



KCGM Mill Optimisation Pre-Feasibility Study Update

June 2022

Forward Looking Statements, Reserves and Resources

Forward Looking Statements

Northern Star Resources Limited has prepared this announcement based on information available to it. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this announcement. To the maximum extent permitted by law, none of Northern Star Resources Limited, its directors, employees or agents, advisers, nor any other person accepts any liability, including, without limitation, any liability arising from fault or negligence on the part of any of them or any other person, for any loss arising from the use of this announcement or its contents or otherwise arising in connection with it.

This announcement is not an offer, invitation, solicitation or other recommendation with respect to the subscription for, purchase or sale of any security, and neither this announcement nor anything in it shall form the basis of any contract or commitment whatsoever.

This announcement may contain forward looking statements that are subject to risk factors associated with gold exploration, mining and production businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to price fluctuations, actual demand, currency fluctuations, drilling and production results, Resource or Reserve estimations, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory changes, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

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.nsrld.com and 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.

Rounding is applied in this presentation for the percentage comparisons and for the 31 March 2022 Ore Reserves and Mineral Resources figures.

Unless stated otherwise, all currency conversions in this document have been converted at a currency of A\$/US\$ conversion rate of \$0.75.

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

Presentation team



Stuart Tonkin

Managing Director & CEO

Mr Tonkin is a mining engineer with more than 25 years' experience working in the underground hard-rock mining industry. He joined Northern Star as Chief Operating Officer in 2013 before being appointed CEO in 2016 and Managing Director in 2021.



Ryan Gurner

Chief Financial Officer

Mr Gurner is a Chartered Accountant with extensive global financial and commercial experience spanning over 20 years. He was re-appointed Chief Financial Officer in December 2021, a position he held prior to the merger with Saracen Mineral Holdings.



Steven McClare

Chief Technical Officer

Mr McClare is a mining engineer with over 30 years of technical, operational and project experience in the mining industry. His extensive career includes building multi-billion dollar caving projects and bringing mines from design through to production. He joined Northern Star as Chief Technical Officer in July 2021.

World class gold assets in Tier-1 locations

Our Purpose

To **generate superior returns for our shareholders**, while providing positive benefits for our stakeholders, through operational effectiveness, exploration and active portfolio management

1

Commodity

2

Countries

3

Production
Centres

Pogo

7.3Moz Resource
1.8Moz Reserve

US
(Alaska)

Yandal

9.8Moz Resource
3.9Moz Reserve

Kalgoorlie

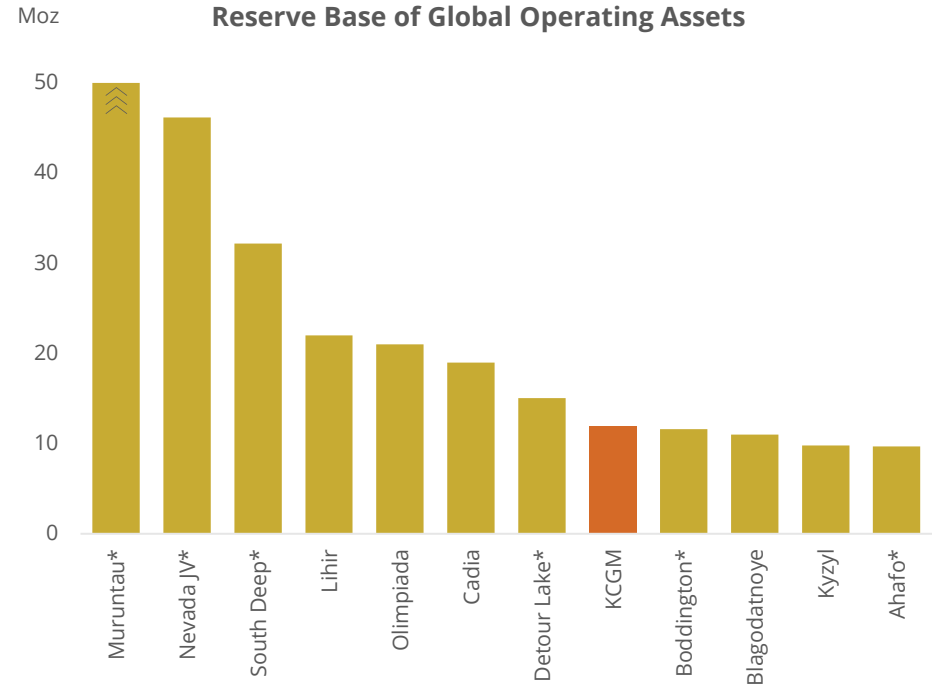
37.1Moz Resource
14.9Moz Reserve

Perth

Australia

KCGM: One of the world's most significant gold mines

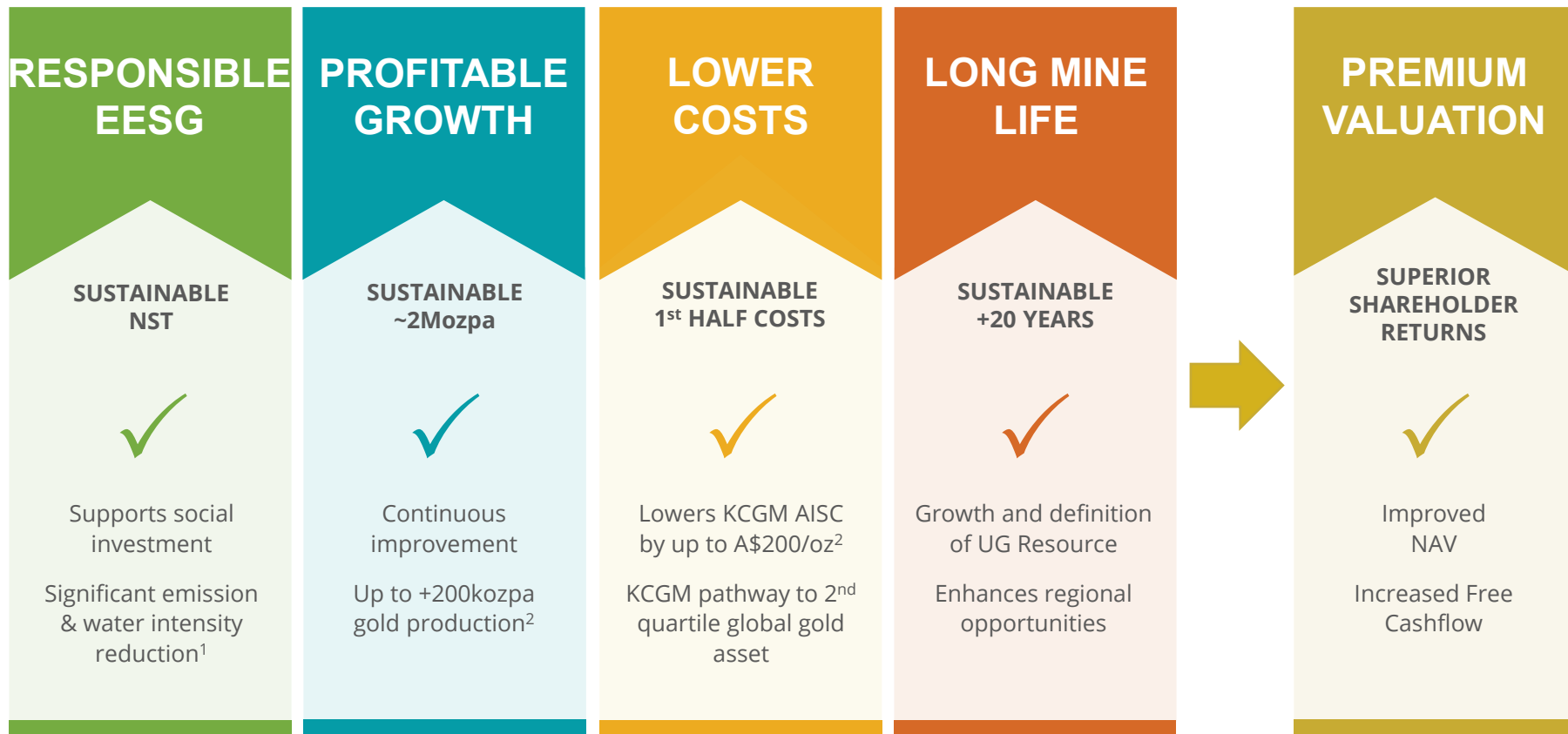
- A Tier-1 world-class gold operating asset; 100% ownership
- Ranked Top 8 globally by Reserve*
(27.4Moz Mineral Resource & 11.9Moz Ore Reserve)
- 297km² of tenure, hosting +30km of the Boulder-Lefroy structural corridor
- Produced +65Moz gold since first production in 1893
- On track to deliver 650kozpa by FY26



Asset Reserves are reported in accordance with the JORC Code 2012, unless otherwise noted by an asterisk.

* Nevada JV, Boddington, Ahafo Reserves have been prepared in accordance with the new Regulation S-K 1300 requirements; Detour Lake Reserves prepared in accordance with the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101"); South Deep Reserves prepared in accordance with the South African code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2016 edition (SAMREC Code); Muruntau Reserves prepared in accordance with the former Soviet system for classification of Mineral Resources & Reserves.

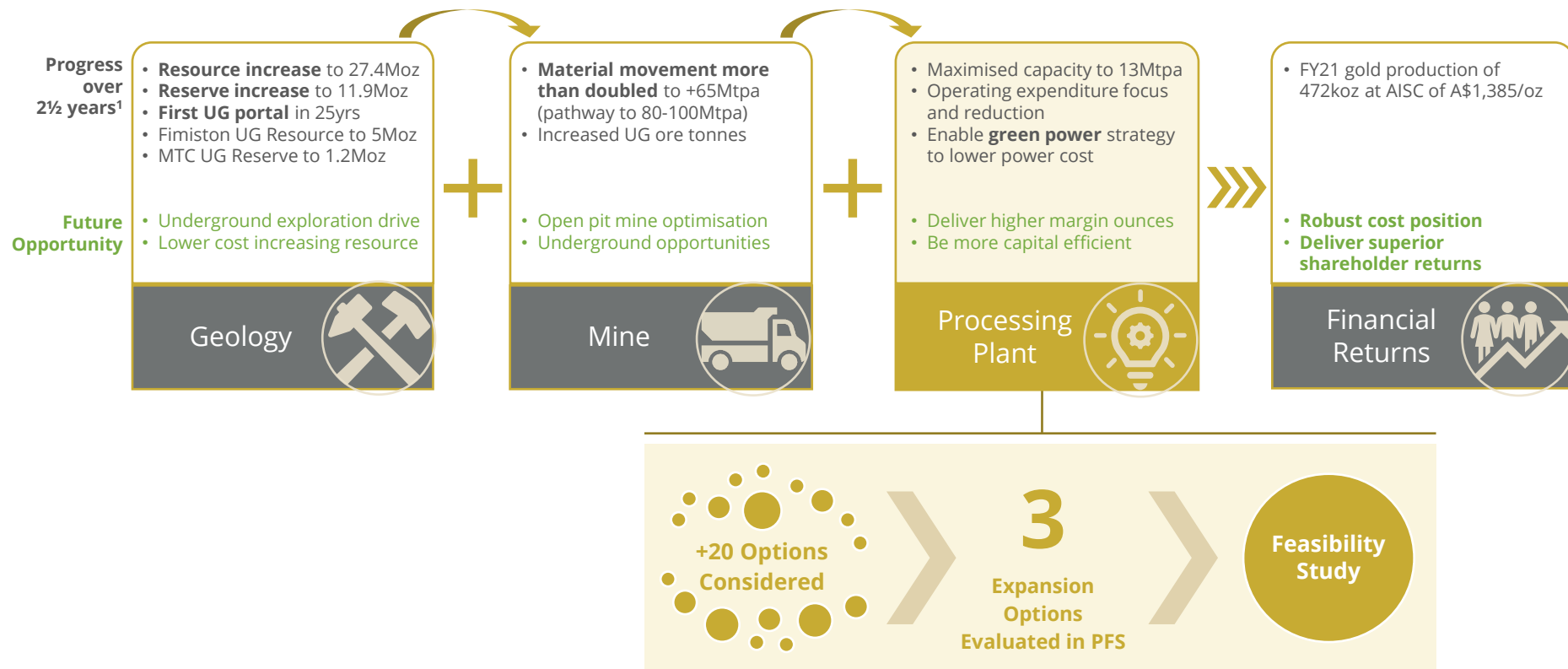
Optimising KCGM aligns to our strategy



¹ Water intensity measured as cubic metres per tonne of processed tonnes.

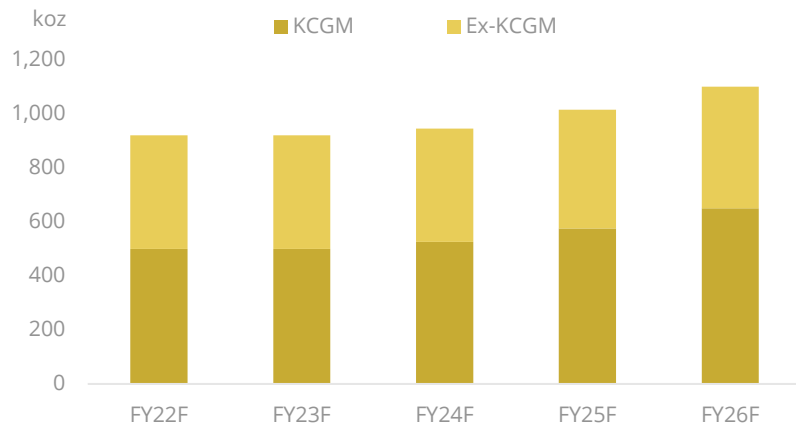
² Average over first 10 years.

Major progress at KCGM but more optimisation to come



¹ Northern Star acquired 50% of KCGM on 3 January 2020, and acquired 100% control of KCGM as a result of the merger with Saracen Mineral Holdings Ltd implemented on 12 February 2021.

KCGM: Currently 13Mtpa milling capacity



Pathway to 650kozpa by FY26 remains unchanged

- Increase near-term capital investment; material movement to 80-100Mtpa
- Envable optionality:
 - Open pit and underground mines with significant installed infrastructure
 - Large and growing gold Reserves and Resources
- Regional synergies and production growth enable lower AISC position
- Steady free cash flow

KCGM Production Profile	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
Open Pit													
Oroya Brownhill													
Fimiston South Stage 1													
Golden Pike South													
Fimiston South Stage 2													
Golden Pike North													
Underground													
Mount Charlotte													
Stockpiles													
Reserve Stockpiles													

Flashback to Investor Day July 2021

KCGM - Processing optionality

13Mtpa current capacity, expansion studies underway

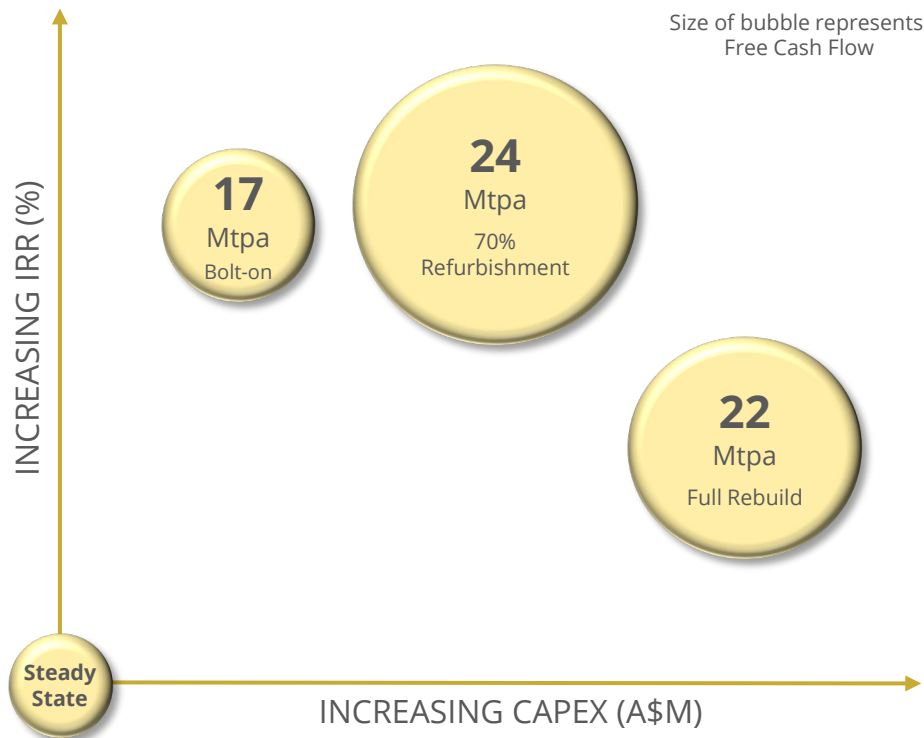
- As mining increases, the Reserve stockpile value becomes increasingly stranded
- Evaluating mill expansion options**
 - NOT in current 5-year plan**
 - Simplified mill layout lowering unit costs
 - Mill grades decrease on increased throughput as stockpile is processed earlier
 - Option studies involve:
 - Simplified grinding circuit, fewer larger mills
 - Increased residence time / recovery opportunities
 - Control system optimisation

KCGM processing studies

	Current	Option 1	Option 2
Number of mills	5	4	3
Throughput (Mtpa)	13	17	22
Mill grade (g/t)	1.4-1.9	1.7	1.6
Recovery (%)	84%	84%	84%
Production (kozpa)	500-675	750+	850+

- 
- Market update June Half 2022**

Pre-feasibility study: Three expansion options being considered



All three mill expansion options are **financially compelling**¹ (post tax)

- 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

¹ Potential mine optimisation not included in presented metrics; Life of Mine metrics assume tonnage remains constant.

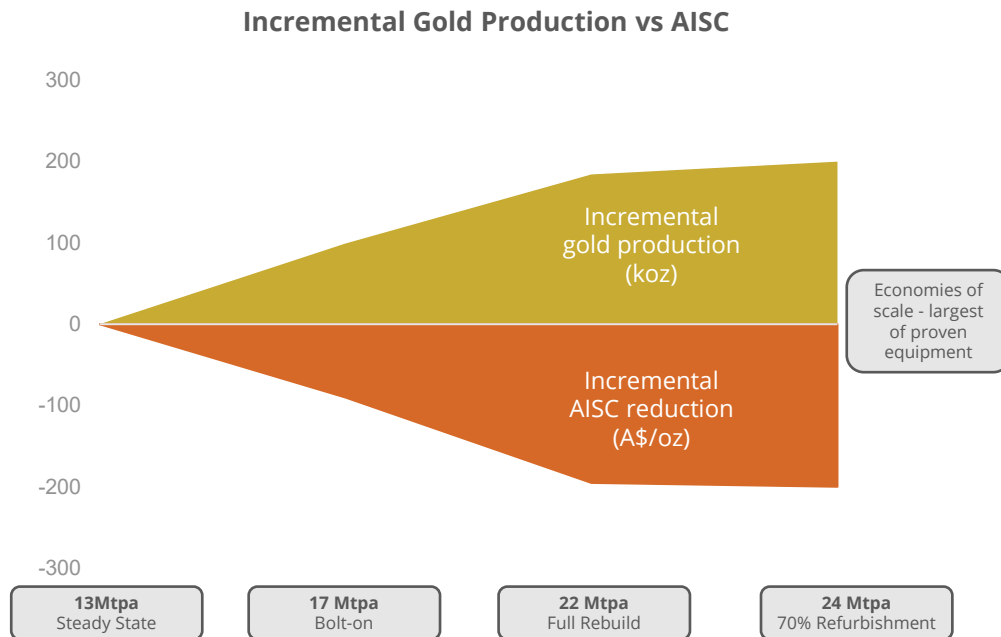
Pre-feasibility study: Three expansion options being considered

All three expansion options¹ deliver **meaningful operational benefits:**

- Gold production growth of 100–200kozpa²
- KCGM AISC reduction up to A\$200/oz²
- Renewables deliver emissions and costs reduction

Further opportunities provided by:

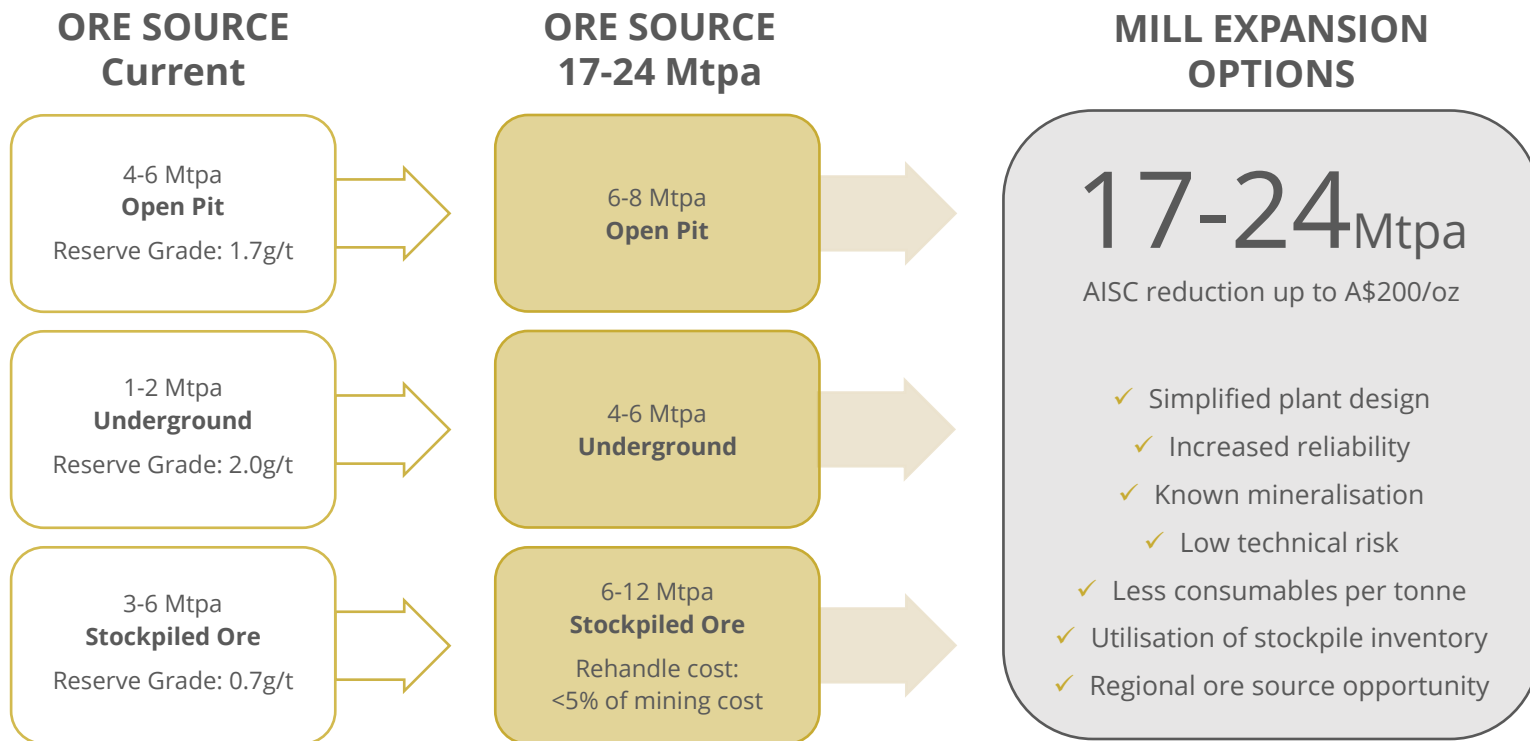
- Open pit mine optimisation
- Underground mining growth
- Leverage UG resources vs stockpiles
- Regional opportunities as a result of lower cost base
- Resource conversion growth
- Scheduling and project execution planning



¹ Permitting is required for all expansion options. 22Mtpa option requires new plant location on the existing tenure footprint.

² Average over first 10 years post-construction.

Pre-feasibility study: Optimising the feed source

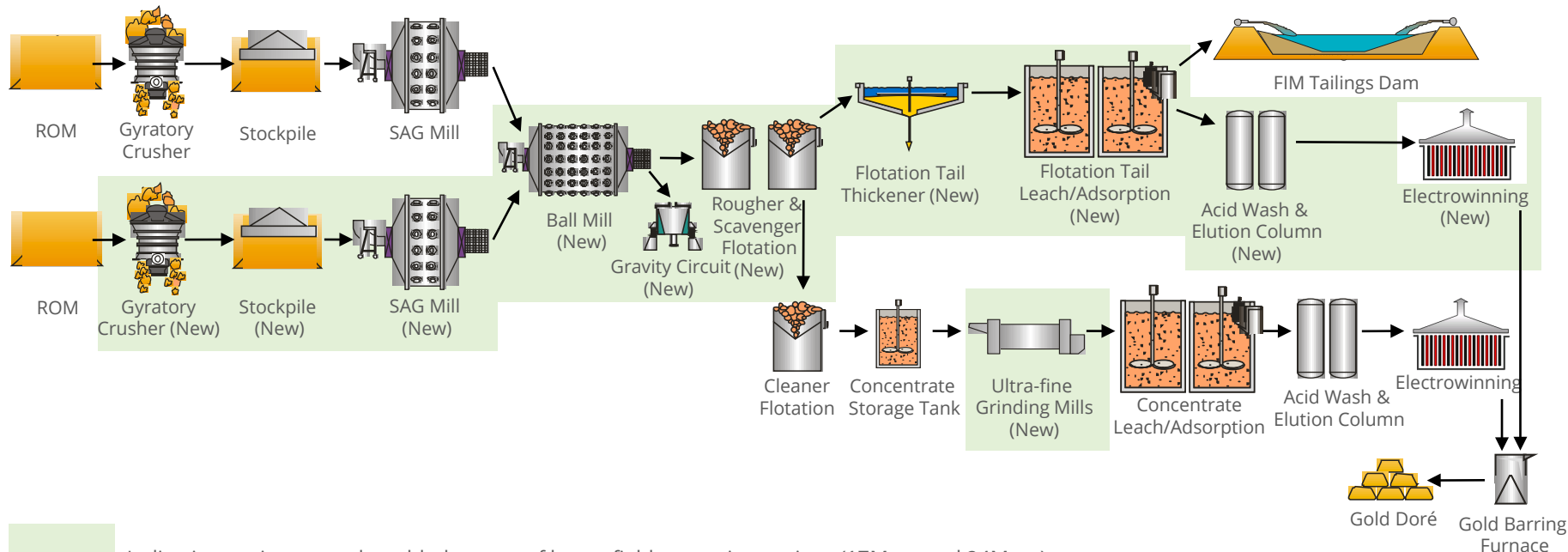


Pre-feasibility study: A simplified flow sheet

Lower operating costs

Fimiston mill revitalisation
for next 30 years

Increased reliability

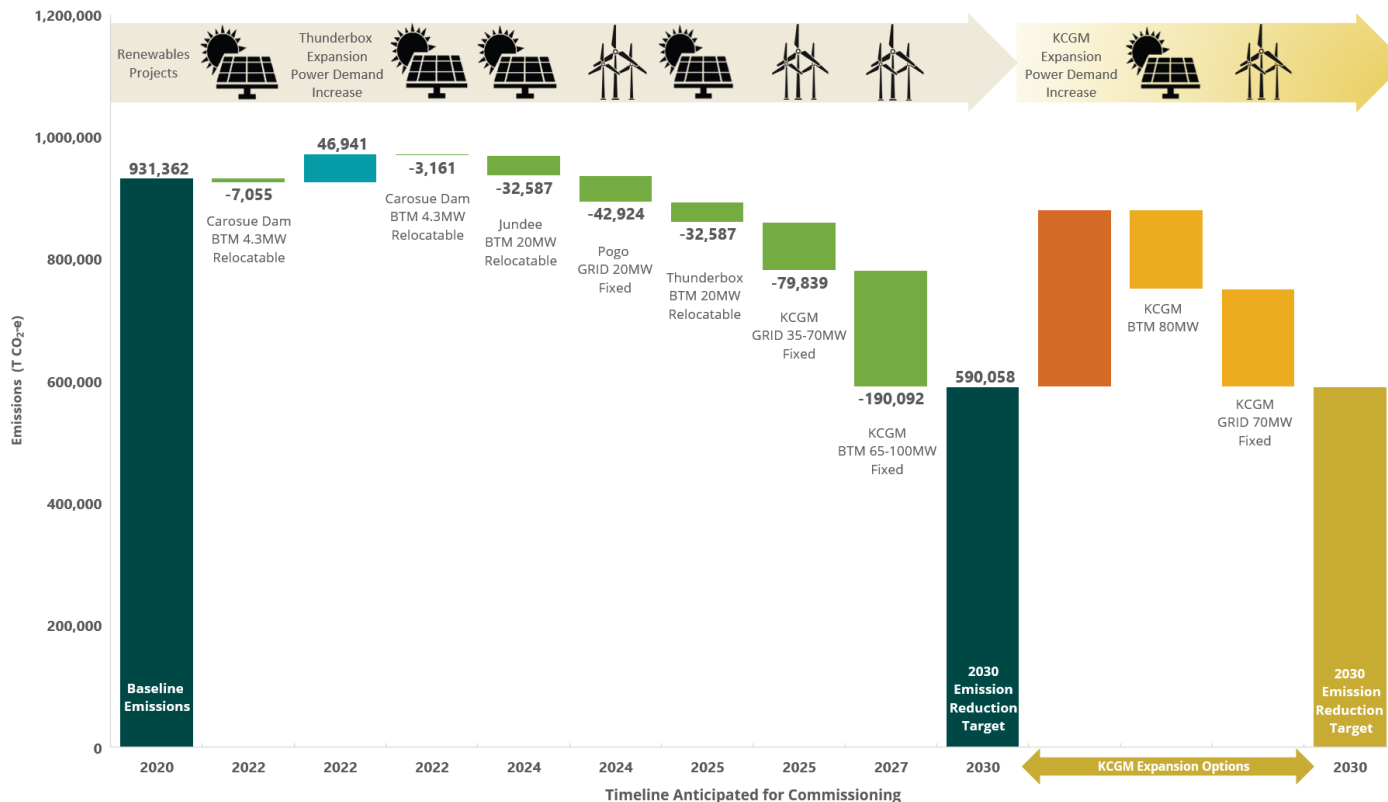


Indicative equipment to be added as part of brownfield expansion options (17Mtpa and 24Mtpa)

2030 Pathway to reduce emissions by 35%

Leveraging strategic option value from recent acquisition of Goldfields Power (Parkeston, Kalgoorlie)




Northern Star 2030 Emissions Reduction Pathway



PFS:
Four Options

KCGM
Up to 60%
renewable
power

Indicative schedule from FID

Task	Year 1	Year 2	Year 3	Year 4
Engineering and Design				
Construction				
Commissioning and Ramp-up				
Throughput	13 Mtpa			17-24 Mtpa

3 Options	Capital Cost (A\$M)			
From A\$440M to A\$1,400M Inclusive of ~20% contingency	15%	35%	35%	15%

Capital management framework

CAPITAL ALLOCATION

- Organic growth
- Active portfolio management
 - Dividends maintained
 - Retained earnings

FINANCIAL STRENGTH¹

- A\$1.4B liquidity
- Net Debt/EBITDA less than zero
 - Project capex self-funded

RISK MANAGEMENT

- 3 year hedge book²
(1.1Moz at A\$2,446/oz)
- Free cash flow generation
in all options

MAXIMISE SHAREHOLDER RETURNS

¹ Liquidity of A\$1.4B as at 31 March 2022 (cash, bullion and undrawn facilities) vs target range of A\$1.0-1.5B; Leverage ratio (Net Debt/EBITDA) target range of less than 1.5x; Gearing ratio (Debt/Debt+Equity) target range of below 20%.

² As at 31 March 2022.

Risk considerations in the current inflationary environment



Macro

Current environment

Recession fears, stagflation risk, policy uncertainty

KCGM - Our competitive advantage

Tier-1 location in Kalgoorlie, with substantial existing infrastructure



Inflation

Impact of capital and costs on the project

De-risk price and timing of long lead items, similar to TBO project



Gold Price

Decoupling of historic trends

Gold price hedging and undisrupted operational cash flows during build



Labour

WA labour tightness, scarcity of skilled labour

Blended owner & contractor teams, managing in current environment



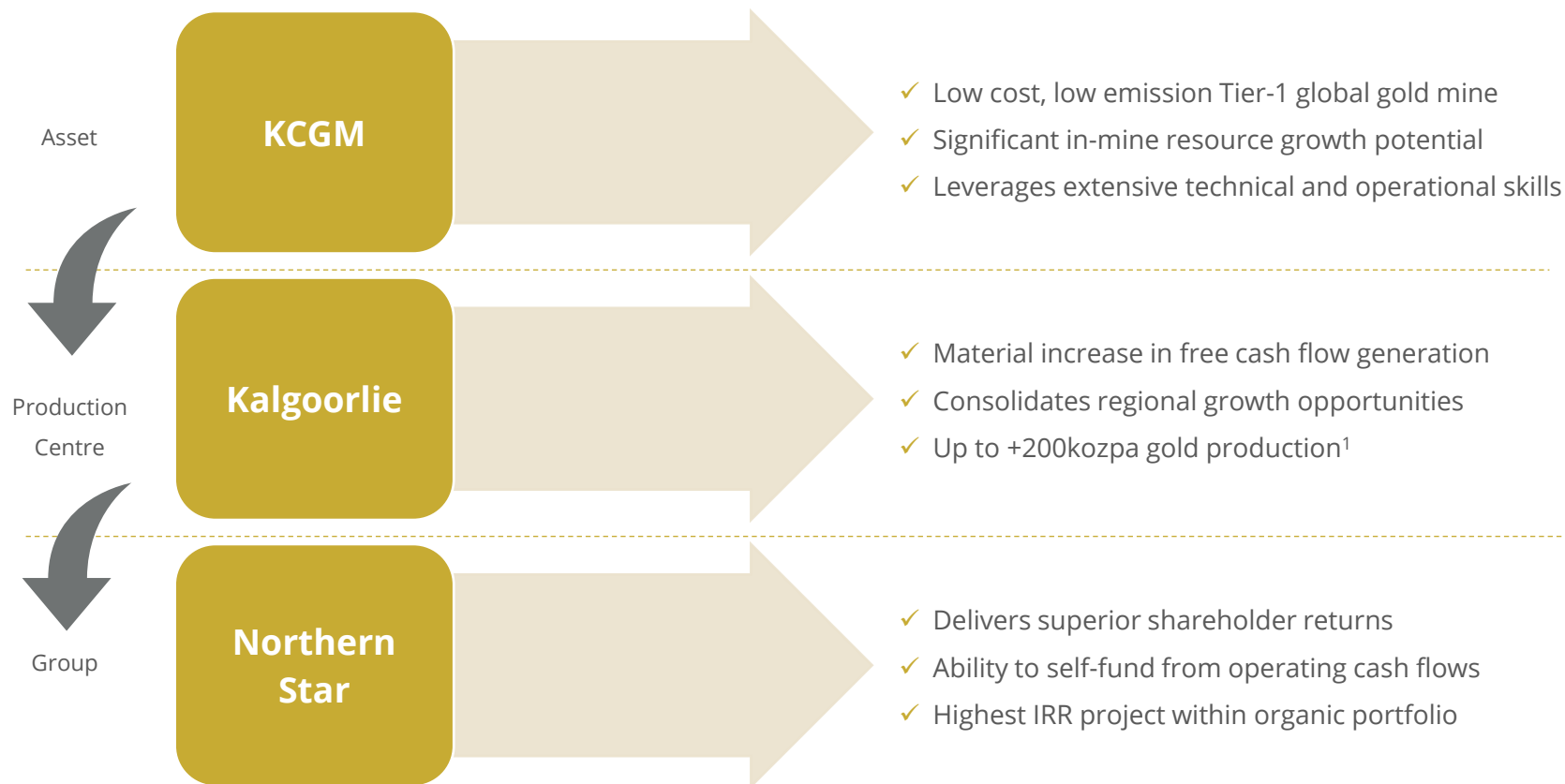
Supply Chains

Bottlenecks remain, delivery uncertainty, supply issues

Simplified design with established supply chain relationship

Disciplined risk management approach throughout project execution

Optimising KCGM to further strengthen Northern Star



¹ Average over first 10 years

Next steps

- ✓ Embark on final study phase
 - Optimise the best pathway to generate superior returns for our shareholders
- ✓ Remain agile given risk considerations in the current inflationary environment
- ✓ Progressive updates over FY23 on the outcome of our KCGM feasibility study work





Questions?

Northern Star Resources Limited

ASX Code: NST

Business First.

Investor Enquiries:

Sophie Spartalis

T: +61 8 6489 2488

E: investorrelations@nsrltd.com

W: www.nsrltd.com