opportunities, including in the broader region. Against this backdrop, Northern Star's green power strategy will cut carbon emissions and lower power costs.

Importantly, the mill optimisation study work enhances Northern Star's social investment by ensuring KCGM can make a responsible and significant contribution to sustainable mining and offer broader ESG benefits in the Goldfields region, including in the areas of safety, social performance, employment and infrastructure. Northern Star continues to welcome highly capable workers into our Goldfields teams to strengthen the Company's position as a sought-after, highly respected employer.

<sup>1</sup> Includes Measured, Indicated and Inferred Resources and is inclusive of Ore Reserves.

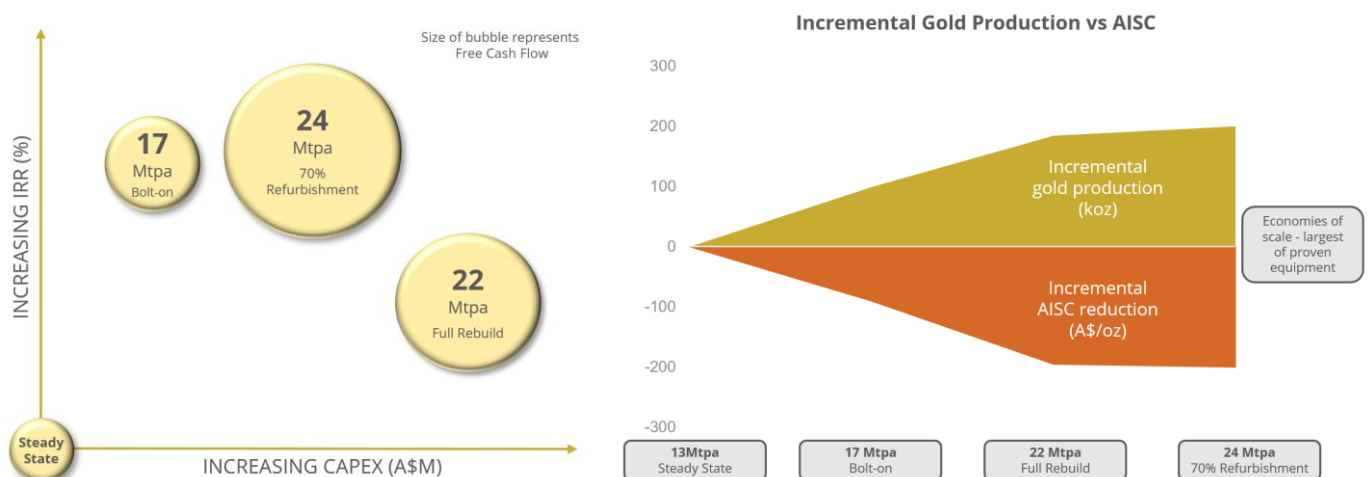
Three expansion options were considered and evaluated in the KCGM Mill Optimisation PFS:

- Maintain 13Mtpa milling capacity – Steady State
- Expand to 17Mtpa milling capacity – Bolt-on expansion
- Expand to 24Mtpa milling capacity – 70% process plant refurbishment
- Expand to 22Mtpa milling capacity – Full rebuild (greenfield process plant)

All three mill expansion options<sup>2</sup> are financially compelling<sup>3</sup> (post tax) and deliver meaningful operational benefits:

- At gold price of A\$2,250/oz:
  - IRR: 13–26%
  - Payback: 3-5 years
- At spot price of A\$2,600/oz:
  - IRR: 16-31%
  - Payback: 2-5 years
- Capex: A\$440M – A\$1,400M
- Substantial increase in NPV
- Gold production growth of 100-200kozpa<sup>4</sup>
- KCGM AISC reduction up to A\$200/oz<sup>4</sup>

Figure 1. Pre-feasibility study: three mill expansion options being considered



Commenting on the KCGM Mill Optimisation PFS Update, Northern Star Managing Director Stuart Tonkin said:

*"The PFS outcome confirms the enormous opportunity on offer at KCGM, a truly world-class gold asset. Since we moved to 100% ownership of KCGM a little over a year ago, we have diligently and efficiently worked through potential options to create further value for all stakeholders. We believe Northern Star's powerful combination of continued operational excellence, the strongest asset portfolio in our history and a commitment to deliver social value, will enable us to provide attractive returns and long-term value growth."*

*"The PFS determined that the three mill expansion options are financially compelling and offer significant operational benefits to potentially create substantially more value than maintaining today's 13Mtpa milling capacity. The PFS work showed an expanded mill capacity, underpinned by a simplified processing circuit flow sheet, could lower KCGM's AISC by up to A\$200/oz as well as boost annual production by up to 200,000oz. The key difference between the three mill expansion options is free cash flow generation, a key strategic pillar for the Company."*

<sup>2</sup> Permitting is required for all expansion options. 22Mtpa option requires new plant location on the existing tenure footprint.

<sup>3</sup> Potential mine optimisation not included in presented metrics; Financial metrics are post tax. Life of Mine metrics assume tonnage remains constant.

<sup>4</sup> Average over first 10 years post-construction.

*"We will now embark on the final study phase to optimise the best pathway to generate superior returns for shareholders. We will not grow for growth's sake but remain focused on the disciplined and transparent allocation of capital and a strong balance sheet."*

*"While we are confident and well-positioned to pursue a mill expansion at KCGM given access to a highly skilled workforce and our recent major project experience, maintaining the current 13Mtpa milling capacity is an option that remains firmly on the table."*

*"Regardless of the outcome of the final feasibility work to determine the most valuable option, the KCGM pathway to 650kozpa by FY26 remains unchanged, with regional synergies and production growth enabling a lower AISC position than we are achieving today."*

*"I am proud of the Northern Star team for getting us to this stage without losing focus of the overarching purpose to generate superior shareholder returns. The Company is fortunate to have a world-class asset like KCGM in its portfolio, which gives us optionality that is unrivalled in the Australian gold space. I look forward to updating shareholders on the outcome of the final stage of our KCGM feasibility work in due course."*

### Shareholders – Live Video Stream

Stuart Tonkin (Managing Director), Ryan Gurner (Chief Financial Officer) and Steven McClare (Chief Technical Officer) will host a live investor briefing to cover key findings from the PFS at **11:00am AEST (9:00am AWST) today, 28 June 2022**.

To listen in live, please click on the following link and register your details. Investors will be able to submit questions via the Q&A Chat function.

[https://webcast1.boardroom.media/watch\\_broadcast.php?id=62b3cc6e2151f](https://webcast1.boardroom.media/watch_broadcast.php?id=62b3cc6e2151f)

Investors are advised that a recording of the webcast will be available on the same link approximately one hour after the conclusion of the webcast.

### About Northern Star

Northern Star is a global gold mining company. Our purpose is to generate superior returns for our shareholders while providing positive benefits for our stakeholders through operational effectiveness, exploration and active portfolio management.

Authorised for release to the ASX by Stuart Tonkin, Managing Director & CEO.

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### **ASX Listing Rules Disclosures**

This announcement contains current estimates of Northern Star's KCGM Operations' Ore Reserves and Mineral Resources. The information in this announcement that relates to the current Ore Reserves and Mineral Resources, and production targets of Northern Star has been extracted from the ASX release by Northern Star entitled "Resources, Reserves and Exploration Update" dated 3 May 2022 available at [www.nsrltd.com](http://www.nsrltd.com) and [www.asx.com](http://www.asx.com) ("Northern Star Announcement").

Northern Star confirms that it is not aware of any new information or data that materially affects the information included in the Northern Star Announcement other than changes due to normal mining depletion during the three month period to 28 June 2022, and, in relation to the estimates of Northern Star's KCGM Operations' Ore Reserves and Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the Northern Star Announcement continue to apply and have not materially changed. Northern Star confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from that announcement.

Assumptions made in relation to the Ore Reserves and Mineral Resources underpinning the production targets in that announcement are (in summary):

- Current operational capital and operating cost structures,
- Current mining and metallurgical performance,
- The gold price, exchange rate, dilution allowance and mining recovery rates are as set out in each prior public report referred to in ASX Listing Rule 5.19 disclosures, and
- 5 year gold production profiles are based on 100% current JORC compliant Ore Reserves.



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