



NORTHERN STAR  
RESOURCES LIMITED

[nsrltd.com/sustainability](https://nsrltd.com/sustainability)

**Sustainability  
Report 2021**



## Acknowledgement of Country

Northern Star would like to acknowledge and pay our respects to Traditional Owner groups whose land we are privileged to work on, and whose input and guidance we seek and value within the operation of our business. We acknowledge their strong and special physical and cultural connections to their ancestral lands:

- Whadjuk Noongar
- The Wiluna Martu
- Kultju
- Tjiwarl
- Maduwongga
- Marlinyu Ghoorlie
- Tjurabalan
- Walpiri and Yapa
- Puutu Kunti Kurrama and Pinikura
- Jurruru
- Yinhawongka
- Nyalpa Pirniku
- Kakarra Part A
- Darlot

Northern Star would also like to acknowledge Doyon Limited, whose traditional lands surround our Pogo Operation in Alaska, USA.

## Our Mission

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

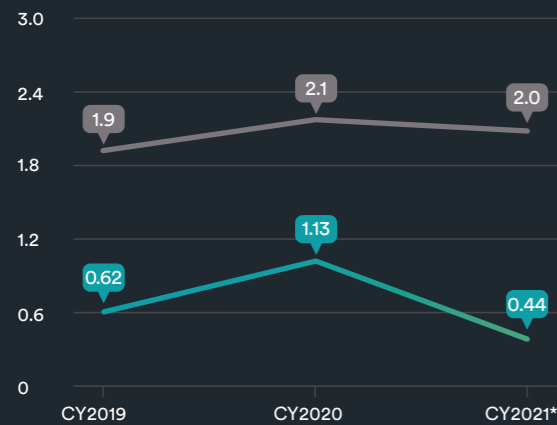


# CY21 Sustainability Snapshot

## Safety Performance

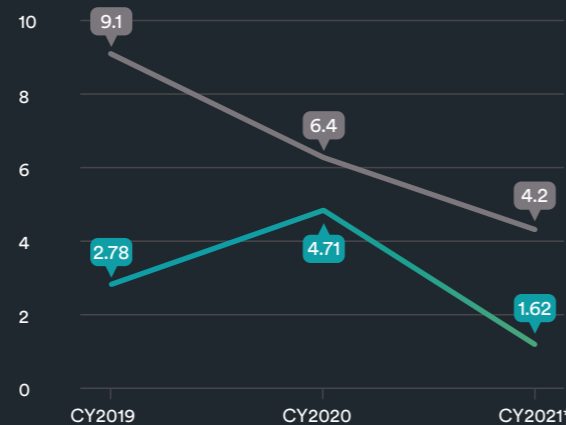
**CY2021 LTIFR**

**0.44**



**CY2021 TRIFR<sup>1</sup>**

**1.62**



Key — Northern Star — Industry average

The post merger integration has demonstrated an effective alignment in performance improvement.

## Our People

### Our Workforce

**5,322**

Employees and Contractors

### Female Employment

**23%**

> % Industry average of 19.7%<sup>2</sup>

### Culture Survey Participation

**86%**

\* Total number of hours worked in CY2021: 13,845,675 (Jan – Dec)  
 1 Number of recordable injuries per million hours worked. Calculated on a 12-month rolling average  
 2 Comparison Group is WGEA Gold Ore Mining Companies with 1000+ employees as at last published WGEA data 31 March 2020.  
 CY2021 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2019-20 Metalliferous total

CY2020 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2018-19 Metalliferous total  
 CY2019 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2017-18 Underground Metalliferous

## Our Business

### Gold Sold

**1.54<sup>Moz</sup>**

### Governance

**100%**

Alignment with ASX Corporate Governance Principles & Recommendations

### Modern Slavery Supplier Surveys

**30%** of Group suppliers surveyed in FY2021

↑ **125%** since previous survey

### Revenue in CY2021

**\$3,457M**

## Environment and Social Responsibility

### Total Economic Value Add

**\$3.2B**

**CY2021**  
57% increase from CY2020



### Carbon Footprint

#### Scope 1

**692k**

t CO<sub>2</sub> -e

#### Scope 2

**477k**

t CO<sub>2</sub> -e

**Net Zero** ambition for Scope 1 & 2 emissions by

**2050**

**0**

**Target 35% reduction** in Scope 1 & 2 emissions by

**2030**

**-35%**

# A Message from our ESS Chair

## Dear Shareholders, Stakeholders and Employees

I am pleased to share this 2021 Sustainability Report with you.

Northern Star defines ESS to be a broad set of environmental, social performance and engagement and safety outcomes which may impact Northern Star's ability to execute its business strategy and create value over the long term. At Northern Star, we believe that ESS performance is inextricably linked to our overall business success and that delivering superior outcomes for our people, our communities and our planet underpins a sustainable and a profitable outlook for our shareholders. Our shareholders and other stakeholders have clearly communicated and supported this heightened focus on ESS, and our Report reflects some strong influence from all those inputs. As will be evidenced throughout this Report we continue to work to maximise transparency, further refine our ESS risks and mitigations and map our pathway to a cleaner, safer, and inclusive future. Transparent and well communicated reporting and disclosure of challenges and progress, builds trust and credibility with our stakeholders.

We understand that ESS disclosure is fundamental to a healthy, efficient and profitable business.

After several years of preparing and releasing sustainability reports, Northern Star has a better understanding of its operational performance in terms of the cost and efficient use of power and other resources, business risks, influence over employee attraction and retention, more efficient use of water and improved waste reduction practices. Real business benefits have been delivered, and real business risks have been mitigated as a result of the recent years' work in relation to ESS, now embedded in all decisions we make at Northern Star.

Northern Star is committed to reducing the carbon footprint of our operations and enhancing our resilience to physical and transitional climate-related risks. Fossil fuels (diesel and natural gas) dominate Northern Star's current energy value chain, resulting in 931kt CO<sub>2</sub>-e emissions in 2020. These fuels are used for on-site electricity generation for off-grid assets, and backup power generation for assets on the grid. Approximately 70% of our carbon



Goodpaster River near  
Pogo, Alaska

footprint is attributable to purchased and generated electricity, and 25% is attributable to mobility.

To align with climate science and the curbing of climate change on a 1.5°C pathway, we have developed a decarbonisation roadmap which in the medium-term focuses primarily on the energy value chain, with a reduction in reliance on fossil fuels, moving to electricity generated by renewables. In the longer term we will focus on battery storage and ways to replace diesel fuel in our mobile fleets.

In this Report, we have sought to meet best practice in disclosing our commitments on climate change, namely:

- **Commitment to net zero Scope 1 and 2 absolute emissions by 2050**  
On 22 July 2021 we disclosed our net zero ambition for 2050
- **Appropriate ambitious medium-term targets**  
This Report includes a targeted reduction of 35% in Scope 1 and 2 absolute emissions by 2030 relative to 1 July 2020 baseline levels
- **Tangible actions to support these commitments**  
This Report includes asset level pathways including solar and wind to achieve the 2030 target and which are consistent with our operational strategy for those assets, and describes post 2030 pathways we are likely to follow dependent on the progress of developing technologies, asset expansions, divestments and acquisitions before 2030
- **Commitments that cover all emissions, including value chain – not purely operational emissions**  
We will partner with suppliers to reduce the carbon footprint across our value chain, as we continue to grow our understanding of our Scope 3 emissions

Measurement and reporting of ESS-related information will continue to change and improve across the industry. In particular, we look forward to the establishment of a universal, global climate change reporting standard following the announcement at the UN COP26 global summit of the International Sustainability Standards Board.

We consider that it will be beneficial for Northern Star, our shareholders, and other stakeholders for Northern Star to report against a single, universal framework or standard. At present the current situation is that multiple reporting frameworks are reported against which overlap to some extent, making it difficult for investors to make like for like comparisons to other companies.

**Real business benefits have been delivered, and real business risks have been mitigated as a result of the recent years' work in relation to ESS.**

Our aim is to have the same quality of reporting and controls around ESS data as we do for financial data. We are maturing our processes and scope in ESS data collection and integrity measures year on year, with a short-term objective of securing external assurance reports in relation to our sustainability reports. In this Report environmental accountants Greenbase provided limited verification processes on our sustainability metric data.

For FY22 and beyond, Northern Star has made the decision to revert to sustainability reporting as at 30 June (rather than reporting on a calendar year basis). The intent is to release a separate sustainability report at the same time the annual financial information is released, and to provide and update a significant amount of sustainability data on our website on an ongoing basis throughout the financial year. This will reduce the length of sustainability reports, remove the need to provide interim updates on sustainability issues in our annual reports, and most importantly, it will ensure that up-to-date ESG-related data will be available on the website year-round.

Northern Star continues to embrace the challenge to produce gold sustainably, at industry leading safety levels, with lower energy and water consumption and lower carbon emissions, whilst maintaining respectful and progressive relationships with communities, Employees, and our other stakeholders.

On behalf of the Board, thank you for reading this 2021 Sustainability Report.

Yours sincerely



**Mary Hackett**  
Chair of the Environmental,  
Social and Safety Committee

# A Message from our Managing Director

## Dear Employees, Shareholders and Stakeholders

I am proud to share this 2021 Sustainability Report with you.

2021 was a milestone year for Northern Star, implementing the merger with Saracen Mineral Holdings, undergoing a major re-organisation and operational integrations, achieving costs and production guidance against a backdrop of COVID-19 management, and continuing to achieve sector leading safety results.

The health, safety and wellbeing of our people and those in the communities in which we operate will always be our highest priority. How we do that in the pandemic evolves as data comes in and knowledge develops at a global, national, State and local level. We recognise the commitment of our dedicated workforce to adapt to this new environment, and special mention must be made of our Pogo team for maintaining continuity of production and achieving FY21 production guidance. We will continue to navigate in an effective way the complex risk environment which COVID-19 creates in all its forms.

The challenges of climate change also involve a balance of risk and strategy.

The UN COP26 summit in Glasgow highlighted the speed of change required to meet the Paris Agreement goal of keeping global warming below 2°C and closer to 1.5°C, and demonstrated that in many countries, business is ahead of government in responding to the climate change challenge.

Northern Star's strategic response to climate change is a solid roadmap which is centred around the efficient use of cleaner electricity sources, with an interim target to reduce our operational greenhouse gas emissions by 35% in absolute terms by 2030, from our FY20 baseline emissions. This Report explains the methods we will implement to achieve this, and outlines the opportunities and pathways post 2030 to achieve our net zero ambition by 2050.

We are committed, and we are taking specific actions in the near term, to switch to clean energy to reduce our emissions whilst at the same time delivering operational efficiencies.



ESG discussions at Carosue Dam Operations, Kalgoorlie

Northern Star recognises that sustainable competitive financial returns are only made possible by a focus on the long term, and through competent management of business risks which in the context of this Report, include water and waste management, Indigenous rights, ethics and governance, social licence to operate, safety, retention and attraction of personnel, environmental management and modern slavery prevention. We recognise that investors demand greater transparency on these topics, and the scope and depth of our data collection and disclosures is maturing in response. The materiality matrix in this Report illustrates what we consider are the ESG issues most relevant to Northern Star's sustainable business success, and we explain how we handle them.

We support the concept of shared value, a business strategy that is designed to address social issues profitably. One of the first steps taken by the reconstituted Northern Star Board in 2021 was to update Northern Star's Mission: To generate superior returns for our shareholders, while providing positive benefits for our stakeholders, through operational effectiveness, exploration and active portfolio management.

On behalf of the Board, thank you for taking the time to read this 2021 Sustainability Report.

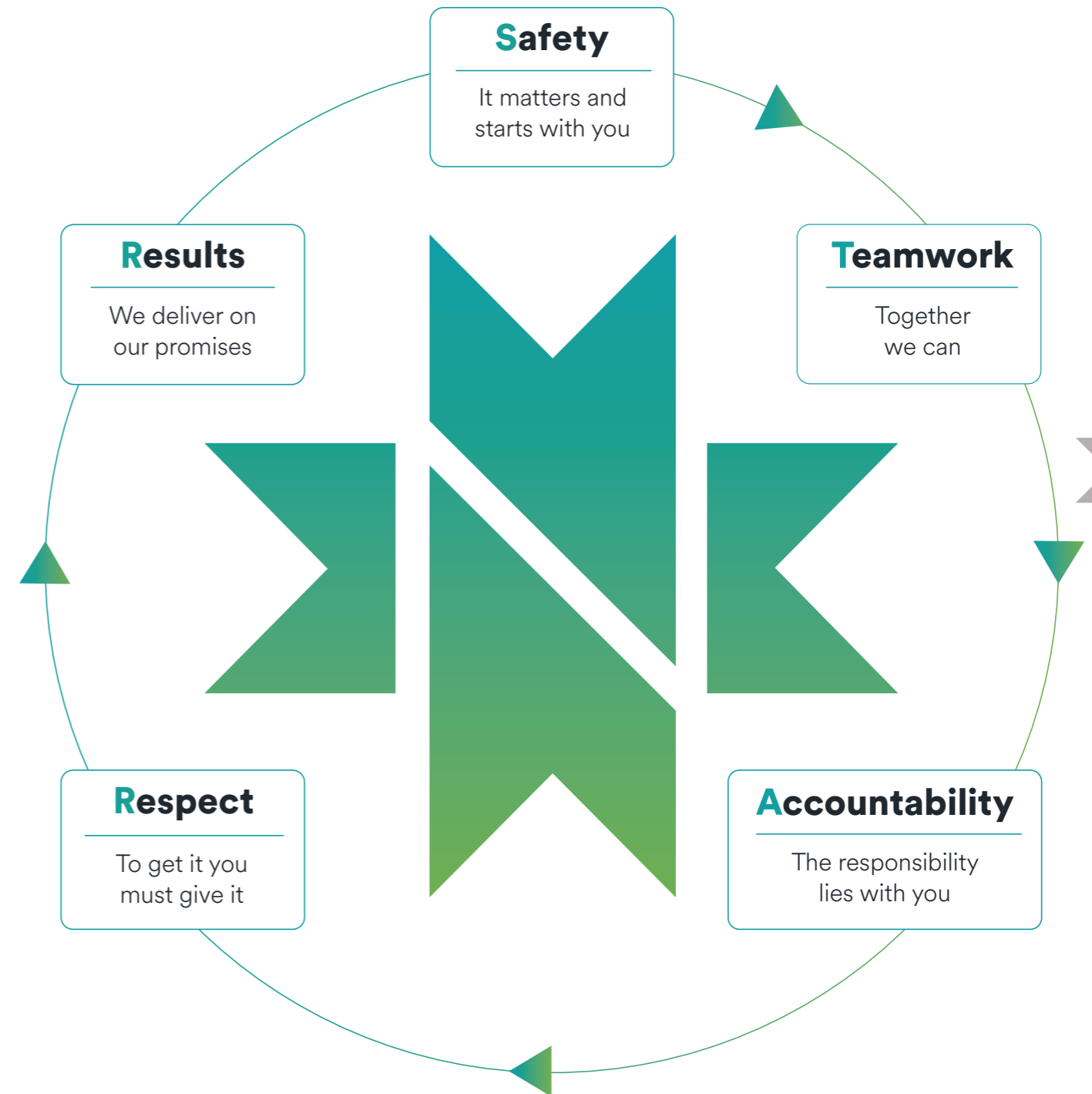
Yours sincerely



**Stuart Tonkin**  
Managing Director & CEO  
Northern Star Resources Limited

# STARR Core Values

Our Core Values are integral to the working lives of all our workers and operations.



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Jesse Reid, Geology Technician,  
Thunderbox Operations, Yandal



# Overview

Hemendra Jebaliya  
overlooking the KCGM  
processing plant

# Materiality & Disclosure

Northern Star is committed to strengthening disclosure of our sustainability performance and initiatives.

**W**e understand that stakeholder interest in our sustainability performance continues to grow each year, with particular focus on clear, honest disclosures and communicating goals for continued improvements.

To inform our sustainability reporting each year and ensure that we continue to strengthen our disclosures, we complete an assessment against key voluntary alignments which provide an understanding of our stakeholders' primary focus areas.

Northern Star has elected to voluntarily report against (or with reference to) several ESG frameworks to ensure transparency in our reporting processes, consistency and quality of data disclosures, relevance and timeliness of content, and to ensure we address the priorities of our stakeholders.

In this Report we demonstrate our voluntary alignment with the following:

**Figure 1** Voluntary Alignments



### Global Reporting Initiative (GRI) Standards

The GRI Standards enable an organisation to report on their impacts on people, the environment, and the economy in a standardised manner. The aim is to increase an organisation's transparency in reporting and demonstrate its contribution to organisational sustainability. Northern Star has prepared the reported information with reference to the GRI Standards: Core Option. GRI Index available on the Northern Star website.



### Sustainability Accounting Standards Board (SASB)

The SASB Standards are aimed at connecting businesses and investors on the financial impacts of sustainability. Northern Star uses the Mining and Metals Sustainability Accounting Standard, updated in December 2021 to guide its sustainability disclosures.



### Task Force on Climate-Related Financial Disclosures (TCFD)

The Financial Stability Board created the TCFD to improve and increase reporting of climate-related financial information. The reports produced satisfy stakeholders' requirements for clear, detailed, and quality financial information on the impacts of climate change including potential risks and opportunities. Northern Star has disclosed in alignment with TCFD recommendations since 2019.



### United Nations Sustainable Development Goals (UN SDGs)

The United Nations members developed 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries in partnership to achieve a more sustainable future. Northern Star has identified which of the UN SDGs align with each area of our business throughout this Report. A complete assessment of our alignment with the goals is provided on our website at <https://www.nsrld.com/sustainability>

A Company assessment was completed against the GRI, SASB and UN SDG alignment frameworks to identify sustainability issues, disclosure topics, and accounting metrics relevant to Northern Star. The GRI, SASB and UN SDG content index and additional environmental data tables are available on the Northern Star website.

In addition to our voluntary alignments, Northern Star also actively participates in the disclosures shown to the right.

Northern Star regularly considers and reviews future disclosure opportunities, including additional reporting frameworks and standards for Company alignment, ensuring that the priorities of our stakeholders are taken into account. In future reports we will explain our actions taken in response to ratings we have received, post merger.



### Reporting Period & Boundaries

This Sustainability Report provides information on Northern Star's sustainability performance across its operations during the period 1 January 2021 to 31 December 2021. Northern Star's assets included in this Report are:

**Figure 2** Corporate Structure



On 1 December 2021 Northern Star completed the acquisition of Newmont Corporation's Kalgoorlie power business, which includes a 50% interest in the 110MW Parkeston Power Station and associated infrastructure providing electricity to KCGM during CY2021.

Data for this asset is not disclosed in this Report as it would contribute less than one month's data. It

will be captured in future Annual and Sustainability reporting. In CY2022 electricity is predominantly sourced from the grid, which is increasingly supplied by renewable generation.

In setting the reporting boundary, we have considered impacts which result directly from the Group's operations, as well as from outside the organisation where material.

<sup>3</sup> Kundana and East Kundana assets were divested in August 2021. Performance data reported for these assets is for the period 1 January to 31 August 2021.



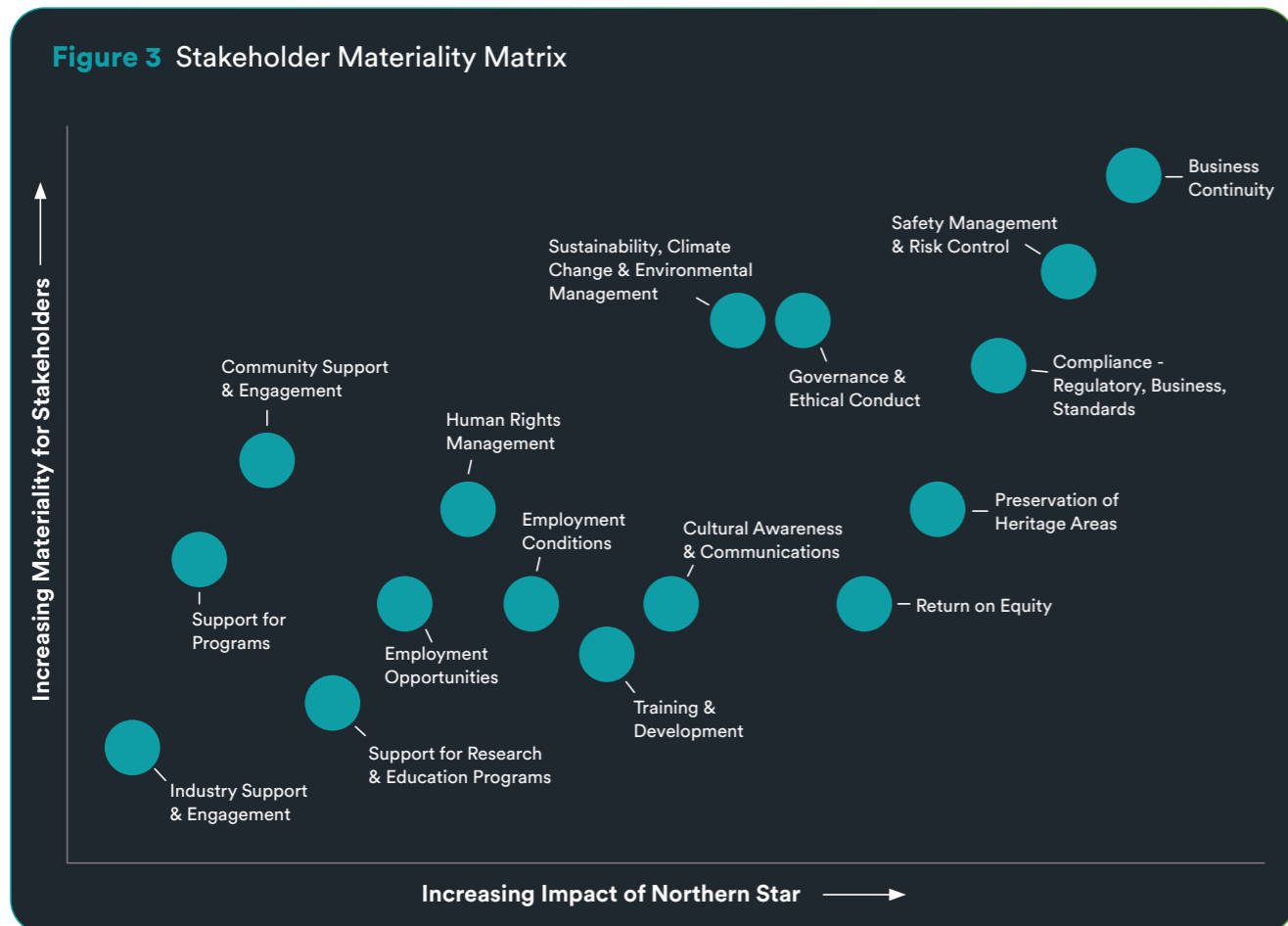
### Material Topics

In CY2021 Northern Star completed an inaugural materiality assessment to identify the Company's material topics for inclusion in this Report. These material topics are listed at Figure 4.

The materiality assessment incorporated consideration of impacts that are potentially material to our industry according to GRI and SASB; changing regulatory and socio-economic influences;

input from employee surveys and ESG engagement sessions; results from social impact assessments and community feedback, and commentary from anonymous investor interviews conducted by an independent third party. From this array of data primary focus areas were identified for each stakeholder group. These primary focus areas are summarised in our Stakeholder Materiality Matrix in Figure 3 below.

**Figure 3** Stakeholder Materiality Matrix



**Figure 4** Material Topics

Northern Star's top ten material issues as identified from our CY2021 materiality assessment are:

Environment	Social	Governance
Climate Change	Safety Management & Risk Control	Business Continuity
Environmental Management	Preservation of Heritage	Compliance
Biodiversity	Cultural Awareness & Communication	Governance & Ethical Conduct
Water Management		



Alisa Cardaci, Culture & Capability Manager, Perth

# Sustainability Metrics

Northern Star regularly monitors its sustainability performance using a suite of internal metrics.

In CY2021 we increased the number of metrics we use to track our performance to improve the transparency of our disclosures. These metrics are included at Table 1 overleaf.

Where appropriate, Northern Star has included intensity data per ounce of gold sold<sup>4</sup> to enable comparisons, identify trends in the data over time and realise the true impact on our data as asset acquisitions, mergers and divestments are made.



Nursery specimens endemic to the Kalgoorlie Region.

4. Gold sold is used because it is objectively verifiable.

5. Not assurance checked 6. In relation to Australian procurement contracts, as defined in the Government of Western Australia Aboriginal Procurement Policy effective 1 July 2021. '-' denotes verified data is not available.

Table 1 Sustainability Performance Metrics<sup>5</sup>

Category	Material Risk	Sustainability Metric	CY2021	CY2020
Environment	Climate Change	Achieving Net Zero Emissions by 2050		
		Total Scope 1 & 2 greenhouse gas (GHG) emissions	1,169kt CO <sub>2</sub> -e	693kt CO <sub>2</sub> -e
		Scope 1 & 2 GHG emissions intensity	0.76t CO <sub>2</sub> -e/oz	0.71t CO <sub>2</sub> -e/oz
		Scope 3 GHG emissions	204kt CO <sub>2</sub> -e	-
		Electricity consumed from renewable sources	29,138GJ	-
	2030 Emissions reduction target	35% on FY20 baseline	-	
	Biodiversity & Land Management	Responsible Environmental Stewardship		
		Total regulator fines for environmental	\$0	\$0
		Rehabilitation completed	199ha	>61ha
	Water Management	Responsible Environmental Stewardship		
		Total volume of fresh and other water	48,442ML	34,249ML
		Total volume of water recycled	18,422ML	-
		Total volume of water discharges	29,306ML	25,139ML
		Net volume of water consumed	19,132ML	9,110ML
		Net water consumption efficiency	-	34.87ML/oz
Social	Social Licence to Operate	Respecting Communities & Traditional Owners		
		Total grievances and complaints received	1	-
		Proportion of grievances and complaints resolved	50%	-
	Stakeholder Expectations	Managing community expectations and demonstrating contribution		
		Total spend on community investment	\$3.5M	\$5M
		Procurement spend with local suppliers:		
		Western Australia	76%	-
		Other Australia	12%	-
		Alaska	5%	-
		Other USA	6%	-
	Global	1%	-	
	Residential workforce Kalgoorlie (exc Carosue Dam)	91%	-	
	Occupational Health & Safety & Security	Worker Safety & Health		
		Lost Time Injury Frequency Rate	0.44	1.13
		Total Recordable Injury Frequency Rate	1.62	4.71
	Human & Labour Rights	Respecting Human Rights		
		Suppliers audited for human rights issues	3	-
		Employee completion of modern slavery awareness training	77	-
Employee completion of cultural awareness training		413	-	
Talent management, skills development, and employee relationships				
Parental leave participation		46	-	
Fostering Diversity & Inclusion				
Indigenous employment		-	-	
Procurement spend with Indigenous Businesses <sup>6</sup>	-	-		
Female employment	23%	21.6%		
Ethical Conduct	Number of Whistleblower complaints received	1	1	
	Number of Whistleblower complaints investigated	1	1	
Governance	Economic Performance	Respecting human rights		
		Dividends Paid	\$218M	\$200M
		Gold sold	1,537koz	982koz
		Total revenue	\$3,457M	-
Royalties and taxes paid to governments	\$217M	\$113M		
Operating Licence Conditions	Integrated closure planning			
Operations with current approved closure plans	100%	-		

# Our Business

A global-scale Australian gold producer with underground and open pit mines.

**N**orthern Star is an Australian gold producer with projects located in Australia and North America, both highly prospective and low sovereign risk regions. The Company has been

able to significantly grow production, earnings and cash flows, and Resources and Reserves through operational excellence and active investment in exploration.

## Scale of organisation

**3,100**

Employees

**\$3,457<sup>M</sup>**

Total revenue

**38.7<sup>Moz</sup>**

Measured & Indicated Resources

**21.0<sup>Moz</sup>**

Group Reserves

**\$218<sup>M</sup>**

Total dividends paid

**\$824<sup>M</sup>**

Cash Earnings<sup>7</sup>

Figure 5 Lifecycle of a mine

### Mine Lifecycle



**1**

**Exploration**

Gathering data about potential economic mineral deposits and acquiring the rights to mine those deposits.

**2**

**Development**

Geological, technical and environmental analyses, plus community input. Financing and government-approved closure plan must be secured.

**3**

**Mining**

Mine and associated supporting infrastructure developed and operational after investments, permits and approvals are obtained. Rehabilitation occurs progressively.

**4**

**Processing**

Production of gold, boosting employment and local economies. Exploration continues, to replace depleted ore reserves and mineral resources.

**5**

**Mine Closure**

Mining operations are decommissioned responsibly and the land is returned to a natural or economically usable state.

7. Cash Earnings is Underlying EBITDA less net interest, tax and sustaining capital.



Gold pour at Carosue Dam Operations, Kalgoorlie.

# Exploration, Research & Future Development

**N**orthern Star's Mission is to generate superior returns for our shareholders, while providing positive benefits for our stakeholders, through operational effectiveness, exploration and active portfolio management.

To achieve this Mission it is crucial we continue our efforts to explore, research and develop. The cornerstone of Northern Star's strong outlook is our sustained exploration investment which has generated continued organic reserve growth. Expenditure allocation on exploration is proportioned across projects to ensure a strong pipeline of growth and sustainable projects.

Opportunities for growth and development are carefully assessed by one of our Board sub-committees, the Exploration and Growth Committee, whose mandate is to assess opportunities and provide a forum for technical based scrutiny of management decisions on capital allocation for organic and inorganic growth initiatives, and to monitor performance on areas of risk mitigation and future focus through strategic alignment.

Northern Star continues to find ways to conduct our exploration activities in ways that reduce or mitigate environmental impacts and contribute to the long-term sustainability of our business and industry.

For example in CY2021 Northern Star improved geological knowledge of our assets without needing to cause ground disturbances by:

- Reprocessing seismic survey information from Carosue Dam and Jundee Operations to better understand the scope of this technology for identifying underlying structures.
- Utilising dronemag surveys for geophysical and magnetic surveys with no need to create ground disturbances and therefore avoid impacts on heritage sites, pastoral livestock and native flora and fauna.
- Conducting gravity surveys using small teams of technicians working on foot through tenement areas of interest.
- Continuing to use helicopter supported drill rigs in Alaska so that roads are not required to be cleared to establish drill pads in remote areas.

## Highlight: Investigating more sustainable sample assaying

Our Jundee and Pogo exploration teams are currently participating in a research study to determine if gold assays can be undertaken by photon assay rather than the current method of fire assay. Northern Star can produce up to 2.5 million geological samples each year. The ability for gold assays to be completed using the photon method would result in an immediate reduction in energy consumed during the testing, eliminate the use of hazardous chemicals in the process and reduce the amount of dust and other emissions created during the pulverising required for fire assays.

Potential long-term benefits include retention of the sample to allow further sampling, reduction in occupational exposure for laboratory technicians, and the potential for sampling on site, thereby reducing emissions associated with transporting the samples to offsite laboratories.



*Michelle Forgette, Project Geologist inspecting samples at Jundee.*



*Ross Christie, Mine Geologist, Carosue Dam Operations, Kalgoorlie*

# Where We Operate

Our portfolio of high-quality, high-margin mining operations are located in world class jurisdictions.

Figure 6 North American Operations

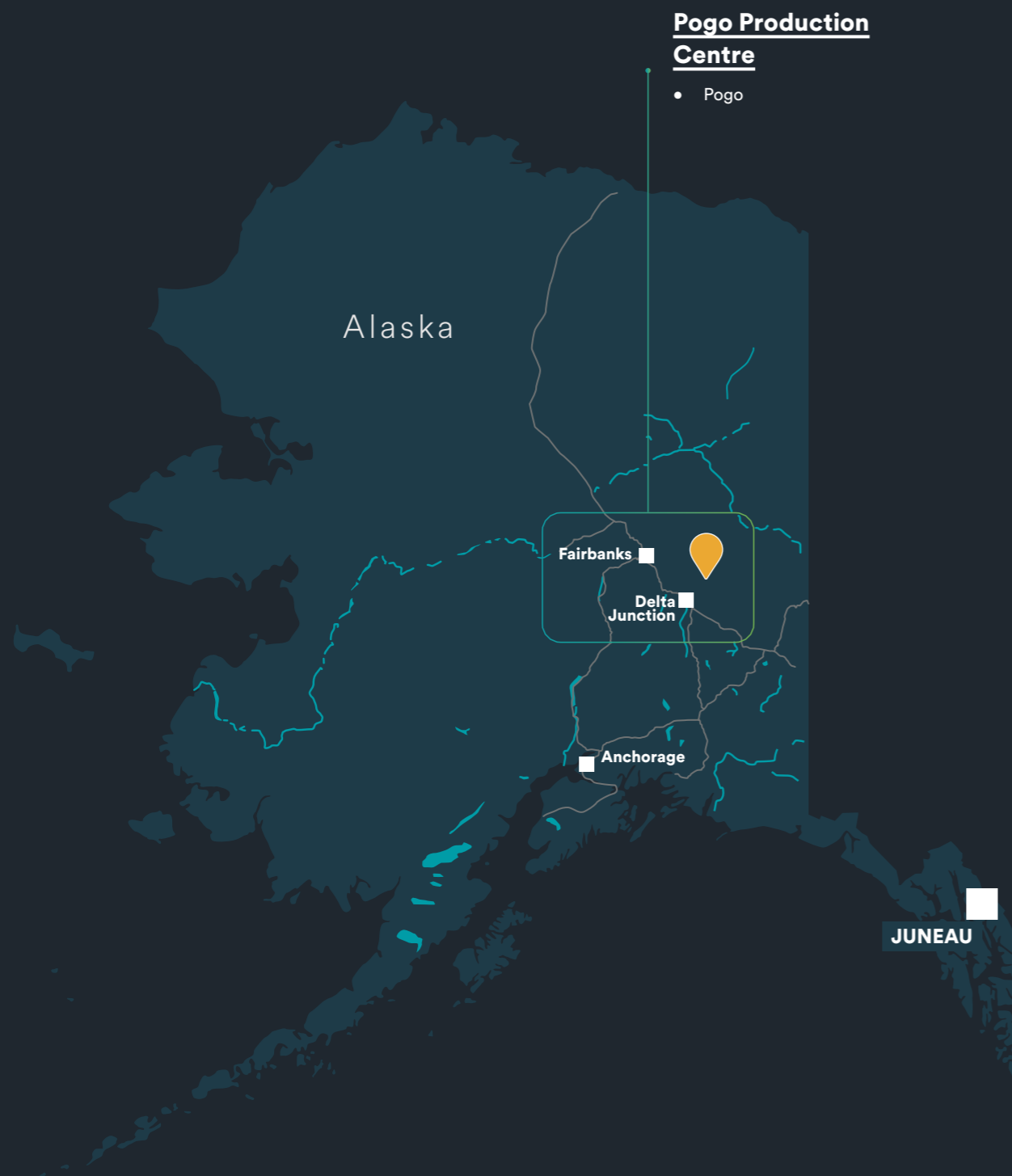
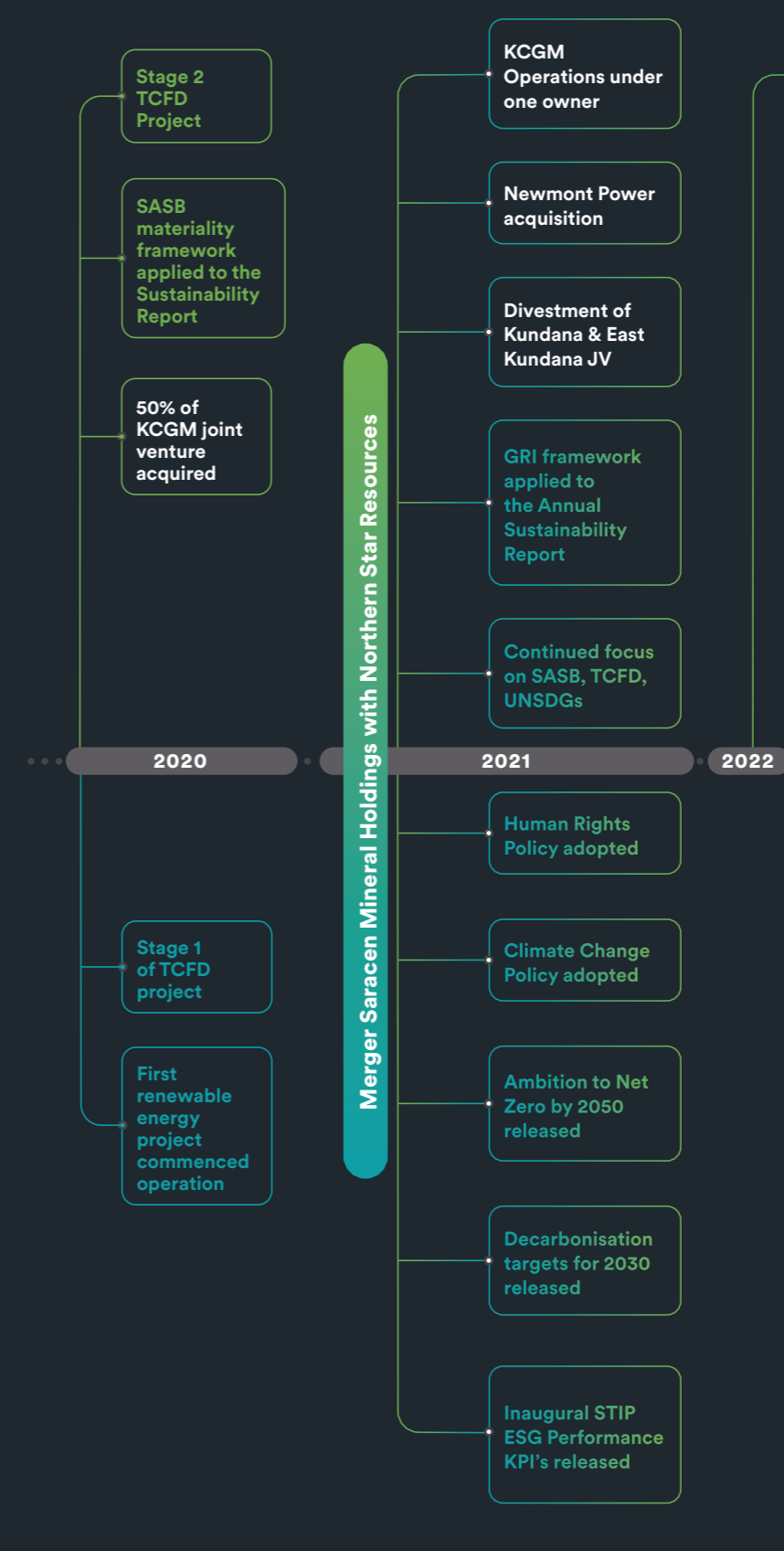
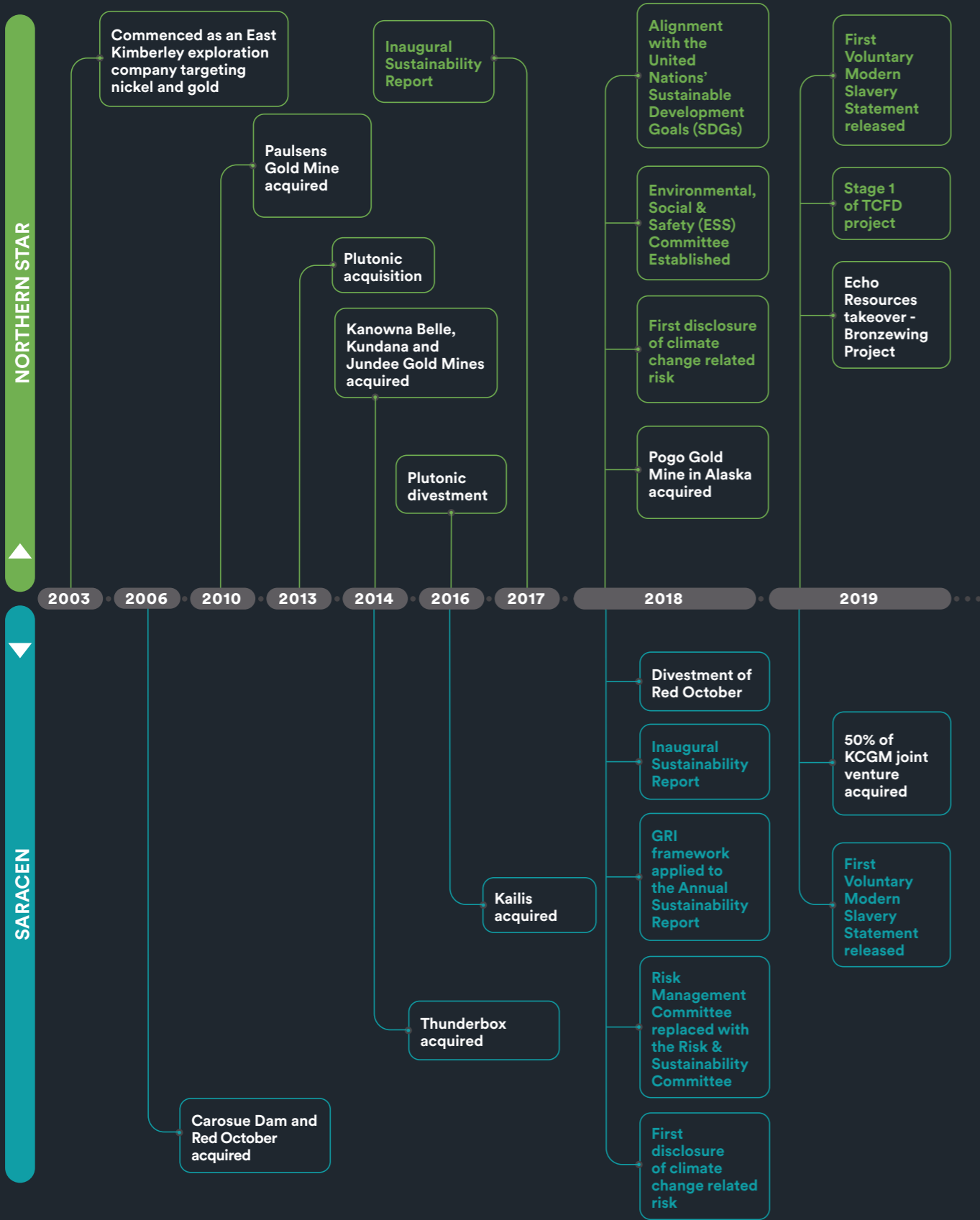


Figure 7 Australian Operations



8. Kundana and East Kundana assets were divested in August 2021, see ASX Announcement: <https://www.nsrld.com/investor-and-media/asx-announcements/2021/august/kundana-asset-sale-completes>

# Northern Star's Journey



**Planned for 2022**

Northern Star is committed to ongoing delivery of responsible environmental, social and business practices, and increasing engagement and transparency in our processes.

**In 2022 we will:**

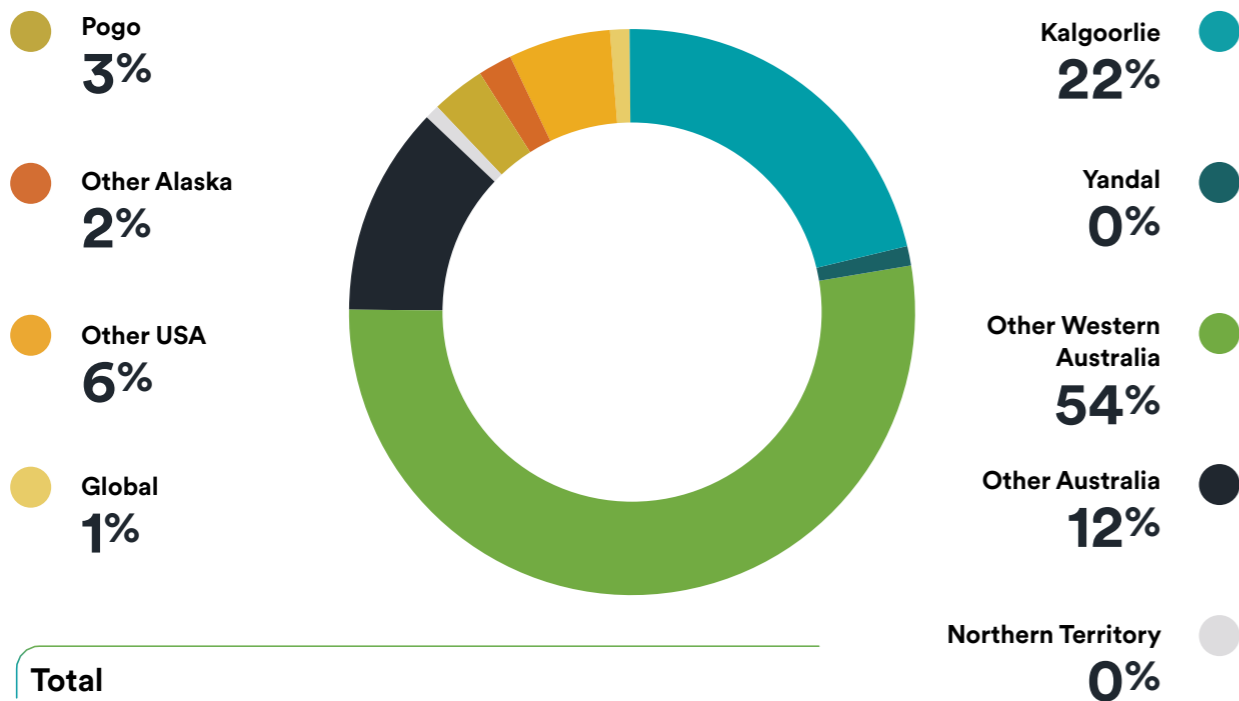
- continue to consolidate and implement climate change action plans, including decarbonisation & resilience
- reinforce the strong partnerships we have with our stakeholders
- continue to invest in our communities and regions through local supply and donations and sponsorships
- continued TCFD, GRI, SASB Standards alignment
- increase transparency in our reporting and disclosures
- continue to invest in our workforce through training, health, wellness, safety and performance opportunities
- ongoing participation in industry, regulatory and regional sustainability programs on environment, social responsibility and governance strategy actions

# Supply Chain

Northern Star's operations are supported by a centralised procurement function coordinating a global supply chain of 2,807 suppliers to ensure business continuity in both Australia and North America.

We believe our supply chain is fundamental to our goal of sustainable development and prioritise the use of local suppliers where possible, while ensuring our risk is mitigated through strong regional relationships and ongoing analysis of our own procurement and sustainability goals.

Figure 9 Procurement Spend by Location of Supplier



Total  
**\$2.537B**

Northern Star aims to partner with suppliers who contribute to our goals of sustainable development and the protection of human rights. We are implementing systems to further assist in assessing the appropriateness of suppliers during prequalification and tender phases.

We are also probing supplier cyber security maturity to help assess our cyber security risks via our supply chain. Our Modern Slavery section on page 92 provides detail on supplier screening, audits and risk management.

**Our supply chain is fundamental to achieving sustainable development and we prioritise the use of local suppliers where possible.**

Galabinga Henderson, Group Manager Procurement

Figure 10 A sample of Northern Star's global supply chain

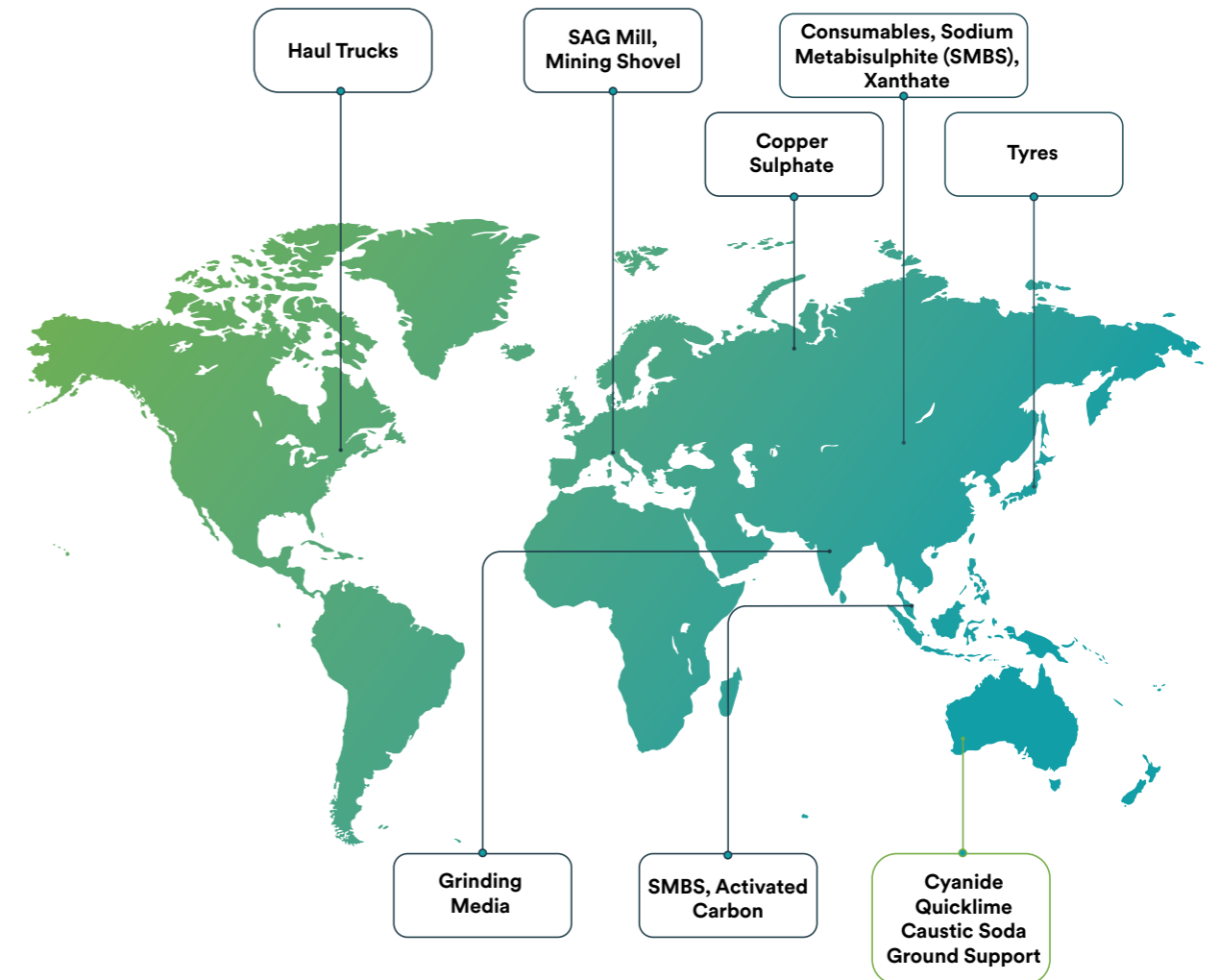
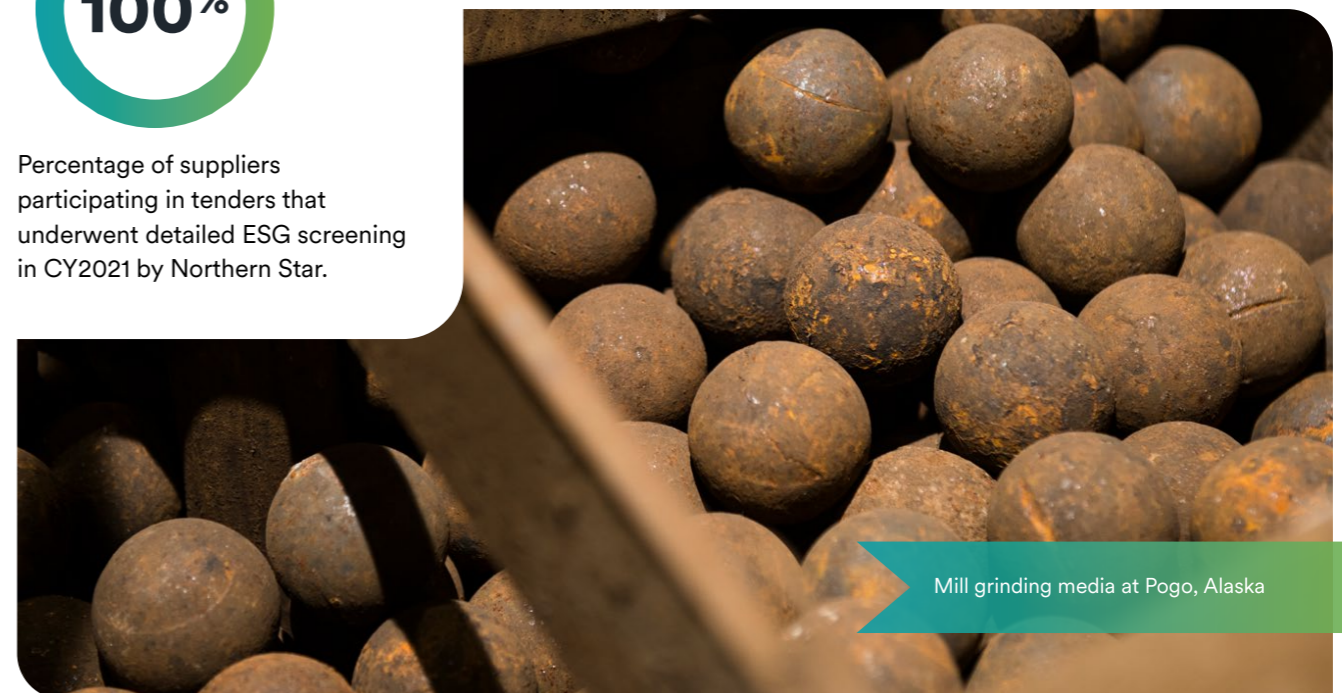


Figure 11 Supply Chain Tender Screening



Percentage of suppliers participating in tenders that underwent detailed ESG screening in CY2021 by Northern Star.



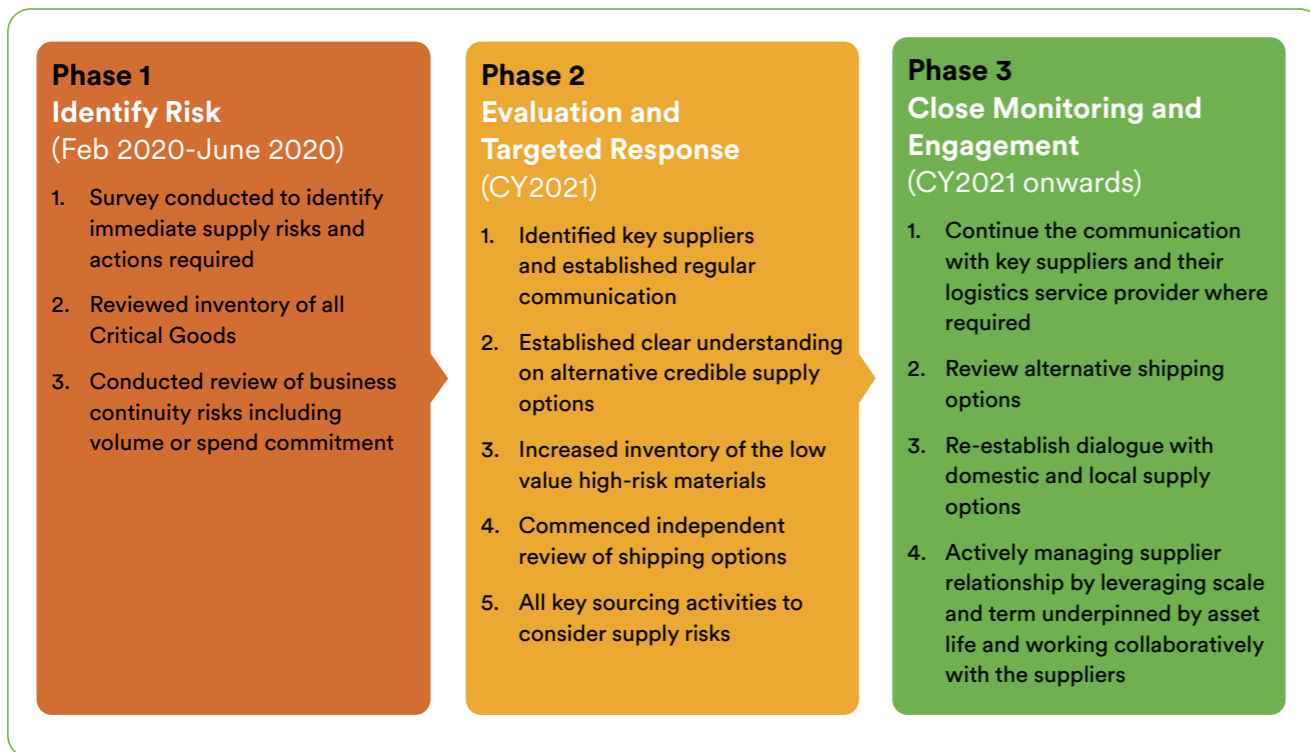
Mill grinding media at Pogo, Alaska

## Mitigating Supply Chain Disruption - COVID-19

During CY2021 our supply chain experienced some impact due to the COVID-19 pandemic. We developed and deployed a multi-phased risk mitigation plan to address the increased risk to

our supply chains. This is summarised in Figure 12 below. Although we have not experienced any major disruptions to our operations as a result of goods and material supply issues, we have been required to manage increasing lead times, increased costs, and increased competition for resources.

Figure 12 Supply Chain Risk Mitigation Plan



Our approach to managing our supply chain during the COVID-19 pandemic is focused on three key areas:

### Actions driven by facts and knowledge

- Mitigating risk based on verified facts and not reactive response
- Considering the impact of our actions to industry and peers – there was no “panic buying” throughout the last 18 months and no disruption to operations
- Establish clear understanding on alternative supply options and solutions

### Partner with suppliers with demonstrated capability

- Partner with suppliers that have robust supply chains to ensure continuous supply
- Eliminate risks associated with shipping by sourcing goods and materials from domestic suppliers where possible i.e. Quicklime and Cyanide
- Utilise multiple supply options for high-risk materials – e.g. Activated Carbon
- Maintain good relationships and regular communication with suppliers

### Balance supply risk with cost

- Review inventory levels and adjust when required
- Ensure logistical costs are transparent on key commodities
- Engage with shipping companies directly and review alternative shipping options if required
- Review and compare costs of key commodities on an ongoing basis

## Highlight: Local sourcing of lime for Australian operations

Lime is one of the largest bulk processing materials used by Northern Star in the gold processing circuit. Annually we source approximately 43,000MT of lime from Southeast Asia that is shipped to Western Australia via sea freight.



In CY2021 we investigated the ability to source lime from an alternate supplier, to better align with our local procurement preferences and mitigate risk in our supply chain. We have successfully engaged a local Western Australian supplier to provide lime to our Australian operations.

Local sourcing not only provides cost benefits and security of supply to the business but more broadly aligns with our business objectives to support businesses within our local communities, and reduce our supply chain carbon footprint. Utilising a local supplier of lime eliminates up to 2,150 sea containers

being transported annually between Southeast Asia and Australia for the purposes of our business, reducing greenhouse gas emissions being generated from sea freight.

**Using local lime suppliers reduces our overall GHG emission footprint by eliminating up to 2,150 sea containers being transported between Southeast Asia and Australia.**

## Highlight: State of Alaska public health assistance



During the initial phases of the COVID-19 response in the United States, the State of Alaska identified a shortfall in personal protective equipment (PPE) for managing the risk to its health care workers. Northern Star was able to leverage its procurement

and logistics expertise to fly 100,000 N95 masks, 400,000 ear loop disposable masks and 12,425 gowns to assist the State of Alaska public health challenges.

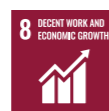




# Safety Performance Trends

Alyce McBroom-Cresp,  
Adrian Hooks and Mick  
Alexander, KCGM Operations  
Surveying Team, Kalgoorile.

# Our Safety Performance



“A clear understanding of the Company’s operational risks allows us to ensure that our Safety Management System is fit for purpose.”

Melissa Collins, Group Manager – Health & Safety

## Safety Snapshot

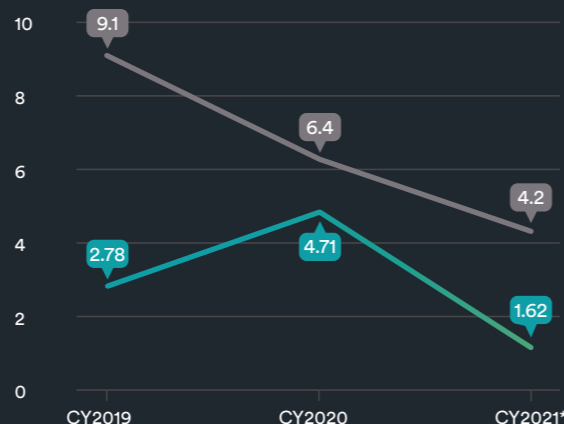
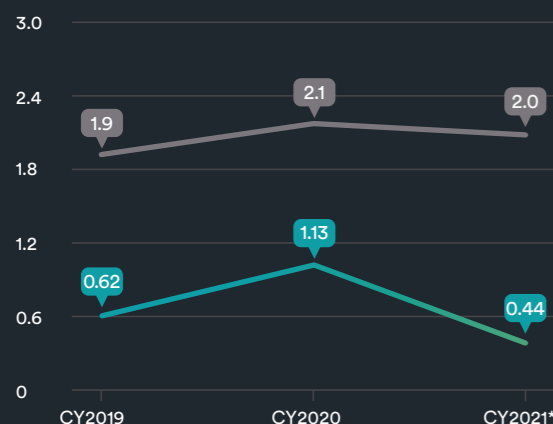
Key Northern Star Industry average

CY2021  
**LTIFR**

**0.44**

CY2021  
**TRIFR<sup>9</sup>**

**1.62**



\* Total number of hours worked in CY2021: 13,845,675 (Jan – Dec)  
9. Number of lost time injuries per million hours worked. Calculated on a 12-month rolling average  
CY2021 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2019-20 Metalliferous total

CY2020 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2018-19 Metalliferous total  
CY2019 Industry means the DMIRS Safety Performance in the Western Australian Mineral Industry – Accident and Injury Statistics 2017-18 Underground Metalliferous

Improvement is evident, notwithstanding a significant increase in activities and people on our sites.

There were no fatalities at Northern Star’s operations during CY2021.

## OHS Strategic Plan

In previous reports we have disclosed progress against our 3 Year Plan that was established in CY2018. Having completed the 3 Year Plan

in CY2021, we have reviewed and revised our initiatives and consolidated them into the new OHS Strategic Plan depicted in Table 2 below:

Table 2 OHS Strategic Plan 2022 - 2025

Category	Initiatives In Progress
Leadership	Review the effectiveness of lead indicator programs across Northern Star. Increase the quality of the key tools used Company wide.
	Establish a foundation for development of safety leadership. Improve overall effectiveness of safety leaders across the Company.
Innovation & Training	Benchmark Northern Star against industry leading technology. Improved hazard management of hazardous operations such as working in confined spaces.
	Enhance training capabilities via platforms such as virtual reality. Increase learning outcomes for all employees and contractors across Northern Star.
Health & Wellbeing	Establish a clear link across operational planning functions and support services. Decrease the number of health/hygiene exceedances reported across all sites.
	Review equipment - people interaction across the Company. Decrease the frequency of manual handling tasks for all employees.
	Establish industry leading mental health initiatives. Increase leadership, proactive management and workforce capability.
Risk Management	Finalising transition of Northern Star’s Safety Management System (SMS) across all sites (post-merger). Improve from a safety perspective, contractor management across the Company.
	Embed Critical Risk Standards across the Company.
OHS System	Merger of current systems and implementation of fit for purpose safety systems across the post-merger Group. Facilitation of two-tier training across the Company for mental health, hazard identification, risk management and lead indicators.
	Further enhance the OHS communication platform with applicable information including onsite specialist classes, awareness training and guest presentations.
	Harmonisation and migration of KCGM and Saracen safety operational and corporate documents post-merger into one Group document management platform.

## Critical Risk Standards

The safety of our employees and contractors is our first priority always. The Northern Star risk registers, both strategic and operational, are updated regularly utilising a systematic risk management approach to identify the Company's material risks. For high rated health and safety critical risks, the Company develops standards with specified performance requirements to eliminate, prevent, or mitigate the risks.

Following the merger with Saracen in CY2021, a critical risk analysis was conducted with ten Critical Risk Standards identified by Northern Star to achieve standardisation and alignment across all sites. These Critical Risk Standards relate to:

- Fall of Ground
- Hazardous Energy
- Working at Height
- Confined Space
- Mobile Plant, Equipment and Vehicles
- Lifting Operations
- Hazardous Substances
- Explosives
- Fire
- Hazardous Workplace Exposures

## Management Systems

The Northern Star Safety Management System (SMS) is a roadmap for all personnel who undertake work for Northern Star by providing a set of Company wide policies, procedures and processes that describe the mandatory requirements for effective health and safety practices at Northern Star.

Comprising 14 elements, the SMS sets out the key features and application of the health and safety management process through which Northern Star establishes and assesses its commitment, objectives, plans and procedures for compliance with legislation and regulations.

Additionally, the SMS provides the framework for the identifying, reporting and rectifying hazards using Northern Star's HAZID (Hazard ID), STARR reporting initiatives and the INX InControl reporting database. By using this SMS framework, hazards and their rectification are documented to more effectively reduce risks to our employees. The SMS also provides auditable criteria, against which Northern Star's health and safety performance, risk reduction and continuous improvement can be measured.

The Critical Risk Standards are regularly reviewed internally and by subject matter experts, to ensure they meet regulatory requirements and align with industry best practices.

These Critical Risk Standards outline critical controls for each critical risk area necessary to keep our workforce safe. These controls are captured in checklists and used as guidance during in-field observations conducted by Northern Star management and supervisors to verify effectiveness and compliance by the workforce.

Compliance with these Critical Risk Standards is regularly audited and reported to identify opportunities for improvement across the Company.

**For high rated health and safety critical risks, the Company develops standards with specified performance requirements to eliminate, prevent, or mitigate the risks.**

The Northern Star SMS operates within our overarching corporate governance documents including the Board Charter, STARR Core Values, Code of Conduct, Safety and Health Policy, Risk Management Policy and operational Cardinal Rules.

**Figure 13** Leading Indicators

**96%**

**Percentage of hazards rectified  
(1,600 of 1,670 hazards identified)**

**10,858**

**Number of Active Field Leadership Interactions**

## Emergency Management

As a result of the merger with Saracen, a focus for CY2021 was aligning our emergency management system and ensuring it was being applied across all Northern Star operations. We re-engaged specialist crisis management consultants to run a series of industry standard training sessions, providing a practical understanding of our emergency management system and site capability in the event of real time incidents.

These drills are invaluable to train and evaluate the preparedness of each site and the corporate office for future events which trigger crisis management procedures.

Although rarely deployed, Northern Star's emergency management system equips employees to systematically respond to and control significant incidents as they occur, responding to any potential threats on lives or business continuity. Northern Star conducts annual emergency management training as an integral part of strengthening our response capabilities.



Kalgoorlie Operations Emergency Response Team (ERT) applying first aid in a training course.

## Highlight: CY2021 Crisis Management Training Scenario

None of Northern Star's Australian sites experienced a positive COVID-19 test during CY2021.

In line with current climate and industry probabilities, this year's training focused on responding to a COVID-19 or other pandemic-based event onsite. When compared to our traditional training exercises that focus on "mining based" events, the COVID-19 pandemic scenario was an abnormal incident requiring additional levels of problem solving. These scenarios provide our site General Managers with real time examples of what the required response would look like to respond to a COVID-19 or similar outbreak and return to normal operations in a safe and timely manner.

The training scenarios were well received across all operations and enabled opportunity for standardisation of processes and documentation across the Company. This training also provided invaluable insight for the OHS team and site management teams regarding emergency response capabilities, including competency levels and response times and a clear indication of where future efforts should be focused on for continual improvements.



ERT members conducting an underground safety drill.

Pogo has been successfully managing positive COVID-19 cases on site for the past 2 years.

## Emergency Response

In conjunction with the Northern Star's emergency management system, our emergency response teams play a critical role in managing significant events and alleviating threats to life, the environment and business continuity. As such, our emergency response departments across the Company are provided with ongoing support from the corporate OHS team to ensure effective competency is maintained across the business.

Work in CY2021 has focused on improving lines of communication between the emergency response leads at each of Northern Star's operations, assisting to ensure standardisation of processes and documentation, as well as promoting cross-site training opportunities and alignment of assets, including service agreements with contractors and suppliers. In consultation with external service providers, each year Northern Star reviews the emergency response training package and requirements to ensure our emergency response teams are receiving adequate and up to date training regularly, to strengthen our response capabilities.

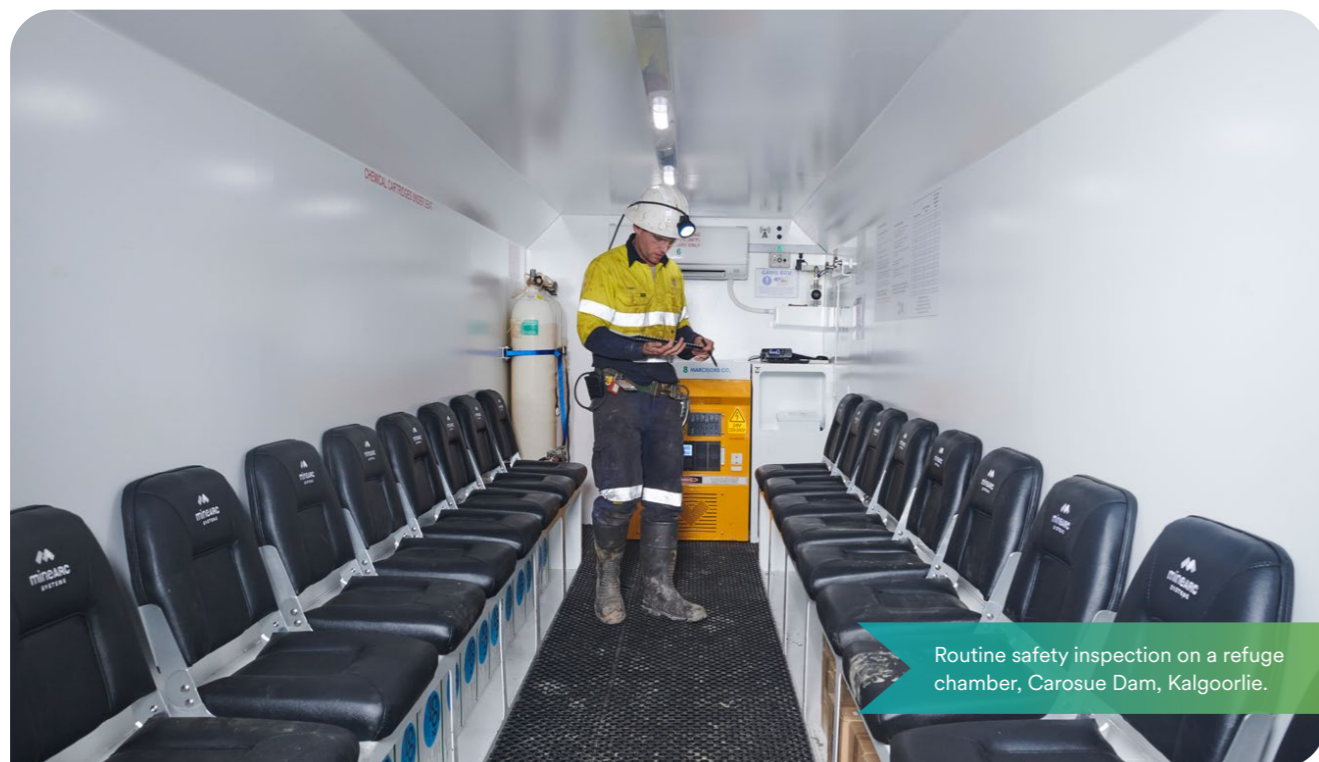
The 2021 State inter-company and inter-site emergency response competitions took place in November and December. Northern Star's emergency response teams from KCGM and Kalgoorlie operations represented the Company at the underground competition in November and the Jundee emergency response team represented the Company at the Mining Emergency Response Competition in December. These competitions

provide the State mining industry's emergency response teams with realistic scenarios to test the skills they have developed in training, receive feedback from experienced competition facilitators in each emergency response discipline, and identify opportunities for improvement in capabilities and skillset.

Our emergency response teams who competed achieved great results, which is a credit to the efforts of the site management teams, OHS teams, contractors, and members for their dedication, but also demonstrates the effectiveness of the emergency response training programme and emphasises the key role it plays in supporting Northern Star's operations.

Northern Star was a platinum sponsor of the Mining Emergency Response Competition, and intends to continue this level of support in future years.

**Work has focused on improving lines of communication between the emergency response leads at each of Northern Star's operations.**



Routine safety inspection on a refuge chamber, Carosue Dam, Kalgoorlie.

## Health and Wellness

We understand that the health and wellbeing of our employees extends beyond the workplace, and we recognise that an integrated approach is necessary to ensure both their physical and mental health.

Northern Star's integrated approach offers a practical structure to address the needs of our personnel on an individual basis. Operating in the current COVID-19 climate, the mental health and resilience of our workforce remains a priority. In addition to the support offered by our Employee Assistance Programs, in CY2021 we have provided dedicated resources across our sites to support and educate our teams on health and wellbeing. At each of our operations, employees and contractors are also offered opportunities and are encouraged to engage in social activities and services.

This integrated approach increases engagement and the sense of community and connectedness our employees and contractor feel whilst at work, with the overall goal of ensuring that a safe and healthy work environment is provided to all our employees, contractors and those visiting our operations.

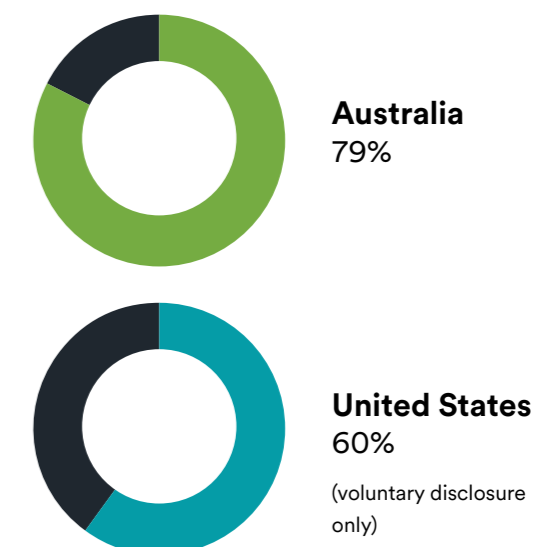
As part of ensuring the physical health of our employees, a focus in CY2021 has been minimising the risk of exposure to COVID-19 at all Northern Star sites.

In Australia our COVID-19 Vaccination Policy reflects Western Australian Government directives, and requires generally that all Northern Star employees, contractors and visitors are double vaccinated prior to accessing our sites, including our Corporate office, in order to reduce the health risks for our

workers. Triple vaccination is required within four months of the second dose.

Whilst not mandatory in the USA we strongly encourage all personnel to be vaccinated to protect our workers against severe illness and death from COVID-19, and reduce the number of hospitalisations in society in general. The current vaccine rates are shown in the figure below:

**Figure 14** COVID-19 vaccine (double dose) uptake among our employees at 31 December 2021.<sup>10</sup>



Our Fitness for Work program incorporates COVID-19 screening, when this risk mitigation is deemed appropriate from time to time prior to site entry.

## Occupational Hygiene

To reduce and manage hygiene-based risks, Northern Star established a quarterly monitoring program, with a dedicated team, who measure and report on potential hazardous workplace exposures. Each year the monitoring program schedule is revisited and adjusted to match the outcomes and priorities of the annual risk-based review of workplace exposure standards and regulatory requirements for measuring and monitoring.

Workplace exposure monitoring assists us to identify and reduce hygiene-based risks on our sites including, but not limited to:

- airborne contaminants (silica);
- biological exposures (arsenic, mercury);

- noise (personal and workplace); and
- vibration (whole body and hand/arm).

Outcomes of the monitoring program are incorporated into the annual risk register, providing sites with risk and exposure reduction strategies and plans for implementation on site.

In CY2021 the monitoring program team conducted hearing and spirometry monitoring of employees and contractors across the Kalgoorlie region with a view to minimising future injury. This monitoring program is in addition to the blanket screening for Fitness for Work undertaken across all Northern Star sites.

10. Northern Star continues to track our vaccine rates for double and third doses, and is seeing steady increases in the number of employees with up-to-date vaccinations in Australia, in line with ATAGI definitions



ERT member Ryan Johnston providing first aid during a training course, Kalgoorlie.

## Safety Training & Compliance Systems

Our focus in CY2021 has been the post-merger harmonisation and alignment of our Group training and compliance systems, with our primary focus on Northern Star's SMS. A review of our current practices, processes, and procedures was completed, with the aim to consolidate legacy documents along with many years of knowledge and experience into a new best practice single source. This review resulted in improved visibility, accessibility and user responsiveness of our safety and training systems.

We will continue to focus on standardisation of our training programmes across operations to continuously improve the onboarding process and provide a more individualised and immersive experience specific to each new employee. We have trialled a shift from traditional based face-to-face learning to a virtual platform.

An example is the use of a virtual reality headset to simulate and explain the underground mining environment and daily activities, such as tag board procedures, location and use of emergency equipment such as refuge chambers and self-rescuers.

As a result we intend to provide a comprehensive online curriculum combined with area specific on-the-ground training to provide a high-impact learning experience for new employees.

For the current workforce, focus will be placed on providing role challenges and career progression learning opportunities based on the individual's interests, development needs, skills requirements, and career aspirations. Through our partnership with Kalgoorlie Central TAFE we will ensure our training in Australia is formalised and aligned. Similar steps will be taken at Pogo.

## Highlight: Safety Leadership

Through significant incident review and commentary from the senior leadership team Company wide, safety leadership has been identified as a pivotal characteristic to be displayed by our supervisors, "leading" our people and operating with the STARR Core Values at the forefront of every task we approach.

To further embed the STARR Core Values and how leadership has a direct impact on culture and safety, we have developed a Safety Leadership Program for supervisors who are new to Northern Star (with existing supervisors also participating). Training in this Program will commence in February 2022.

By creating environments where our people proactively question the safe systems of work to ensure adequacy, we can increase our ability to identify potential hazards in our processes before incident timelines begin. In leading the greater work groups to understand "why" processes are followed to ensure safe systems of work, our leaders can provide our people additional scope and guidance to maintain their own safety, and the safety of the people around them.

This Program will focus on providing our leaders with the necessary knowledge to understand the expectations of the Board and management in relation to safety leadership, why safe systems of work are in place, and how to lead by example to keep our people safe.

Topics covered in the Safety Leadership Program



will include:

- Definition of Safety Leadership.
- Underpinning legal principles and requirements in relation to safety at work.
- Expectations of leaders - Code of Conduct and alignment with STARR Core Values.
- Effective communication and the association of emotional intelligence and mindfulness in relation to decision making.
- Responsibility of keeping our people safe – promoting and utilising proactive measures to assist our people performing sufficiently.
- Review of and understanding the "Why" our safety tools exist and the importance of questioning what we do.

We look forward to the implementation of this program and the positive influence it will have on our operations as we strive for incident free workplaces.



# Climate Change

Snowfall on the Goodpaster  
River adjacent to Pogo, Alaska.

# Climate Change



“Managing the risks posed to our whole business by climate change is a multi-disciplinary project, requiring collaboration across the business to ensure we are building internal resilience and playing our part in achieving a net zero future”

**Steven McClare, Chief Technical Officer**

Northern Star’s continued alignment with the Task Force on Climate-related Financial Disclosures (TCFD) assists us to understand and build resilience in relation to the physical and transitional risks posed by climate change.

As part of our risk mitigation strategy, Northern Star is focused on:

- assessing and reducing our greenhouse gas (GHG) emission footprint;
- assessing the physical risks of climate change on our operations, including potential water stress; and
- strengthening our climate change governance by reviewing our climate change related risks and ensuring control measures are incorporated into our business practices.

As disclosed in Northern Star’s 2020 Sustainability Report, the Company completed a series of scenario analysis workshops to better understand and analyse how climate change might impact our business

strategy. The Scenario Analysis determined that a proactive effort scenario, which limits the average global temperature increase to below 2°C, would be most advantageous for reducing the impacts of climate change on our business and the planet.

Progressing on the findings of the 2020 Scenario Analysis, in CY2021 Northern Star announced an ambition to achieve net zero by 2050. This aligns with the Paris Agreement’s goals of:

- ‘holding the increase in the global average temperature to well below 2°C above pre-industrial levels’; and
- ‘aiming to undertake rapid reductions in greenhouse gas emissions in accordance with best available science, to achieve net zero emissions by 2050’.<sup>11</sup>

On page 45 of this Report we disclose in detail Northern Star’s decarbonisation strategy, including the pathways for net zero operational emissions by 2050. Northern Star’s decarbonisation roadmap is aligned with a 1.5°C pathway.

## Northern Star’s position on climate change

We accept the science of climate change as reported by the Intergovernmental Panel on Climate Change.

We are committed to the Paris Agreement and a net zero carbon future, on a 1.5°C pathway

We acknowledge the invitation made to the private sector by the United Nations to scale up efforts and support actions to reduce emissions and/or build resilience and decrease vulnerability to adverse effects of climate change.

We understand the importance of understanding and adapting to climate change related risks.

## Decarbonisation Strategy

Northern Star is committed to reduce its Scope 1 and 2 emissions by 35% by 2030, on the way to net zero operational emissions by 2050.

This target is central to all business and strategic planning. Increased efficiencies and emission reductions are incorporated into decision making, current day operations, future projects, and business development. Carbon pricing considerations will be taken into account in decision making.

During CY2021 we assessed our operations for opportunities to abate emissions, taking into account operational efficiencies, costs reductions, risk, financial, technically practicable and operational performance. We focused primarily on pre-2030 abatement options utilising existing technology, but also considered pre-2050 potential actions.

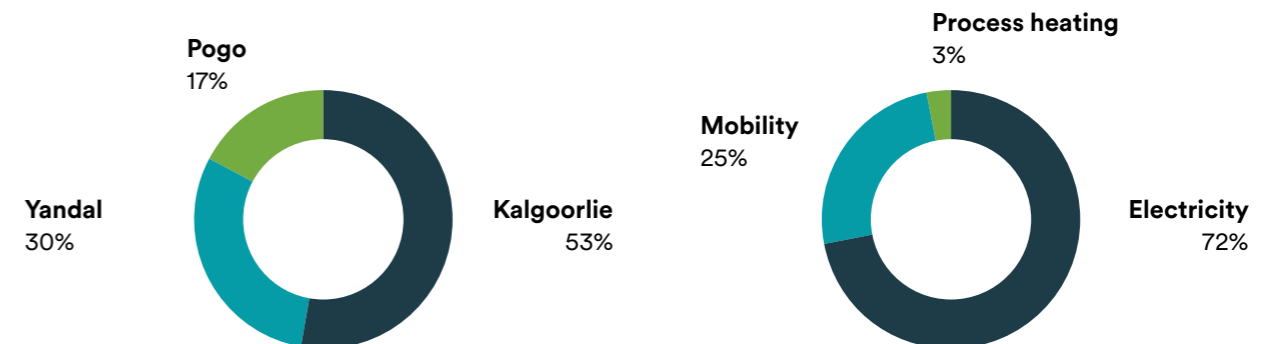
This included an assessment of project implementation risks, considering:

- the current and predicted state of technology readiness;
- access to tenure for locating wind and solar projects;
- life of asset considerations, and
- readiness for project execution.

Our 2030 targets are informed by a bottom-up, asset-by-asset analysis.

Figure 15 below shows that 72% of Northern Star’s greenhouse gas emissions are emitted from both generated and purchased electricity. The efficient use of cleaner electricity sources is therefore the primary area of focus for Northern Star in achieving absolute reduction in emissions. Our interim target demonstrates that by 2030, we intend to have built significant momentum to achieve our net zero emissions by 2050.

Figure 15 Northern Star Baseline (FY20) Scope 1 & 2 Emissions Analysis



## Energy Value Chain at Northern Star

Fossil fuels, predominantly diesel and natural gas, dominate Northern Star’s energy value chain. These fuels are used for on-site electricity generation and backup power generation. Diesel caters to mobile fleet demand (mobility) across all Northern Star’s assets.

Resulting emissions from fossil fuel use indicates that emissions from purchased and generated electricity accounts for 72% of the carbon footprint and approximately 25% for mobile fleet.

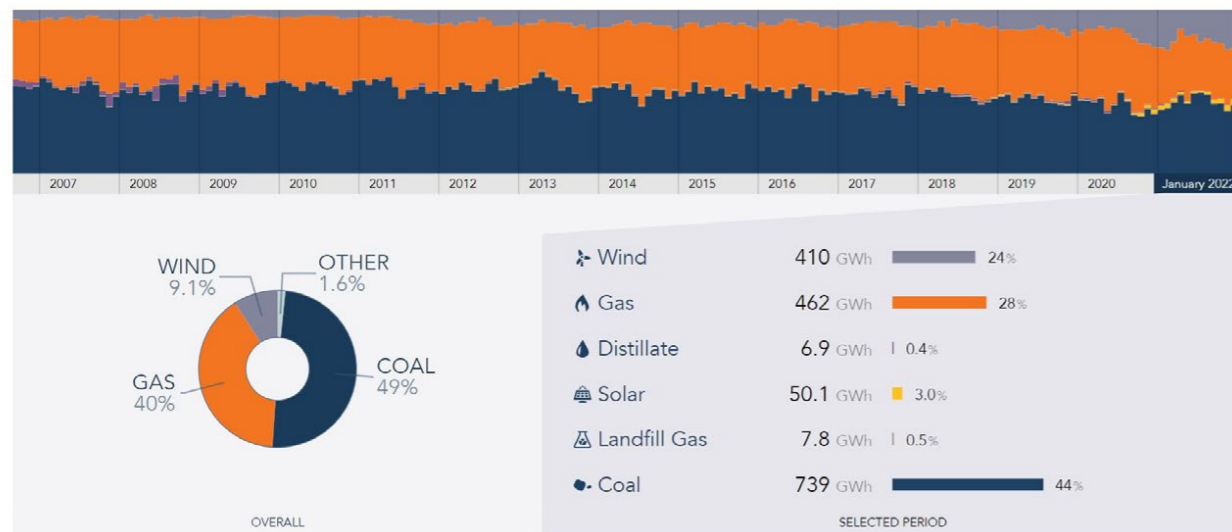
We work with the network operators and infrastructure owners as appropriate to find mutually beneficial opportunities for success in reduction in fossil fuels used in commercial grid electricity generation.

It is crucial for Northern Star that the commercial grid power continues to increase its renewable energy content and reduce the amount of carbon intensive fossil fuels used for generation, while still maintaining stability and load reserves for both residential, commercial, and industrial demands.

The Australian Energy Market Operator Wholesale Electricity Market (AEMO WEM) for the South West interconnected system of Western Australia is showing a slow but steady increase in penetration of renewable energy sources in the fuel mix over time as demonstrated by Figure 16. Northern Star recognises that implementing an evolving power supply mix for the grid is complex, and needs to factor in ageing infrastructure, weather, changing technologies, consumer preferences and increasing interdependencies between gas and electricity markets.

11. Paris Agreement, Article 2.(a) and Article 4.1. Available at [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

Figure 16 Australian Energy Market Operator Wholesale Electricity Market Fuel Mix Trend



Our Defined Pathway to 2030

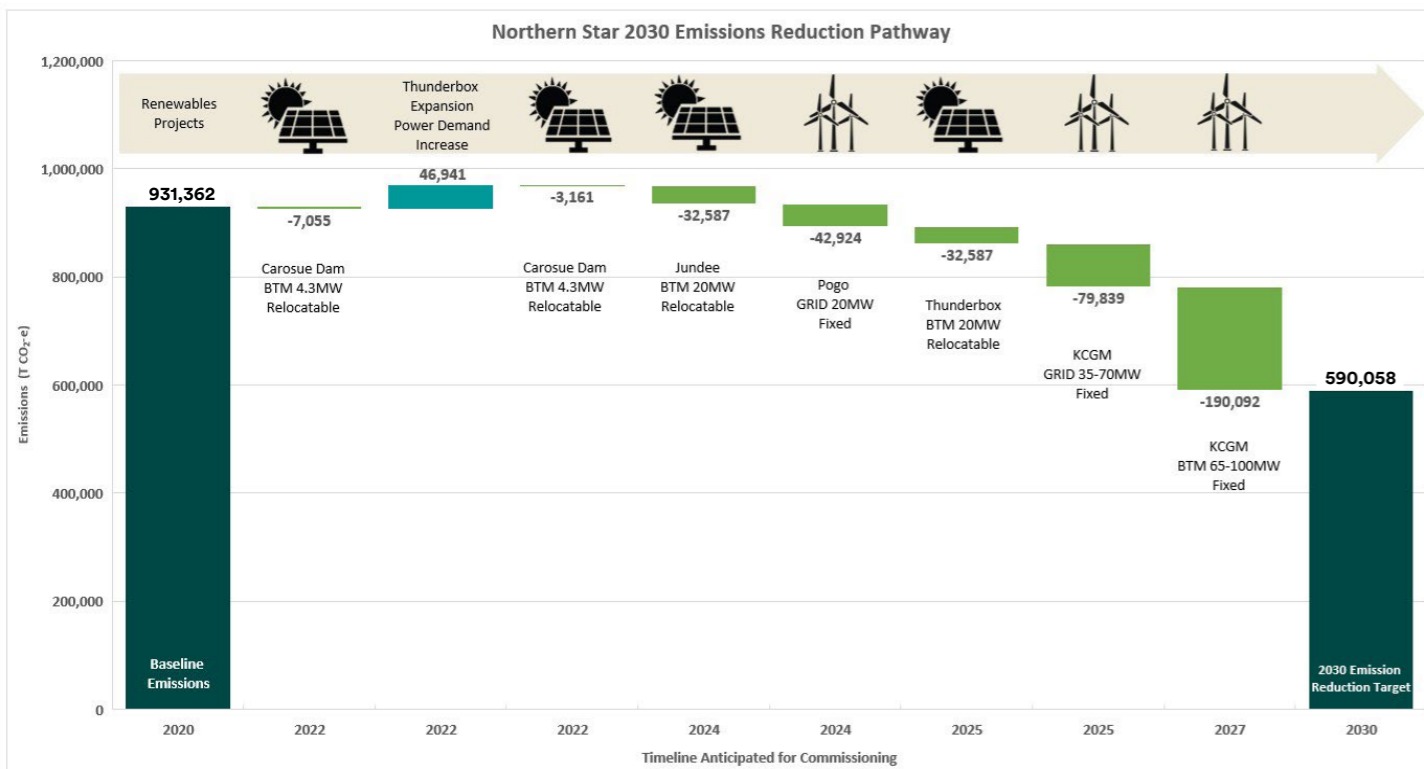
A continued shift to renewables is critical to achieving our 2030 targets and will remain an ongoing focus beyond 2030, as we turn to electrification in replacing our mobile fleet, using renewable energy. Further replacement of purchased and self-generated power supplies with renewables must be done in a way that reduces costs and maintains security of supply. In turn, lower

power costs will result in longer asset life and more sustainable operations.

Integrating current and future renewables and storage technology will be essential to maintain momentum in reduction of emissions, and greater efficiencies in our operations.

The waterfall chart below details Northern Star's pathways to achieve a 35% reduction in emissions by 2030.

Figure 17 2030 Pathway Emissions Reduction Projects



Our current carbon footprint and Scope 1 & 2 emissions are detailed on pages 50-51. Northern Star is pursuing the following strategic pathway and associated emissions reductions prior to 2030, to achieve a proposed reduction in greenhouse gas emissions from our baseline (FY20) of 931kt CO<sub>2</sub>-e down to approximately 590kt CO<sub>2</sub>-e.

- Between Q1 and Q3 of 2022 we will be commissioning an additional 4.3MW of solar renewables BTM<sup>12</sup> at our Carosue Dam Operations, complementing our existing relocatable solar arrays. Our Q1 installation has already achieved a reduction in over 7,000t CO<sub>2</sub>-e, and we expect an additional reduction of over 3,100t CO<sub>2</sub>-e in February with the next arrays coming online.
- In Q2 of 2022 we are anticipating an increase in power consumption demand at our Thunderbox Operations as a result of an expansion project currently underway. Consideration for this additional demand has formed part of our 2030 pathway planning.
- In Q1 of 2024 we anticipate commissioning approximately 20MW of solar renewables BTM at our Jundee Operations. These relocatable solar arrays will provide flexible and relocatable renewable energy that can be redeployed across its operational life at other assets as demands and mine lives adjust.
- In Q4 of 2024 we anticipate commissioning approximately 20MW of wind renewables at our Pogo Operations, either via grid or grid renewable energy<sup>13</sup>.
- In Q2 of 2025 we anticipate commissioning approximately 20MW of solar renewables BTM at our Thunderbox Operations. As per our Jundee project in 2024, this will comprise relocatable solar arrays that can be redeployed as required.
- In Q4 of 2025 we anticipate commissioning approximately 35-70MW of wind renewables at our KCGM Operations via the grid.
- In Q1 of 2027 we anticipate commissioning approximately 65-100MW wind renewables project BTM at our KCGM Operations.

The largest consumer of electricity within Northern Star's operations is KCGM, currently making up 50% of Northern Star's electricity emissions. The viability of expanding KCGM's Fimiston Processing Facility is currently progressing through a Feasibility Study. If this expansion were to be approved there will be significant further electricity requirements, and renewable energy sources will become a

**In a renewable energy market where long tenure is critical to financial approval and cost-effective outcomes, the potential longevity of KCGM is a competitive advantage.**

requirement during the internal approval process. Source of electricity supply to KCGM is therefore a priority in our future focus and thus the most advanced.

In a renewable energy market where long tenure is critical to financial approval and cost-effective outcomes, the potential longevity of KCGM is a competitive advantage.

As part of the plan to accelerate renewable integration at KCGM, Northern Star procured the Newmont power business in CY2021. The assets included:

- An upgraded connection to the grid which increases both capacity and reliability.
- Joint venture ownership of a large-scale (110MW) gas/diesel Parkeston Power Station with a licence allowing both the purchase and sales of electricity via the grid.
- The ability to cease direct coal contracts and encourage market competition and enable the development of new renewable sources.
- An extensive distribution system of private powerlines.
- Infrastructure to enable off grid renewable connection through interim power requirements, long term firming capability and distribution. From 1 January 2022, daily self-generation of power via gas/diesel at Parkeston Power Station has ceased. This supply is now predominantly sourced from the Balancing Market that exists on the grid, which is becoming increasingly supplied by renewable generation. The connection to the grid and the ability to intermittently self-generate provides considerable mitigation from the challenges associated with renewable integration, including quality, supply continuity, and pricing.

To encourage renewable energy via the grid, Northern Star is seeking to partner with shovel ready

12. The BTM refers to "Behind the Meter" projects that are to be installed directly on Northern Star sites, with an aim to reduce our demand on existing offsite or onsite power generation systems that may be utilising fossil fuels for generation.  
13. Via Grid is equivalent to "Front of Meter" and will deliver renewable energy generated electricity to our operations by the network grid operators power lines.



(advanced stage of design and approval) renewable energy projects. Northern Star is presently in discussions with various potential counterparties.

The Fimiston Expansion Study is investigating the use of private renewable energy generation, with self-generation and the progressive addition of time shifting storage (batteries, hydrogen, etc.) to complement the existing grid supply in the longer term.

When considering storage, the cost of batteries has reduced by 89% since 2010<sup>14</sup> and mass production associated with electric vehicles will continue to place downward pressure on these costs. This, along with other storage methods, such as hydrogen, will be closely monitored.

The second largest source of emissions at KCGM is the mining fleet which will be due for replacement between 2027 and 2031. Electrification would be a viable alternative to the current diesel fleet if the average cost of electricity can be lowered. The decision on storage needs to consider both facilitating renewable penetration and enabling fleet electrification.

The Yandal Operations are Northern Star's second largest source of emissions. Consideration is being

given to renewable assets that are relocatable, with Carosue Dam operations already having deployed relocatable solar panels in CY2020 and CY2021. These assets can be relocated several times over their useful life to new operations. Relocatable wind farms are a less practical proposition, but there will be ongoing studies into smaller scale wind farms and energy storage.

The remaining operations make up approximately 40% of Northern Star's emissions. The focus areas at these operations include:

- Pogo – incorporating wind into procured grid power and displacing propane heating.
- Carosue Dam – expansion of the existing solar facility, incorporation of small-scale storage and enhancing the integration with the existing power station.
- Kanowna Belle – potential tie in to KCGM renewable electricity.
- South Kalgoorlie Operations – potential connection to grid to displace majority of diesel self generation.

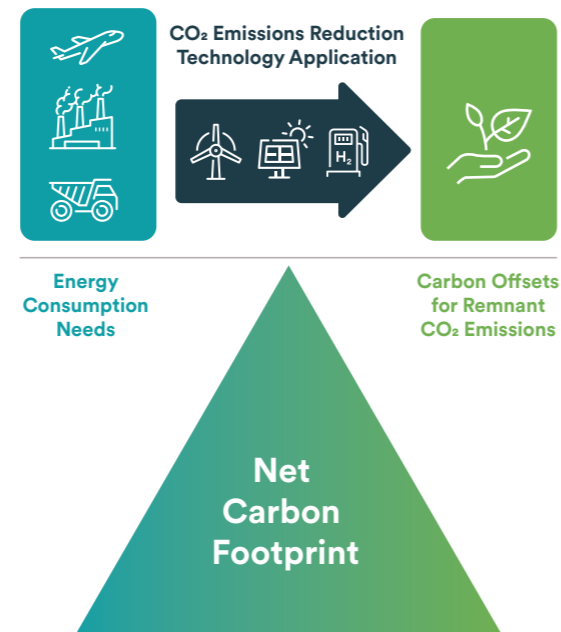
**Offsets**

Northern Star's intent is to strive towards zero emissions and improve efficiencies wherever practicable, however there will likely remain a requirement to utilise offsets to achieve net zero emissions by 2050.

Northern Star's preferred approach is the generation of offsets from within a local community with stakeholder involvement. To this end Northern Star has earmarked three areas of high potential in the Goldfields over which Northern Star has existing title.

Studies focused on Human Induced Regeneration Carbon Projects are currently underway on these properties and will enable CY2022 Commonwealth Application submissions. Two of these properties meet the tenure criteria, however, the third relies on proposed legislation changes before it can formally proceed.

**Figure 18** CO<sub>2</sub> reduction technologies



**Northern Star's intent is to strive towards zero emissions and improve efficiencies wherever practicable, however offsets will likely remain a requirement to achieve net zero by 2050.**

**Highlight: Our Commitment**

Northern Star has already taken meaningful steps on its pathway to Net Zero by 2050.

As an organisation we have moved from committing and assessing, to taking action. Our robust 2030 target not only significantly reduces our current emissions; the emissions reduction will deliver efficiencies through lower power costs, increasing life of asset, and fully offsets our growth aspirations.

We pride ourselves on demonstrating real commitment through business first action, working with our communities, stakeholders, peers and network operators to achieve mutually beneficial and sustainable improvements.



*Rehabilitation at Jundee Operations, Yandal*



Solar array, Carosue Dam Operations, Kalgoorlie.

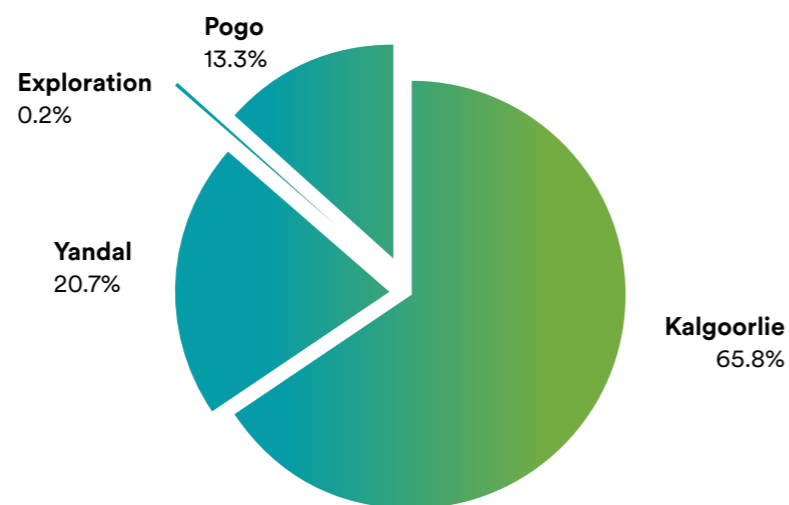
14. See BloombergNEF 2021.

### Current Carbon Footprint

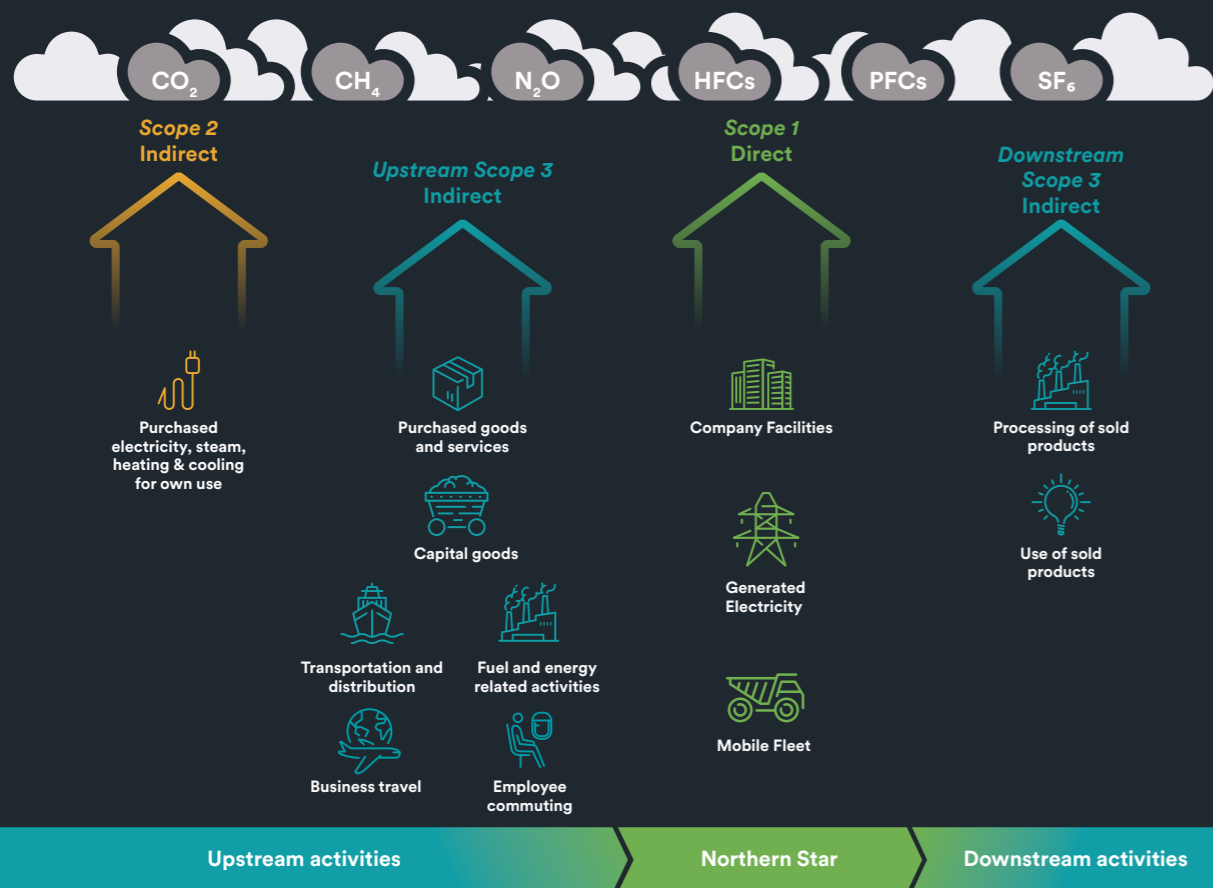
The evaluation and monitoring of Northern Star's carbon footprint was enhanced in CY2021 to support our net zero by 2050 ambition, including:

1. a high-level analysis of the Scope 1 and Scope 2 emissions associated with the merged entity to better understand our opportunities for emissions reductions;
2. detailed analysis of site specific emissions reduction options; and
3. assessing and measuring some of our Scope 3 emissions associated with our wider value chain.

**Figure 19** Northern Star's CY2021 GHG emissions profile



### Overview of Northern Star's GHG emissions



### Scope 1 & 2 Emissions

In CY2021, our total Scope 1 and Scope 2 GHG emissions increased from 693,347 t CO<sub>2</sub>-e to 1,169,524 t CO<sub>2</sub>-e. This increase was due to the larger operational footprint of the merged entity. The emissions intensity (total emissions generated per ounce of gold sold) has also increased slightly from 0.71 t CO<sub>2</sub>-e/oz to 0.76 t CO<sub>2</sub>-e/oz due to Northern Star's expanded percentage of open pit production and the current level of non renewable energy utilised in the commercial grid power.

When compared with underground mining methods, open pit mining typically generates higher rates of emissions due to the larger quantities of material required to be moved to extract ore.<sup>15</sup>

Scope 1 and 2 GHG emissions are calculated in accordance with the Australian Government methodology required by the *National Greenhouse*

*and Energy Reporting (NGER) Act (2007)*. Emissions associated with our Pogo Operations, in Alaska are calculated using the same method to ensure consistency in our emissions reporting.

The following figures and tables provide a breakdown of our Scope 1 and 2 GHG emissions quantities by Operation and source.

Our Fimiston, Carosue Dam, Jundee and Thunderbox Operations emit more than 100,000 tonnes of CO<sub>2</sub>-e each year. This means that 80% of our Scope 1 GHG emissions, are reportable under the Australian Government's Safeguard Mechanism. The Safeguard Mechanism provides a framework for Australia's largest emitters to measure, report and manage their emissions and encourages them to keep emissions at or below the emissions baselines set by the Clean Energy Regulator.

**Table 3** Northern Star's CY2021 GHG emissions profile<sup>16</sup>

	CY2021	CY2020	CY2019
Scope 1 GHG Emissions (t CO <sub>2</sub> -e)	692,098	313,264	229,005
Scope 2 GHG Emissions (t CO <sub>2</sub> -e)	477,426	380,083	241,901
Total Scope 1 & 2 Emissions intensity (t CO <sub>2</sub> -e/oz)	0.76	0.71	0.58

CY2020 and CY2019 figures do not include Saracen or 100% KCGM Operations.

**Table 4** Scope 1 & 2 GHG emissions by Site & Region (t CO<sub>2</sub>-e)<sup>16</sup>

Operation	Site	CY2021	CY2020	CY2019
<b>Kalgoorlie (65.8%)</b>	Carosue Dam Operations	150,238	0	0
	Kalgoorlie Operations	171,393	212,342	217,216
	KCGM Operations	447,784	199,085	0
<b>Yandal (20.7%)</b>	Jundee Operations	136,491	124,104	113,260
	Thunderbox Operations	105,292	0	0
<b>Pogo (13.3%)</b>	Pogo	155,669	154,679	136,674
<b>Exploration (0.2%)</b>	Paulsens	1,415	2,045	1,641
	Tanami	391	419	880
	Exploration	722	576	1,120
<b>Other (0.01%)</b>	Corporate	128	97	114
		<b>1,169,524</b>	<b>693,347</b>	<b>470,906</b>

15. Greenhouse gas emissions and production cost footprints in Australian gold mines, S. Ulrich, A. Trench, and S. Hagemann 2020. Journal of Cleaner Production.  
 16. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021.

## Scope 3 Emissions - Partial Assessment

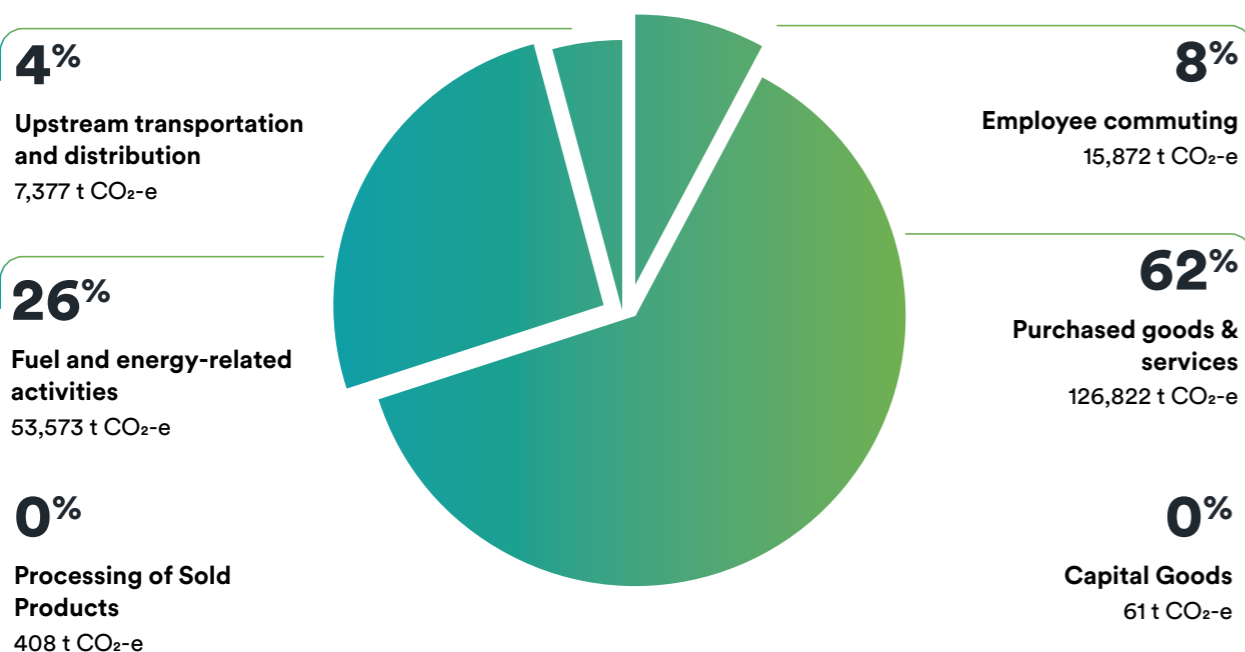
In CY2021 Northern Star invited our suppliers to provide emissions information as part of a study to evaluate some of our Scope 3 emissions associated with our value chain<sup>17</sup>.

Approximately 30% of invited suppliers provided the required information to assist Northern Star in

starting to build our understanding of the scale and nature of our Scope 3 footprint.

The highest contribution to our Scope 3 emissions, based on currently available data, is from purchased goods and services at 62%, followed by fuel and energy related activities at 26%<sup>18</sup>.

**Figure 20** CY2021 Scope 3 emissions by source - partial assessment



As disclosed in our decarbonisation strategy on page 45, Northern Star does not currently have a Scope 3 emissions reduction target.

In CY2022 further research and assessment of our Scope 3 emissions data and sources will be undertaken to accurately assess our total impact.

These efforts are ongoing and require engagement of our Suppliers and Contractors to not only better understand our emissions sources but to understand what will be the most effective measures to implement in our value chain for reduction of emissions.

In CY2022 we intend to:

- survey employees, Suppliers and Contractors to ascertain their impact on our data.
- capture accurate data relating to employee and stakeholder commutes to and from our corporate office and operations.
- collate information relating to FIFO workers who travel to Perth and Fairbanks from outside Western Australia and Alaska.
- follow up with Suppliers and Customers who did not provide specific emissions data this year.
- develop a Scope 3 baseline using the collated data to assist in assessing our total carbon footprint.

**In CY2022 further research and assessment of our Scope 3 emissions data and sources will be undertaken to accurately assess our total impact.**

17. As guided by the Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

18. The estimation of Scope 3 emissions above does not account for total Scope 3 emissions. For instance, business Travel has been excluded from this report due to data availability limitations. It will be included in future assessments.

## Energy Use & Production

As a direct result of the increased number and scale of our operations within the merged Group, our net energy consumption increased from

8,628,403GJ to 13,496,889GJ. During the same period net energy intensity consumed per ounce increased to 8.80 GJ/oz.

**Table 5** Energy Produced<sup>19</sup>

Energy Produced (GJ) <sup>20</sup>		CY2021	CY2020	CY2019
Kalgoorlie	Carosue Dam Operations	588,177	-	-
	Kalgoorlie Operations	114,479	156,017	164,335
	KCGM Operations	-	-	-
Yandal	Jundee Operations	666,552	625,709	499,837
	Thunderbox Operations	433,942	-	-
Pogo	Pogo (Alaska)	-	-	-
Exploration	Paulsens	9,181	8,120	8,222
	Tanami	-	-	-
	Exploration	-	-	-
Other	Corporate	-	-	-
		<b>1,812,331</b>	<b>789,847</b>	<b>672,394</b>

**Table 6** Net Energy Consumed<sup>19</sup>

Net Energy Consumed (GJ) <sup>21</sup>		CY2021	CY2020	CY2019
Kalgoorlie	Carosue Dam Operations	2,368,933	-	-
	Kalgoorlie Operations	1,513,883	1,852,148	1,874,733
	KCGM Operations	4,302,557	3,494,507	-
Yandal	Jundee Operations	2,450,995	2,236,181	1,983,836
	Thunderbox Operations	1,792,634	-	-
Pogo	Pogo (Alaska)	1,031,212	1,001,777	896,872
Exploration	Paulsens	20,144	29,117	23,362
	Tanami	5,572	5,964	12,530
	Exploration	10,282	8,204	15,954
Other	Corporate	677	506	647
		<b>13,496,889</b>	<b>8,628,403</b>	<b>4,807,933</b>

19. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021.

20. In accordance with the NGER Act, 'energy produced' comprises of only electricity produced at Northern Star sites.

21. In accordance with the NGER Act, 'energy consumption' comprises all energies consumed by Northern Star including site produced electricity, grid purchased electricity, and fuels burnt such as diesel in vehicles and heating oil in furnaces.

### TCFD Alignment

Northern Star is committed to understanding how both the physical impacts of climate change and the transition to low carbon operations might affect our business. In CY2021 we continued our work to meet the recommendations of TCFD by:

- setting and disclosing interim targets of 35% reduction in Scope 1 & 2 emissions by 2030, to assist in meeting our net zero by 2050 ambition;
- updating our risk and opportunity registers to incorporate our current portfolio of assets; and
- Board adoption of a Climate Change Policy.

**Figure 21** Our phased alignment with TCFD recommendations – CY2021 progress

Governance	Strategy	Risk Management	Metrics & Targets
<p>Disclose the organisation's governance around climate-related risks and opportunities.</p> <p><b>CY2020 Commitments Satisfied:</b></p> <ul style="list-style-type: none"> <li>• <b>Continue capacity building of executive and Board:</b> Hired Chief Technical Officer to increase Executive capacity for for growth projects and execution of decarbonisation actions</li> <li>• <b>Continue oversight of TCFD-related activity:</b> Annual gap analysis completed to identify areas for improvement</li> </ul> <p><b>Other CY2021 Achievements:</b> Adoption of a Climate Change Policy</p> <p><b>Planned Action (1-5 years):</b> Continue oversight of meeting TCFD recommendations</p>	<p>Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material</p> <p><b>CY2020 Commitments Satisfied:</b></p> <ul style="list-style-type: none"> <li>• <b>Conduct scenario analysis in relation to Saracen projects and integrate implications of scenario analysis into strategic planning:</b> The initial scenario analysis was able to consider Saracen projects to the timing of the merger announcement</li> </ul> <p><b>CY2021 Achievements:</b> Disclosure of the updated risk and opportunity register</p> <p><b>Planned Action (1-5 years):</b> Integrate implications of scenario analysis into strategic planning</p> <p>Consider the benefits of quantitative modelling of key climate risks to estimate financial impacts and make a decision on quantification actions</p>	<p>Disclose how the organisation identifies, assesses, and manages climate-related risks</p> <p><b>CY2020 Commitments Satisfied:</b></p> <ul style="list-style-type: none"> <li>• <b>Assess and integrate Saracen assets into Northern Star's climate-related risk register:</b> The risk and opportunity register on pages 58-59 incorporates all climate related risks associated with the current asset portfolio</li> <li>• <b>Update the ESS Committee charter to include 6-monthly reviews of the climate-related risks:</b> The charter now requires review of climate change risks in Q2 and Q4</li> </ul> <p><b>CY2021 Achievements:</b> Comprehensive disclosure of high inherent risks</p> <p><b>Planned Action (1-5 years):</b> Regularly review risks and mitigating controls</p>	<p>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material</p> <p><b>CY2020 Commitments Satisfied:</b></p> <ul style="list-style-type: none"> <li>• <b>Assess environmental footprint following merger with Saracen with a view to setting climate related targets and their pathways:</b> Scope 1, 2 and and some Scope 3 emissions have been assessed with the current asset portfolio</li> </ul> <p><b>CY2021 Achievements:</b> Net Zero by 2050 ambition released July 2021</p> <p>Target of a 35% reduction by 2030 disclosed in this Sustainability Report on page 47</p> <p><b>Planned Action (1-5 years):</b> Regularly disclose progress against targets</p>



Sunrise in the Wandoo Woodland, Kanowna Belle, Kalgoorlie.

### Climate Change Governance

Northern Star’s Board has oversight of the physical and transitional risks posed by climate change through the ESS Committee’s review of climate change related risks and the Audit & Risk Committee’s review of the Company wide risk register.

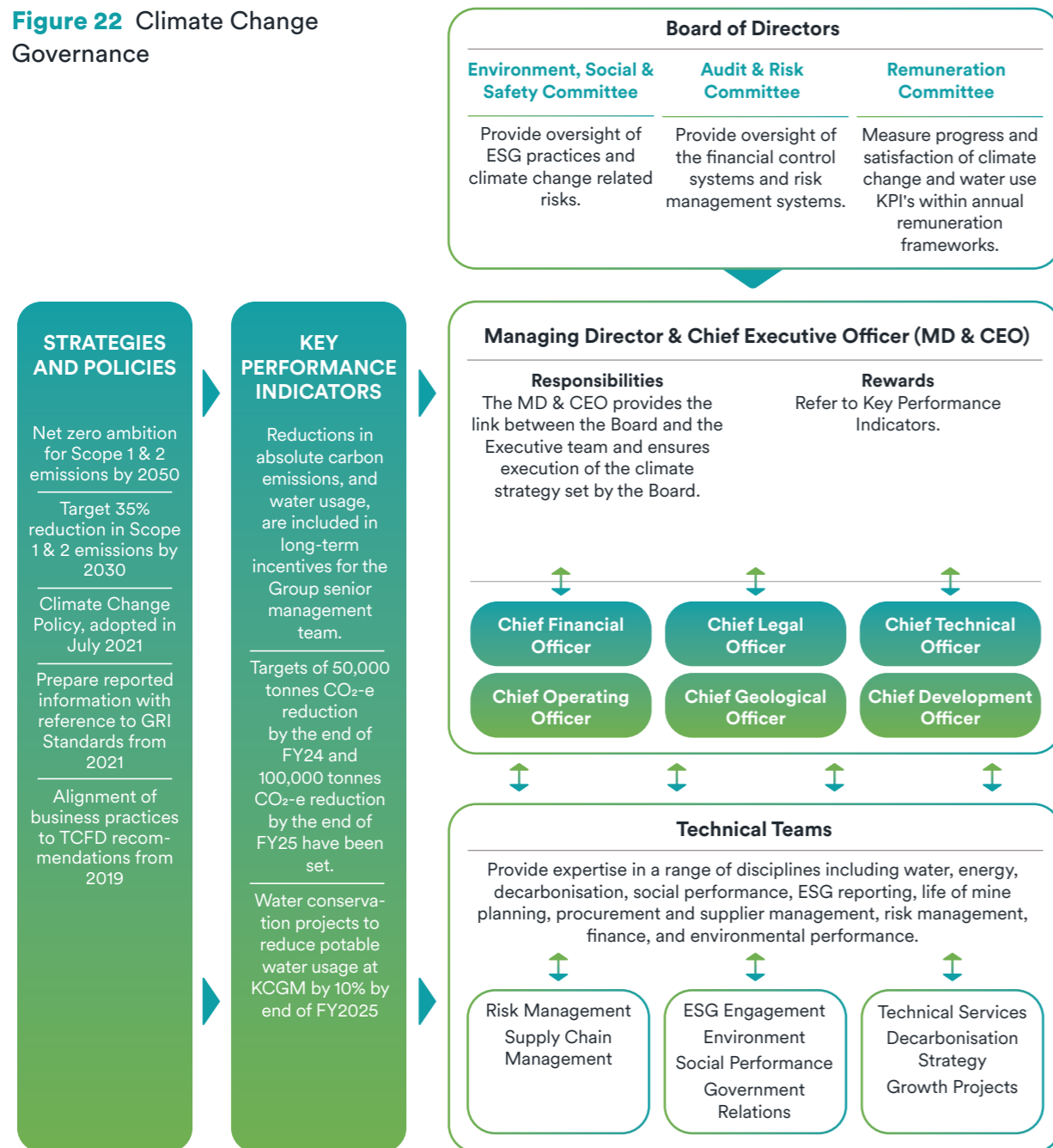
Climate change related matters are considered quarterly by the Board through its ESS Committee meetings. Northern Star’s Chief Legal Officer & Company Secretary has climate-related reporting and disclosure responsibilities within her portfolio, including the Environment, ESG Engagement and Social Performance functions.

In CY2021 Northern Star’s Board adopted a Climate Change Policy confirming our alignment to the Paris

Agreement through our net zero by 2050 ambition. The Climate Change Policy commits Northern Star to developing and implementing a climate change strategy that:

- focusses our activities in reducing Scope 1 and Scope 2 emissions;
- aligns our operations with the 1.5°C ambition;
- use our influencing capability to reduce Scope 3 emissions; and
- contributes to the 1.5°C ambition beyond our business by influencing government and funding business relevant projects to help remove or avoid emissions.

Figure 22 Climate Change Governance



### Climate Related Risks and Opportunities

Northern Star’s risks are identified and managed at three levels of the business; by functional, site and corporate teams. Ultimate responsibility for risk sits with the Board. The ESS Committee and Audit & Risk Committees have oversight of risks and controls.

The Chief Financial Officer is accountable for ensuring the Company wide risk review processes are developed and in place across the organisation. Climate change risks are formally reviewed as part of the Corporate Risk Review processes in Q2 and Q4 each year, and regularly discussed in the ESS and Audit and Risk Committees throughout the year.

In CY2021 a review of both our climate change related risk register and opportunities was completed to integrate our current asset portfolio, reassess

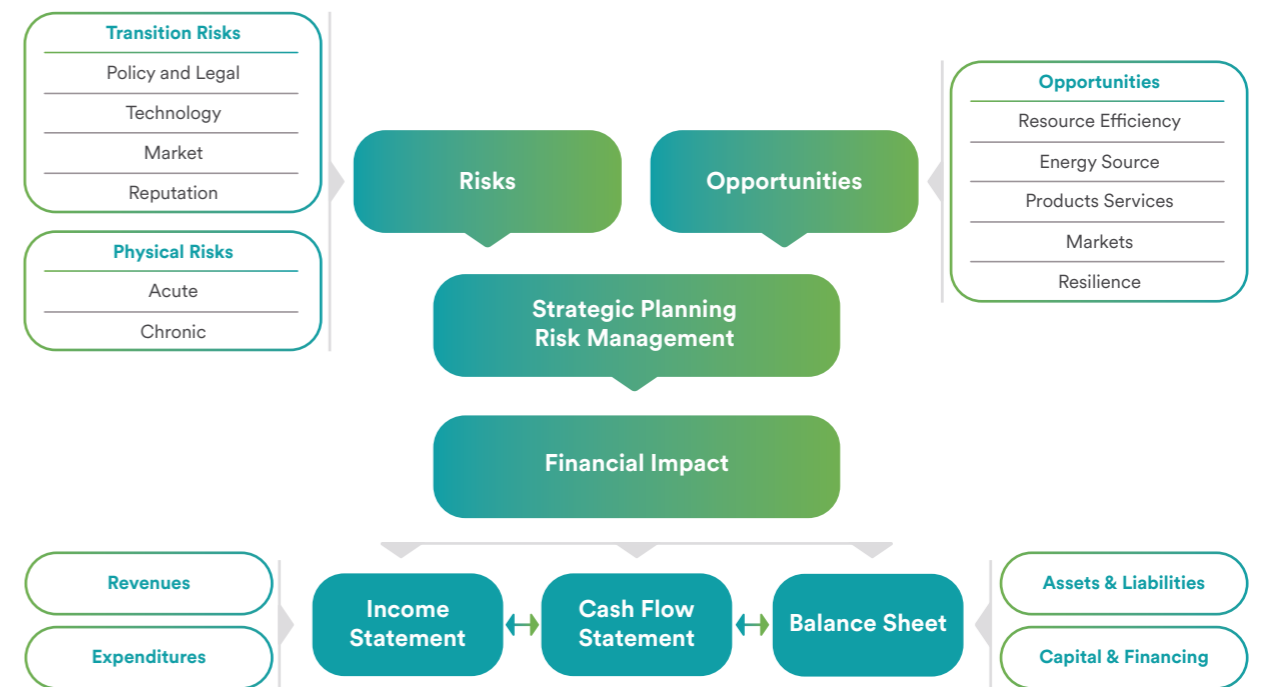
risk ratings and update current and planned control measures. This review identified no material changes to the inherent risk ratings of the 28 identified climate change related risks. Climate change risks identified as high are summarised in Table 7 overleaf.

Understanding the effects which climate change may have on our business allows for the identification of opportunities as well as potential risks. Figure 23 illustrates how climate related opportunities feed into the risk management process to assist in strategic planning and financial assessments, as summarised in the TCFD recommendations. Key opportunities identified in the CY2021 are summarised in Table 9 overleaf. In future reports we aim to explain financial impacts of these risks.

“Understanding the potential effects climate change may have on our business allows for the identification of opportunities as well as potential risks.”

Hilary Macdonald, Chief Legal Officer & Company Secretary

Figure 23 Climate change related risks, opportunities and financial impact<sup>22</sup>



22. Taskforce on Climate Related Financial Disclosures, 2017

**Table 7** The high inherent climate change related risks on our climate change risk register and key control measures

Risk	Site affected	Description	Inherent Risk Rating	Key control measures	Residual risk rating	Planned action
Groundwater scarcity	Australia	Decreased average total annual rainfall causes drier surface conditions and underground aquifers to be replenished slowly.	High	<ul style="list-style-type: none"> <li>Third party reviews of usage and aquifer health</li> <li>Recycled water use with underground and processing.</li> <li>Decant water from tailings facilities for reuse in all our operating process plants.</li> <li>Thickener installed in Jundee</li> </ul>	Medium	Proposed thickener installation at KCGM during potential Fimiston expansion
Flooding	Australia and Alaska	In Western Australia, rainfall is becoming more concentrated and cyclones more severe; in Alaska, total rainfall is increasing and permafrost melting off-site, both pointing to an increase in the frequency and severity	High	<ul style="list-style-type: none"> <li>Surface water management infrastructure installed at all sites (e.g. diversion ditches, bunds).</li> <li>Water level monitoring at surface water structures.</li> <li>Severe Weather and Cyclone Management Plans in place.</li> <li>Scenario analysis completed as per TCFD recommendations</li> </ul>	Medium	Review and audit of site specific risk exposure.  Flood mitigation infrastructure review.
Extreme temperature changes	Australia and Alaska	Increase in the frequency of extreme temperature days (both hot and cold) can cause worker health issues and impact production	High	<ul style="list-style-type: none"> <li>Working in Adverse Temperature/ Occupational Health &amp; Safety procedures and guideline.</li> <li>Daily hydration testing undertaken at Australian operations.</li> </ul>	Medium	Increase live monitoring capability of personnel and environmental conditions
Shareholder divestment & activism	Australia and Alaska	Shareholders may change their investment decisions for not demonstrating action on climate change generally.	High	<ul style="list-style-type: none"> <li>Climate Change Policy aligned to Paris Agreement Net Zero ambitions.</li> <li>2030 emissions reduction target.</li> <li>Annual ESG roadshows with key Company representatives to discuss ESG related matters.</li> </ul>	Medium	Full adoption of TCFD recommendations.  Auditing and verification of sustainability data.

**Table 8** Risk Rating

Risk Rating	Priority	Description
High	1	<ul style="list-style-type: none"> <li>High inherent risks are generally considered unacceptable</li> <li>The implementation of mitigating strategies to be actively pursued</li> <li>Notification to, and approval to conduct or continue activity required from, Executive management prior to commencement or continuation when first identified or assessed as high risk</li> <li>A risk owner is appointed to ensure mitigation strategies are pursued and progress reported at least quarterly to the Audit and Risk Committee</li> </ul>
Medium	2	<ul style="list-style-type: none"> <li>Where appropriate, further risk mitigation strategies should be considered and applied as practicable.</li> <li>A risk owner is appointed to ensure that all aspects relating to the risk and its mitigation are managed</li> </ul>
Low	3	<ul style="list-style-type: none"> <li>Where appropriate, further risk mitigation strategies should be considered as part of the process of continuous improvement</li> <li>A risk owner is appointed to ensure all aspects relating to the risk and its mitigation are managed</li> </ul>

**Table 9** Northern Star's Climate Related Opportunities

Climate Related Opportunities	
Products and Services	Increase in gold demand
	Low emissions mining
	Diversification into low emissions technology commodities
Energy source	Ethical gold certification
	Carbon trading
	Trade off excess renewable energy
	Renewable Energy & Energy Efficiency Certificates
	Energy price volatility resilience
	Diversification of energy sources
Resource efficiency	Renewable backup generation
	Lower input tailings treatment
	Reducing water consumption
	Increased operating efficiency
	Electrification of operations
Resilience	Track climate performance
	Daily hydration testing undertaken at Australian operations.
	Improve social licence to operate
	Improved employee safety and satisfaction
	Community resilience initiatives
	Joint venture partnership collaborations
	Reinforce assets to increase resilience to physical impacts
	Renewable energy to maintain power quality
	Diversify operation locations
	Diversify supply chain
Monitor and communicate weather conditions	
Markets	Consider climate change in environmental management
	Determine retreat thresholds
	Emerging gold processing techniques
	Action and disclosure to increase stakeholder confidence
	Action and disclosure to access to capital for adaptation
	Incorporate climate change criteria in decision making
	Favourable financing for green assets



# Progress in People Performance

## Aboriginal Training and Mentorship

Geology Trainee Hendrick Tucker and Senior Geology Technician Kevin Dororizzi, participants in KCGM Operations' Aboriginal Trainee and Mentor Program, Kalgoorlie.

# Our People



“In a year of significant growth for Northern Star, our people continue to enable and support our success”

Marianne Dravnieks, Executive Manager - People & Culture

Northern Star’s efforts to attract and retain the best people into the Company start at onboarding and maintain support for employees throughout their employment lifecycle with Northern Star. Whether that be through providing flexible working arrangements, individualised development plans, paying for and encouraging the use of parental leave, and

supporting their charitable pursuits with donation matching and volunteer leave, we realise that caring for our employees’ wellness both in and outside of the workplace is integral to our success. We know from the results of the November 2021 Culture Survey that our response to climate change, our social performance, and our environmental compliance matter a great deal to our employees.

## 2021 People Snapshot

**3,100**

Employees, excluding contractors

**5,322**

Our global workforce, including contractors

**46%**

Workforce residential to Kalgoorlie

**23%**

Female employment in our workforce

**217**

Current Graduates, Vacation Students, Trainees & Interns

**61**

Current Apprentices (including Trade Upgrades)

## Our Workforce

The successful growth in our Company in CY2021 saw a change in workforce size. Whilst this change has been significant in sheer numbers of people, it has also seen a positive change in our workforce composition.

We have maintained a long-term workforce across our operations with 92% of our employees at all operations employed on a permanent full-time

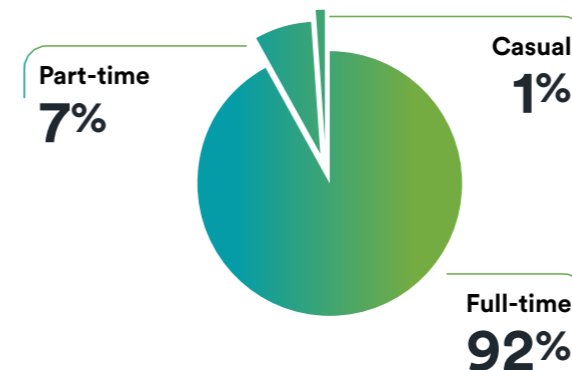
basis, 7% on fixed term basis and only 1% on casual contracts<sup>23</sup>.

Our rate of female employment has continued to grow and in CY21 reached 23%, continuing to improve from previous years.

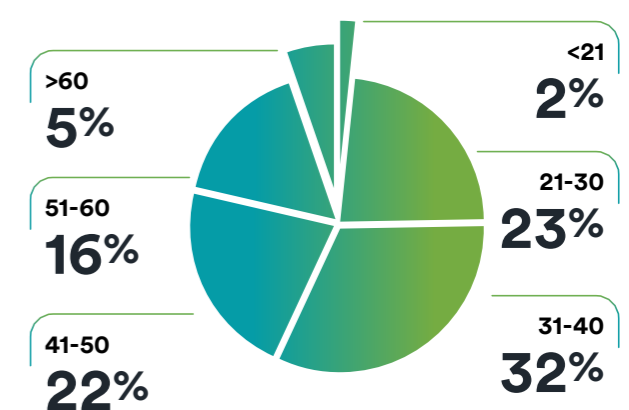
Our age demographic remains similar to previous years even with the significant Company growth.

Figure 24 Northern Star Workforce Summary, as at 31 December 2021

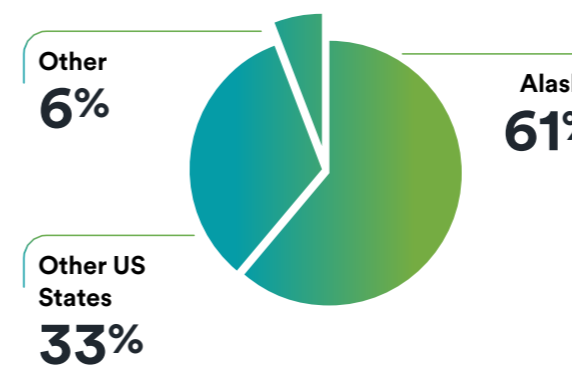
### Employees by employment type



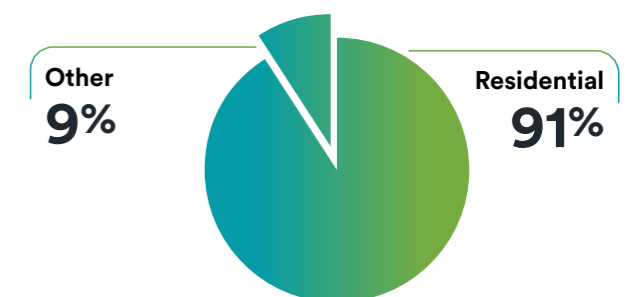
### Age demographics



### Local employment - Pogo



### Local employment - Kalgoorlie (excl. Carosue Dam)



23. Note: Employees at Northern Star are covered by a number of industrial instruments including common law contracts, Modern Awards and Enterprise Agreements.



## Development of Our People

Each employee at Northern Star has multiple opportunities and avenues to gain support. Individual management and support is provided to employees by their line manager. Confidential data is collected at both the individual and the group level. By using data, we are better equipped to respond to workforce trends as well as an individual employee's challenges and development requirements, assisting them to ensure that they continue to grow and perform to the best of their abilities.

Currently, we gather data from our employees across their employment lifecycle, in addition to key annual milestones, as shown in Figure 25 below. This data informs our responses to the immediate, medium, and long-term needs of individual employees and the workforce as a whole.



Maritza Potgieter, production employee, KCGM

Figure 25 Northern Star data collation points

This data informs our responses to the immediate, short and long-term needs of individual employees and the workforce as a whole.



### Employee Experience Check-ins

Gathered at recruitment, onboarding, 8-weeks, 6-month and 12-month to gauge role satisfaction and engagement.

This data is used to ensure our people are fully connected to Northern Star and to analyse for trends to enhance retention.



### Performance Evaluation Program

To evaluate and understand current performance and development needs. This data then drives our development calendar and helps us to meet emerging needs of the Company.

PEP's are used to support managers in developing their people and combined data is used to identify and develop training.

# 96%

Performance Evaluation Programs completed in CY2021



### Culture Survey

Measuring the lived experience of our employee in relation to the STARR Core Values.

Using the STARR Core Values as a framework, every employee feedbacks their view. This data is collated and used to design department and company interactions to enhance our culture.

## Employee Attraction, Retention & Engagement

Retaining our people is a key driver for our success. In a competitive and challenging labour market, we have expanded cultural, developmental, and financial benefits to retain and attract employees through increased job satisfaction. The steps we are taking to foster greater diversity and inclusion are detailed on page 68.

Key actions we have taken to achieve our goal of retaining and engaging our current workforce and attracting new people:

- Post-merger the STARR Core Values have remained consistent. We have aligned all sites with the STARR Core Values – providing a consistent language and expectation for how we work.
- Increased focus on internal and external training opportunities – including over 200 frontline supervisors and 30 senior leaders trained in CY2021 in our innovative multi-level leadership development programme. This included online training, face-to-face training including Leadership Insights for front line leaders, and Leadership Transform, the next level of leadership training externally facilitated.
- Cross site engagements – leaders from regions sharing knowledge to further develop their own skills and meet business needs.
- Our inaugural professional development - including internal conferences for Geology and Mining Engineering impacting over 300 of our people across the organisation both in person and online from all of our sites.
- Launching our 5-year strategy with many of our senior leadership team from across our sites in attendance at an offsite forum.

We have also implemented:

- Pay reviews against market rates, to align and adjust pay rates across the merged organisation.
- All employees included in performance linked incentives, and an innovative salary opportunity

linked to the gold price where employees receive a quarterly bonus which links to the gold price.

- A\$1,000 share offers to eligible employees, inviting employees to become owners in our Company with 93% uptake by eligible employees.
- An inaugural share match plan, allowing eligible employees to invest in Northern Star shares and hold them for 3 years, following this Northern Star will transfer the same number of shares to the employee for free. This further aligns our people with our shareholders.
- Providing access to a salary sacrifice scheme for all our Australian Employees.
- Access to our extensive health and wellbeing services – from online resources, to face to face services supporting physical and mental health, no matter where our employees live.

We are also committed to filling the pipeline of mining talent via:

- Engagement with universities – through vacation and graduate programs and local involvement in university development days.
- Supporting the Gold Industry Group - Gold Facilitators program – getting our people out to schools to share their love of mining, gold, and Northern Star.
- Supporting industry engagement programs.
- Supporting MADALAH – by funding 12 5-year university degrees annually (including Indigenous mentoring and networks) for Aboriginal and Torres Strait Islander students in Western Australia.

With a continued focus on culture, development and providing a working environment that lives the STARR Core Values, Northern Star continued in CY2021 to build our strength as a preferred employer.

**“Retaining our people is a key driver for our success in a competitive and challenging labour market.”**

Simon Jessop – Chief Operating Officer

### STARR Core Values Focus

Our Company culture is underpinned by the behaviours and decisions of our workforce, are guided and supported by the Company’s STARR Core Values. Our Values form the basis for everything we do at Northern Star.

We include reference to our Values in all of our people processes including our recruiting, inductions, performance management,

communications, surveys and training. We encourage employees to embrace and use the Values in every task they complete through our Values in Action program.

All our employees are involved in Values in Action which includes develop simple language so the Values “come to life”.

## “At Northern Star our STARR Core Values are integral to the working lives of all our employees and operations”

Stuart Tonkin – Managing Director

### Highlight: STARR Core Values in Action

**Our people are connected to our values and use them across our business.**

Some specific focusses for Values in Action in 2021 included:

**Respect in Action:** Across our sites, our senior leaders delivered bespoke training to our people to ensure all our employees were fully aware of the psychosocial harm cause and prevention in mining sites and camps. This training included what to look for, how to respond (whether experiencing or observing) and importantly how to report harassment that may have been experienced or observed.

This training was provided to all our workforce and contractors, both Fly-In, Fly-Out and Residential. The training was well received and resulted in better awareness and issues being identified and addressed.



### Highlight: Teamwork in Action

**Teamwork in Action:** As part of our focus on inclusion and diversity. Our Managing Director & CEO sponsored the formation of TeamINC. TeamINC is an inclusive team program, led by our employees to enhance the psychological safety in our workplace. Using data gathered from a customised questionnaire, the TeamINC team is tasked with creating awareness, advocating for and responding to the current barriers or challenges minority groups in our workforce might face.



### CY2021 Culture Survey

Northern Star conducts annual culture surveys to better understand the experience and engagement of our workforce. Employee responses are collected anonymously by a third party. In CY2021, 85.5% of our employees responded to the November survey, with strong representation from all areas of our business. This is the highest response in Northern Star history.

Our culture survey measures people’s experience (what they see and hear) of the STARR Core Values, employee engagement, wellbeing, psychosocial risk factors and identifies how we can strengthen our culture. With such a strong response rate we have an excellent baseline from which to measure the Group going forward.

Gathering this employee data is integral for achieving Northern Star’s strategic objectives. It helps prioritise the activities that will best support an inclusive, engaged, and responsive work culture. The

November culture survey is a baseline assessment to understand our engagement with the STARR Core Values, in a sustainable, meaningful way.

Company-wide and site-specific action plans will be developed by our General Managers and their Management teams, to recognise and celebrate strengths, as well as address areas for improvement.

Actions will include (but aren’t limited to):

1. STARR Actions – engaging and embedding the STARR Core Values through fast feedback, positive reinforcement and reward and recognition.
2. Continued leadership development for supervisors and frontline leaders.

Northern Star’s next culture survey will be conducted in November 2022. We will be able to reassess employee sentiment and engagement and see the effectiveness of the actions taken.

Figure 26 CY2021 Culture Survey Results Breakdown



## Northern Star conducts annual culture surveys to better understand the experience and engagement of our workforce.

### Diversity & Inclusion

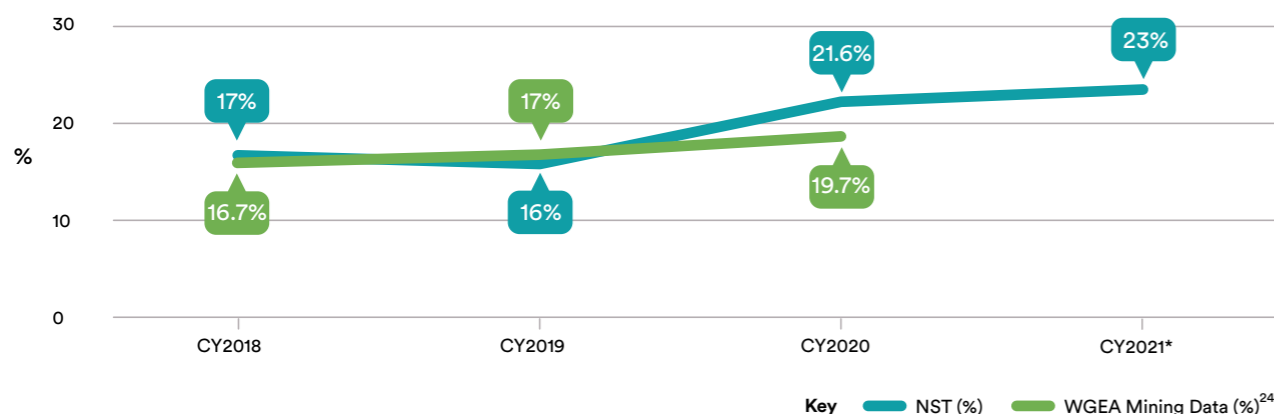
In CY2021, we implemented programs to increase awareness, support minority groups and focus on challenging the status quo. Some highlights include:

- Becoming major sponsors of AusIMM and WIMWA Women in Mining Leadership Conferences.
- Launching a customised Cultural Awareness program that acknowledges the Traditional Owners of the land on which we work.
- Partnering with the Traditional Owner groups to develop On Country education programs.
- Launching TeamINC – Our inclusive teams program
- Sponsoring the Pride Professional Mentoring program for LGBT+ people and allies.
- Introducing paid parental leave for all Australian sites

**“As Northern Star has grown, it’s been fantastic to see new energy being dedicated to creating a more inclusive workplace – one where everyone can feel safe bringing their whole selves to work.”**

Rebekah Smailes, Senior Metallurgist, Kanowna Belle, Kalgoorlie.

Figure 27 Female Participation Rates



### Paid Parental Leave

Northern Star is proud to have implemented a paid parental leave policy across our Australian workforce in October 2021. The Company wants to support all of our employees in having the opportunity to take time away from work to enjoy the special time of welcoming a new child into the family.

Key elements of the policy include:

- Leave entitlements that are gender neutral and recognise the role of both primary and secondary carers.
- Rewarding employee service and loyalty by increasing benefits for longer serving employees. The policy provides for payments of up to 4 weeks for secondary carers and up to 20 weeks for primary carers.

**I’m a parent of three great children and we’ve got quite a young team in the business; I just think it’s fantastic for the Company and its maturity to be able to offer this.”**

Stuart Tonkin, Managing Director

24. The Workplace Gender Equality Agency is an Australian Government statutory agency that promotes and improves workplace gender equality and administers the Workplace Gender Equality Act 2012, including annual mandatory reporting.

- Primary carers are eligible to receive return to work benefits following their return to the workplace to help address superannuation pay gaps and service benefit gaps that currently exist for employees who take time away from work to raise children. Benefits available to our employees include lump sum payments up

to 6 weeks, a top-up of their superannuation contributions and a top-up of long-service-leave entitlements.

Northern Star will review its parental leave policy for its North American employees in CY2022, in line with United States requirements and practices.

Figure 28 Employees who took paid parental leave in CY2021



### Highlight: Impact of Parental Leave Policy

Tim Sanders, Senior Geologist – Resources, has been with Northern Star since May 2016, and Northern Star was very pleased to support him as he commenced paid Parental Leave this year, electing to become the primary carer following the birth of his daughter.

Tim took on the primary carer duties, looking after his 4-year-old son and 6 month old daughter which assisted his partner, Natalia, to return to her full-time employment as a geologist.

Tim was very supportive of the new policy saying that it has been amazing for his family, allowing him and Natalia to focus on the kids without financial stress and reducing the burden on Natalia, who would have otherwise been the sole income earner.

Northern Star is proud of the impact the new Parental Leave Policy is having on the lives of employees and their families and looks forward to the value and diversity it brings to our future workforce.



Northern Star employee Tim Sanders, his partner Natalia and their two children.

**“To other employees thinking of becoming a primary carer – this is the best decision I have ever made. It has allowed me to spend a great amount of time with the kids during these early years”**

Tim Sanders, Senior Geologist

### Growing Opportunity in Mining

Northern Star prides itself on investing in our people and the future of the mining industry. We have created a number of entry pathways into our business which can accommodate people from a diverse range of educational and industry backgrounds.

Northern Star is committed to building and maintaining long term and mutually beneficial relationships with like-minded organisations to provide opportunities for Aboriginal people. We engage with schools, tertiary institutions and organisations that support Indigenous students, and agencies including Clontarf, MADALAH and Shooting Stars.

We have graduate programmes accommodating multiple disciplines including Engineering, Metallurgy, Geology, Surveying and HSEC. This programme is self-driven with a guided workbook to provide structure on learning objectives.

We also offer a vacation program for university students, which runs over the summer and winter holiday periods. Over these short time periods, we provide students with hands on experience to apply their current studies into the workplace environment. Term time casual work often follows, studies permitting.

Our apprenticeship opportunities offer a program that is a combination of structured learning in a classroom and practical experience. Disciplines currently supported include Fixed Plant Boilermaker, Fixed Plant Fitter, Fixed Plant Electrician, Heavy Duty Fitter, Light Vehicle Fitter, Auto Electrician and Underground Electrician.

We also provide entry-level training programs in the Processing, Engineering and Open Pit Mining teams. These programs support candidates who have minimal mining experience and increases the available talent pool in these critical roles. The program provides clear pathways for a career in mining.

Northern Star also provides opportunities for exposure and education of high school age students of different ages and demographics by organising immersive site trips to meet our employees and experience our operations firsthand.

In CY2022 we will continue to explore other trainee opportunities across various disciplines to support internal and external growth of the Company and industry.

**We also provide entry-level training programs in the Processing, Engineering and Open Pit Mining teams. These programs support candidates who have minimal mining experience and increases the available talent pool in these critical roles. The program provides clear pathways for a career in mining.**

Nick Strong, General Manager KCGM



### Providing Opportunities

with onsite education trips for high school students of ages and demographics.



KCGM Apprentice Mobile Plant Mechanic and Clontarf Alumni Tyler O'Brien speaking with Clontarf students at KCGM Operations.

### Reaching Potential

Northern Star recognises that each employee is driven by their own motivations, goals and aspirations and that the best outcome for them and the Company is to help develop our employees to reach their potential in a sustainable way that delivers business results.

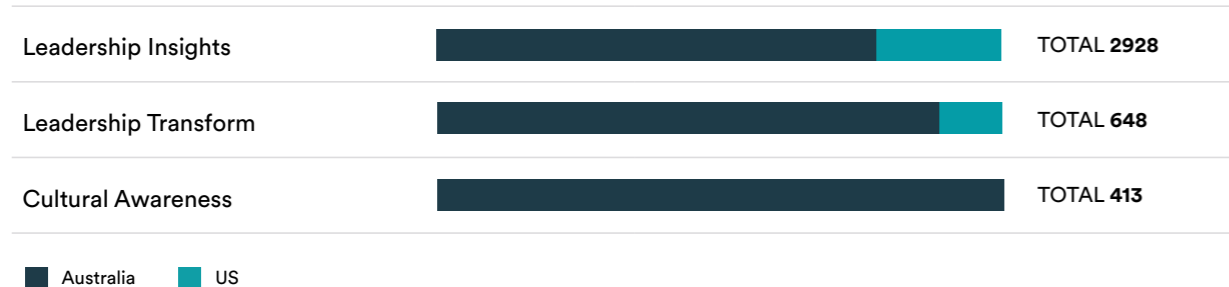
There are multiple career paths inside Northern Star which employees can aspire to including: people management roles and specialist / technical leadership roles. Our people development system has multiple channels including: our annual performance evaluation which 100% of our employees are included in, internal and external leadership and professional development training, events and conferences, cross site and function projects, mentoring programs and targeted on the job experiences. Every employee has the opportunity to develop to their best potential.

Our technical departments such as Geology, Geotechnical and Engineering run internal development days where cross site teams come together to share knowledge, learnings and insights form across our business.

In mining services, we continue to develop best in field technology to develop and grow our people safely, including the introduction of a trial Virtual Reality program. This improves safety and is engaging training for our current and new employees.

We have also streamlined our onboarding and communications processes, by using a centralised system to manage the admin and workflows to help get people onsite smoothly and link them up with a "buddy" to help make their transition to the Northern Star team as seamless as possible.

Figure 29 Development training (hours)



Curtin University Girls Focus on Mining Camp touring KCGM Operations

### Employee Wellness

Northern Star is committed to supporting our people's safety and wellbeing at all times. In CY2021, Northern Star maintained its commitment and extended support to the entire organisation.

Employee Assistance Programs are actively encouraged, with briefings completed at all new sites. In addition to standard counselling sessions, employees can access coaching, face to face and online psychoeducation programs and dietetics. We have continued to grow the utilisation of GoldSTARR, our employee reward and recognition, health and wellbeing hub.

Northern Star is accredited as a GOLD Mental Health First Aid Skilled Workplace. In the last 3 years we have trained over 400 people and are increasing our awareness and skills in supporting good mental health through Mental Health First Aid accredited training with Mental Health First Aid Australia. By supporting our people to undertake this training we help them to provide timely interventions at home and at work to support good mental health with everyone they connect with. The training equips them to provide immediate assistance and encourage their colleagues, family, and friends to seek professional mental health assistance as needed.



In support of our people's mental health and wellness, we also supported the Push Up Challenge, R u Ok Day and World Mental Health Day through challenges and communications across the business. These events are fun but with a serious message around supporting our people and reminding them of our support for their good mental and physical wellness.



Employees engaging in Northern Star's annual company wide Push Up Challenge as part of the global Push Up Challenge, raising awareness and funds for better mental health.

A photograph of two women standing outdoors, looking at a document together. The woman on the left is wearing a bright yellow-green high-visibility jacket. The woman on the right is wearing a dark jacket with green accents and has red glasses perched on her head. They are standing in front of a concrete wall. In the background, there is a green and yellow pickup truck, a picnic table, and trees. The text 'Social Performance' is overlaid on the right side of the image, with 'Social' on one line and 'Performance' on the line below, both in white font with a teal underline.

# Social Performance

Lucy Dorotich, External Relations  
Advisor with KBULG volunteer  
learning about native vegetation.

# Our Social Performance



“Northern Star prioritises responsible environmental and social performance business practices that create strong economic returns for our shareholders, and share value with our stakeholders.”

Mary Hackett, **Chair of the Environmental, Social and Safety Committee**

Northern Star’s Mission is to generate superior returns for our shareholders, while providing positive benefits for our stakeholders through operational effectiveness, exploration and active portfolio management.

This is achieved by understanding existing and emerging community and stakeholder expectations, the needs of the communities around our operations, and the impacts of our operations. This allows Northern Star to make informed decisions on the opportunities to minimise potentially adverse negative impacts and maximise positive social and economic benefits.

We value and seek long-term and trust-based relationships with all our local and broader stakeholder communities; relationships where stakeholders are respected, understood, and better off for having Northern Star operate nearby.

Development and delivery of Northern Star’s social performance strategy is overseen by the Chief Legal Officer & Company Secretary, reporting to the Managing Director and to the Board, and the ESS Board sub-committee, supported by the ESG engagement, legal, business development and social performance teams in the corporate office and on our sites.

## Social Snapshot

# \$697.7M

Spent on procurement within our local communities

# 76%

of total Group procurement spend within WA.

# \$3.5M

Community Investment in CY2021

# 1

Significant community incident (Williamstown)

## Uses of Gold

Northern Star as a significant gold producer is a substantial employer in the two main communities in which we operate, and we are a significant contributor to the local economies.

In addition to the dominant use of gold as an investment commodity, and jewellery (together representing 91% of the demand for gold in CY2021), 9% of global gold demand is used in technology, including medical, dentistry and sustainable development technologies<sup>25</sup>.

Gold is one of the densest of all metals. It is a good conductor of heat and electricity. It is also soft and the most malleable and ductile of the elements, does not tarnish or corrode and is non-toxic.

Because of its high electrical conductivity and inertness, the largest industrial use of gold is in the electronics industry for plating contacts, terminals, printed circuits, and semiconductor systems.

Thin films of gold that reflect up to 98% of incident infrared radiation have been employed on satellites to control temperature and on space-suit visors to afford protection. Used in a similar way on the windows of large office buildings, gold reduces the air-conditioning requirement and adds to the beauty.

Because it is non-reactive and non-toxic, gold has for many years been used in dentistry and medicine. New medical applications are being discovered every year, such as in prostheses where longevity is essential. Small amounts of gold are also injected as a treatment for rheumatoid arthritis and muscle damage, and gold nano particles are being used in the treatment of some cancers.



Gold nanoparticles are also paving the way to more efficient renewable energy technologies. Documented research projects have shown promising results for the use of gold in improving the efficiency of solar panels, more efficient production of hydrogen from water, and even making wind turbine energy conversion more efficient.

Figure 30 Uses of Gold

### Medicine

- Tracing for medical diagnoses
- Surgical instruments
- Medical imaging
- Photothermal therapy
- Targeting for chemotherapy cancer treatments
- Radiotherapy

### Dentistry

- Fillings
- Crowns
- Bridges
- Braces

### Sustainable Development Technologies

- Solar panels
- Carbon reduction catalyst
- Electroreduction of CO<sub>2</sub>
- Stretchable solar panels or fabrics
- Gold nanoparticles to improve fuel cell catalysts

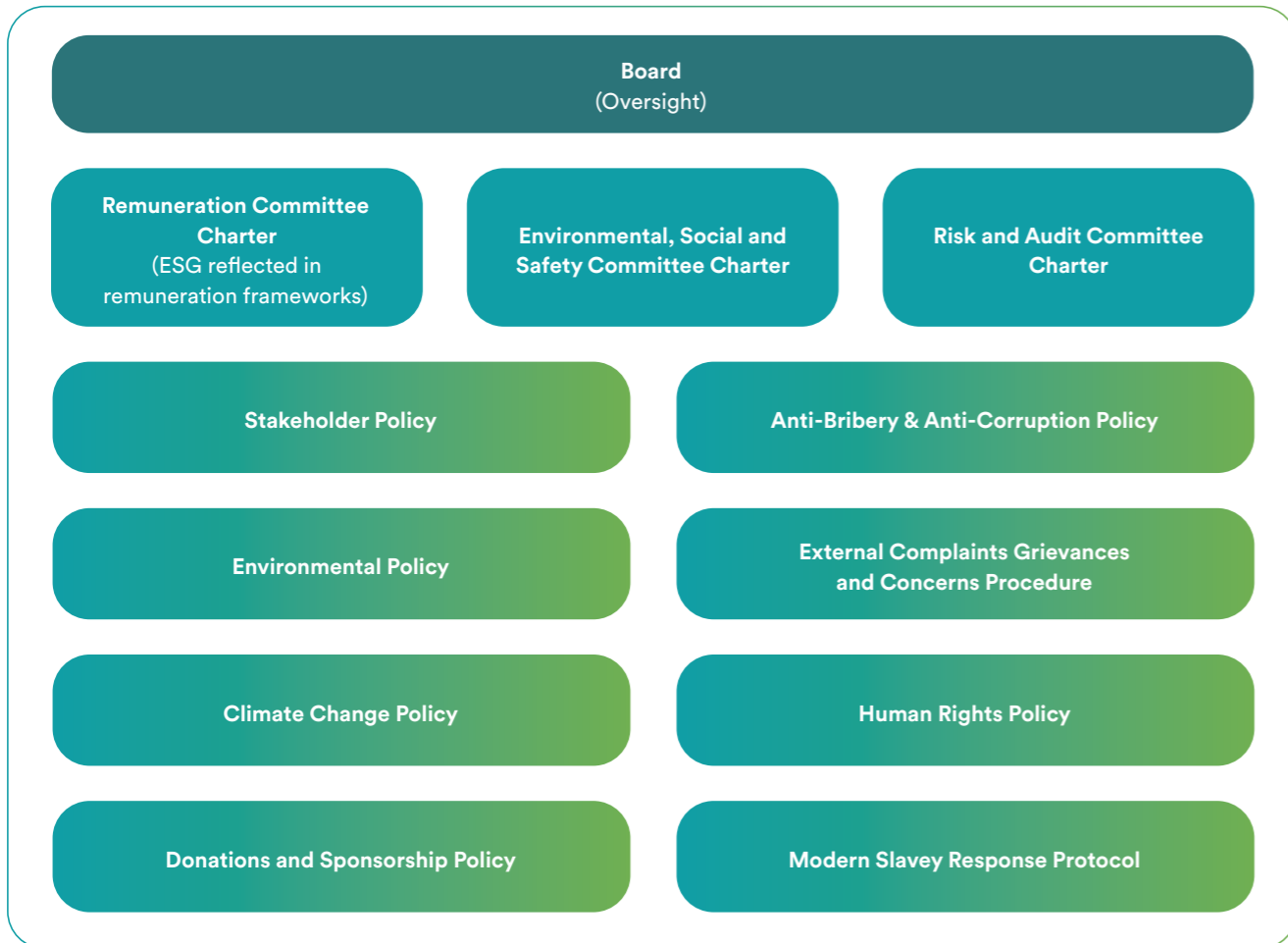
25. World Gold Council Gold Demand Trends <https://www.gold.org/goldhub/research/gold-demand-trends>

### Engagement with our Stakeholders

Northern Star’s corporate governance framework adopted by the Board of Directors includes key policy documents which set out Northern Star’s standards for stakeholder engagement.

Some of these are included in the Northern Star inductions completed by all employees and contractors, to guide all decisions on our sites.

Figure 31 Stakeholder engagement governance framework



### Social Impact Assessment

The International Council on Mining and Metal’s (ICMM) Mining Principle 9. Social Performance, and the related Performance Expectation 9.3: Conduct local stakeholder engagement, requires companies to conduct stakeholder engagement that is based on an analysis of the local context. Commonly this is achieved through an independently facilitated Social Impact Assessment (SIA), where an expert external party is engaged to undertake an engagement process with key stakeholders to identify the social effects of a specific mining project and provide unbiased recommendations of how best to minimise any negative and maximise positive impacts from the mining project.

Northern Star acknowledge this recommendation by the ICMM. We recognise that the data generated by social impact assessments can be a valuable source of information to inform us how we are delivering

against our social performance aspirations and standards, and how we can improve. The findings of these SIA reports are used to prioritise the corporate and sites’ social performance team’s work, targeted to key stakeholder areas of interest, and needs, and maximise the impact of our social performance.

An SIA was conducted in July 2020 at the KCGM Operations in Western Australia, (updating the SIA conducted by the previous owners), and at the Pogo Operations in Alaska US.

Whilst we currently do not conduct SIAs at all of our Australian assets, we can use the findings from the KCGM SIA conducted in 2020 to direct social performance and stakeholder engagement efforts at our other Western Australian goldfields operations.

We review the need to conduct SIAs across all our assets on an ongoing basis.

## Highlight: Social Impact Assessment – Creating sustainable development outcomes for local communities

Northern Star’s footprint in the Western Australian Goldfields region is significant and continues to grow, supporting the sustainability and future prosperity of communities in which we operate. These include the City of Kalgoorlie-Boulder, and Shires of Coolgardie, Leonora, Laverton, and Wiluna.

Located adjacent to the City of Kalgoorlie-Boulder, Northern Star’s KCGM Operations has enjoyed strong relationships with local residents, community organisations, and businesses, developed over 30 years. However, at the time KCGM Operations’ Social Impact Assessment was undertaken in 2020, stakeholder feedback revealed there was uncertainty about future mining activities for the iconic operation, impacting the community.

In 2021, Northern Star commenced discussions with local stakeholders around the organic growth the Group has achieved at the Fimiston Open Pit (Super Pit), with the proposed Fimiston South project to extend KCGM Operations’ life of mine to 2034.

This combined with Northern Star’s increasingly



Northern Star representatives at a GE (Goldfields-Esperance) Business Register event in Kalgoorlie-Boulder, discussing procurement opportunities with Northern Star in the Goldfields.

visible presence within the Goldfields region has contributed to increased certainty about the future of mining activities in the region, and opportunities through Northern Star’s local employment, social investment, and procurement.

## Highlight: Social Impact of Residential Employment

In July 2020, a comprehensive SIA was undertaken for our KCGM Operations to understand the priority impacts, both positive and negative, resulting from our activities on the community of Kalgoorlie-Boulder. Conducted by KPMG Banarra, a specialist human rights and social impact advisory team, the SIA revealed twelve priority impacts. In response, a broad social impact management plan was developed to enhance positive impacts and mitigate potential negative impacts.

Support of local employment was determined to be the highest (positive) social impact resulting from KCGM Operations, with Northern Star’s residential workforce intrinsically linked to the community of Kalgoorlie-Boulder. As revealed through stakeholder feedback, providing employment opportunities for local people creates and sustains shared value outcomes for both the Company and community, supporting sustainable regional development.

Since undertaking the SIA, Northern Star has further promoted residential employment opportunities across our operations within the Kalgoorlie production centre region, actively encouraging

current and prospective employees to relocate to Kalgoorlie-Boulder.



Historical buildings, Burt St, Kalgoorlie-Boulder.



### ‘Local Voices’

Providing the community with easy ways to communicate with Northern Star and provide real-time feedback about our operations is critical to retaining a strong social licence to operate. This is evident through Northern Star’s ‘Local Voices’ program, a community engagement initiative.

‘Local Voices’ provides community members in Kalgoorlie-Boulder and the wider Goldfields’ region with the opportunity to provide anonymous feedback directly to our Company.

Delivered through a series of quarterly online ‘pulse’ surveys, Local Voices helps us to better understand what issues matter most to the Goldfields communities, allowing Northern Star to develop and implement strategies to actively address these.

### Issues and Expectations Monitoring

In order to maintain a broad understanding of emerging social expectations and issues that relate to our business, we regularly engage with our host communities, investors, Indigenous stakeholders, governments and other relevant third parties.

We are active leaders and members in industry representative bodies, including:

- The Chamber of Minerals and Energy of Western Australia (Western Australia)

The results of each quarterly survey are published online, building trust and promoting transparency. The findings of these surveys are publicly disclosed, and can be accessed via the following link: <https://voconiqlocalvoices.com/results-kcgm/>

A detailed ‘anchor’ survey (or baseline) was conducted in 2019 to understand the key drivers of trust and acceptance between the KCGM operations and Kalgoorlie-Boulder residents. These include feeling heard and respected by the Company, as well as responsiveness to community concerns, management of environmental impacts, and social investment survey questions. In future reports we aim to explain the actions taken in response to ‘Local Voices’ feedback and other community concerns raised with us, post merger.

- The Association of Mining and Exploration Company (Australia)
- The Chamber of Commerce and Industry WA (Western Australia)
- The Gold Industry Group (Australia)
- The Alaska Miners Association (Alaska, United States)
- The Council of Alaska Producers (Alaska, United States)
- The National Mining Association (United States)

### Complaints & Grievances

Northern Star has received a complaint in relation to social performance. The responses and proposed solutions are being implemented, as of November 2021.

#### Williamstown (KCGM Operations, Western Australia)

The Company received a petition at our KCGM Operations from 13 members of the Williamstown Residents Committee on 26 March 2021. The petition was in response to an individual blast event which was unusually long in duration at the Mt Charlotte underground mine, causing deep concerns for some residents in Williamstown (a suburb of Kalgoorlie).

Williamstown comprises approximately 100 properties, located close to the Mt Charlotte underground mine that forms part of the broader KCGM Operations. There has been a long history of interaction between Williamstown residents and the previous owners of KCGM over the impacts of mining activity on Williamstown over several decades.

Northern Star became the sole owner of KCGM Operations on 12 February 2021.

In response to the petition, Northern Star initiated a Williamstown resident and landowner engagement process, with the assistance of an independent consultant, to identify possible solutions for the grievances expressed. Financial assistance to relocate

out of Williamstown was identified as a need for many Williamstown residents, due to insufficient demand for Williamstown properties.

In June 2021 Northern Star launched a voluntary relocation assistance program to financially assist residents and landowners should they wish to relocate from Williamstown. Since November 2021, numerous contracts for sale have been successfully negotiated with Williamstown residents and landowners, and property settlements are steadily occurring.

Northern Star’s financial assistance package included the purchase of properties at appropriate prices, removalist and conveyancing fees, a contribution towards duty payable on new homes elsewhere, and other support such as long settlement dates, additional time to remove chattels after settlement, and change-in-circumstances assistance for residents and their families encountering the need for broader assistance in relocating from Williamstown.

During this process it was emphasised that the relocation program is entirely voluntary and will remain available for several years, should more residents decide they wish to relocate from Williamstown.

Northern Star is confident that many more relocations will occur in 2022 under the financial relocation assistance program, based on the number of current contract negotiations.

**In 2021 Northern Star launched a voluntary relocation assistance program to financially assist residents and landowners relocate from Williamstown.**



Heartwalk mural in Kalgoorlie by Western Australian artist Brenton See.

# Indigenous Peoples Statement

Northern Star recognises the traditional rights of Indigenous peoples, and their enduring right to maintain their cultures and customs, and meaningful access to their traditional lands.

We acknowledge that Indigenous peoples are some of the most marginalised peoples around the world, enduring forms of social exclusion and are often under-represented in political decision-making processes.

We consider Indigenous peoples to be key stakeholders and that to thrive as a business, we need to gain and maintain these enduring trust-based relationships.

## Engagement Approach

We commit to complying with all domestic, national, and international laws applicable to our relationships with Indigenous peoples.

Our engagement with Indigenous peoples is aligned with the ICMM Position Statement on Indigenous Peoples and Mining, and our further commitment to uphold the principles of Free, Prior and Informed Consent (FPIC)<sup>26</sup>.

This commitment includes the engagement

## Indigenous Lands

In Western Australia, our operations are either subject to a Native Title determination or are subject to a Native Title claim, under the *Native Title Act 1993 (Commonwealth)*.

In the Northern Territory of Australia, the Central Tanami Project, in which we own a 50% joint venture

This makes the engagement of Indigenous peoples critically important for Northern Star, to better understand Indigenous peoples' enduring and unique connections to their traditional lands and waters, and how we as a business impact that connection.

Northern Star commits to the 2013 ICMM Position Statement on Indigenous Peoples and Mining.

During CY2021 Northern Star invested in new overarching Cultural Awareness Training for all Manager level employees and above, with 413 employees completing the new modules. In addition to this training, we invite our relevant Traditional Owners to deliver site-specific cultural awareness training to our employees and contractors as a site training requirement.

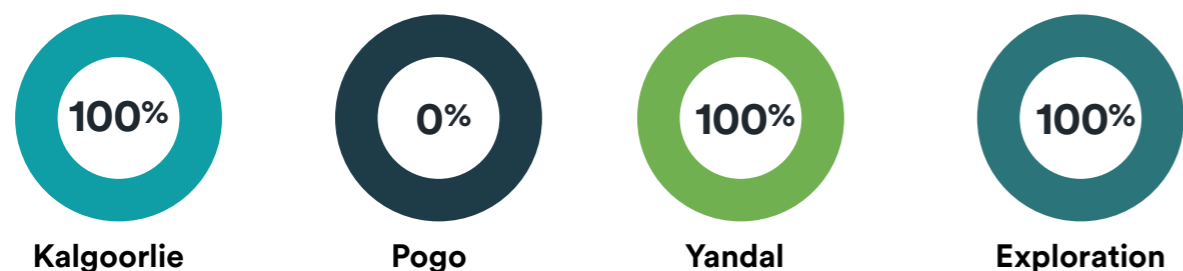
of Indigenous peoples in relation to projects situated on their traditional lands. This allows us to understand any areas of concern, and factor that into our operational planning and priorities.

Northern Star does not intend to draw on approvals granted under Section 18 of the *Western Australian Heritage Act (2018)* and we are confident that strong protection for Aboriginal heritage is being provided in a clear process for project approvals and other activities.

interest, is located on freehold Indigenous land, under the *Aboriginal Land Rights Act 1976 (Northern Territory)*.

The Pogo mine in Alaska US is located wholly on State land.

Figure 32 Encroachment on Indigenous Lands<sup>27</sup>



% Encroachment of tenement area on Indigenous Land per production centre

26. As defined by the United Nations <https://www.fao.org/3/i6190e/i6190e.pdf>.

27. Indigenous land is that land covered by a registered or determined Native Title Claim as defined in the Australian Government's Native Title Act 1993 or the Alaskan Government's Alaska Native Claims Settlement Act 1971.

## Agreement Making

Northern Star commits to agreement making processes with all Indigenous peoples whose land we operate on, and who hold relevant legal Indigenous land tenure as awarded by the relevant State, Territory or federal government.

In Australia, this commitment extends to all Aboriginal first peoples who have either a determined or registered Native Title Claim under the *Native Title Act 1993 (Commonwealth)* or recognised freehold tenure under the *Aboriginal Land Rights Act 1976 (Northern Territory)*.

As part of our agreement making process, Northern Star aims to enter into land access and heritage protection agreements with Indigenous peoples on whose land we operate, to:

1. Identify the process for engaging Indigenous Peoples on proposed activities

2. Seek their feedback on proposed activities
3. Reach agreement on what mining or exploration activities can occur on the land
4. Agree on how Northern Star will undertake those activities
5. Set parameters for benefits that will be delivered to the Indigenous peoples in return for the mining or exploration activities proceeding.

Northern Star upholds the FPIC principles within all negotiations, which are always conducted in good faith.

Where parties consider existing or inherited agreements to be outdated and not in line with contemporary agreement conditions, Northern Star will consider entering into agreement modernisation discussions, and in line with the new heritage protection legislation in Western Australia.

## Heritage Management

Northern Star understands that physical and spiritual cultural heritage is critically important to Indigenous peoples and provides a connection between their past and contemporary existence.

Heritage related incidents  
Heritage related infringements  
Cost of heritage related infringements (\$)

## Our overarching process for managing heritage risks

1

Northern Star's cross-functional team consists of Legal, Social Performance, Environment, Geology and Mining who are responsible for working between project and production teams and Traditional Owners to understand where a planned activity may adversely impact a heritage site, in advance of the ground disturbance occurring.

2

If this engagement process indicates that an area of heritage value may be adversely impacted, representatives of the team will further engage with the relevant Traditional Owners and the broader project team to evaluate means of avoiding the impact, acknowledging and incorporating the views of Traditional Owners.

3

If the adverse impacts to the heritage site or area cannot be avoided, and the Traditional Owners do not consent to the activity proceeding, then Northern Star will not proceed with the activity in the manner proposed.

### Indigenous Procurement

Promoting and encouraging Indigenous business through capacity building and direct procurement is a significant means of supporting the Traditional Owners on whose land we operate.

Key performance indicators (KPIs), set by the Board in the remuneration framework for the Group senior leadership team on all sites, include the development of sustainable Indigenous business supply contracts of at least \$20M/pa spend, by the end of FY24. This KPI is intended to signal the

importance of Indigenous procurement to the Board and assist to influence behaviours in relation to procurement decisions.

Northern Star is currently working in partnership with the Goldfields Aboriginal Business Chamber and the Australian Government to develop a sustainable and culturally appropriate framework to increase the number and value of Indigenous supply contracts

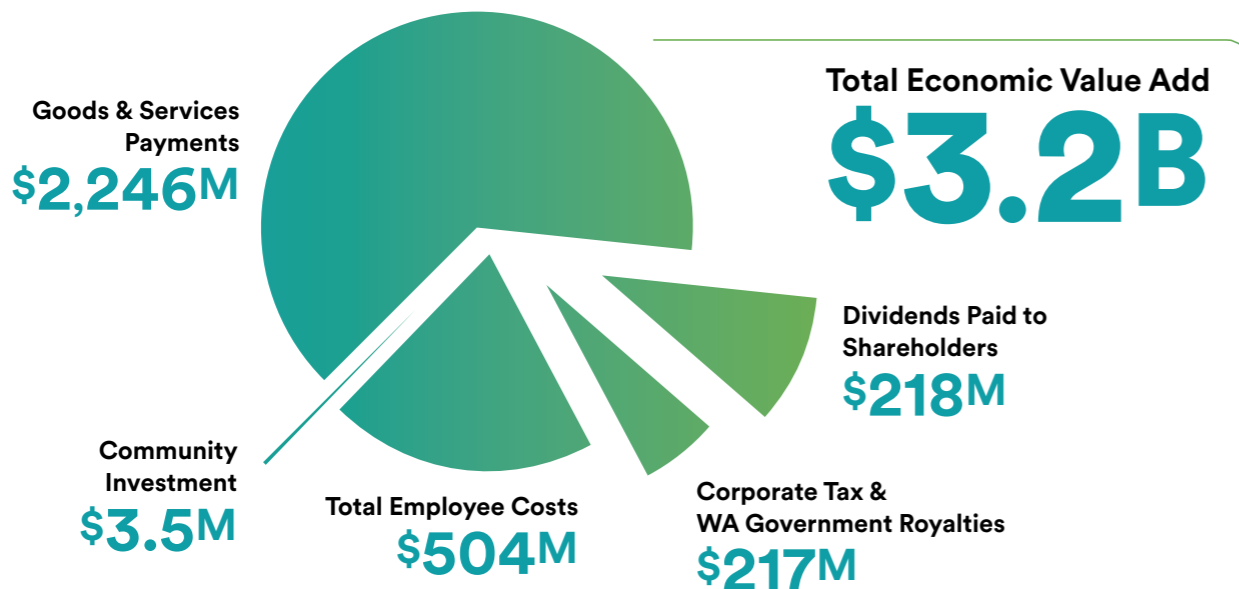
### Community Investment

Recognising our responsibility to contribute back to society, we strategically invest in our communities through financial and in-kind means. Our ties to our communities are strengthened by our employees, contractors and their families who live and work in our operating areas, and through our relationships

with education bodies, NGOs, and charities within these areas.

Northern Star has already engaged with several community partners in relationships that will provide the regions and communities far reaching and long-term benefits for current and future generations.

Figure 33 Economic Value Add



Northern Star's Karlkula truck featuring the work of Goldfields artist Danielle Champion, Kalgoorlie.

### Donations & Sponsorships

We are committed to working with our local and regional communities to achieve mutually beneficial partnerships and sustainable long term social benefits.

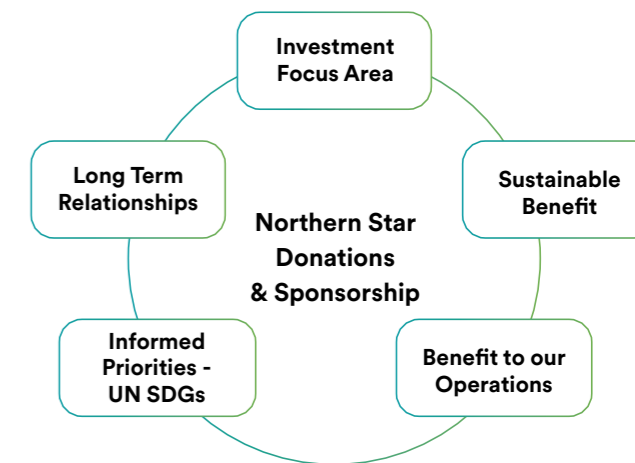
In CY2021 Northern Star's Environmental, Social and Safety Committee reviewed and updated Northern Star's donations and sponsorship applications regime, with updated guidelines and application form to assist applicants in understanding our criteria for donations and sponsorships which is applied consistently across all operations.

Alignment with the UN SDGs is the primary gateway criteria for all donations and sponsorship applications at all operations, and where possible we seek to achieve a balance on an annual basis, taking in account the local and regional improvements proposed by applications in the following focus areas:

- Community & Inclusion
- Health & Wellness
- Environment
- Indigenous Advancement
- Education & Development

Dedicated budgets at site level directly support community investment where it is most relevant to each site, ensuring our funding opportunities are shared across our regions, and that decisions are informed by local and regional priorities and knowledge. In addition, on a regular quarterly basis a committee in the Corporate office in Perth, including the Chair of the ESS Committee, decides on applications and proposals; those exceeding \$100,000pa and multi-year commitments require Managing Director approval.

Figure 34 Donations & Sponsorship cycle



**“We are committed to working with our local and regional communities to achieve mutually beneficial partnerships and sustainable long term social benefits.”**

Sequoia Eagles, Principal-ESG

Figure 35 CY2021 Donations & Sponsorships Committed Funds Across All Sites and Corporate














### Contributing to our communities

Northern Star was proud to paint our new PC8000 excavator bucket and counterweights at KCGM pink in support of breast cancer awareness, and also make a financial contribution to Breast Cancer Care WA.



During CY2021 Northern Star are proud to have established or renewed long term partnerships with:

 <p>All abilities programs across regional WA</p>	 <p>Moorditj Yorga Scholarships Western Australian School of Mines (WASM)</p>	 <p>Gold Industry Group West Coast Fever, Shooting Stars &amp; Netball WA</p>
 <p>Goldfields Indigenous Tertiary Scholarships</p>	 <p>YMCA Kalgoorlie Childcare &amp; Youth Programs</p>	 <p>Domestic Violence assistance for rural and regional WA</p>
 <p>Medical, Dental and Urgent Air Ambulance support for Regional Western Australia</p>	 <p>Children's Health Research</p>	 <p>Eliminating litter and increasing recycling in Alaska</p>
 <p>Hockey Club Fairbanks</p>	 <p>Tanami Regional Biodiversity and Social Research Project</p>	 <p>National Alliance on Mental Illness</p>

We were also proud to contribute financially and in-kind support to numerous other organisations, including but not limited to:

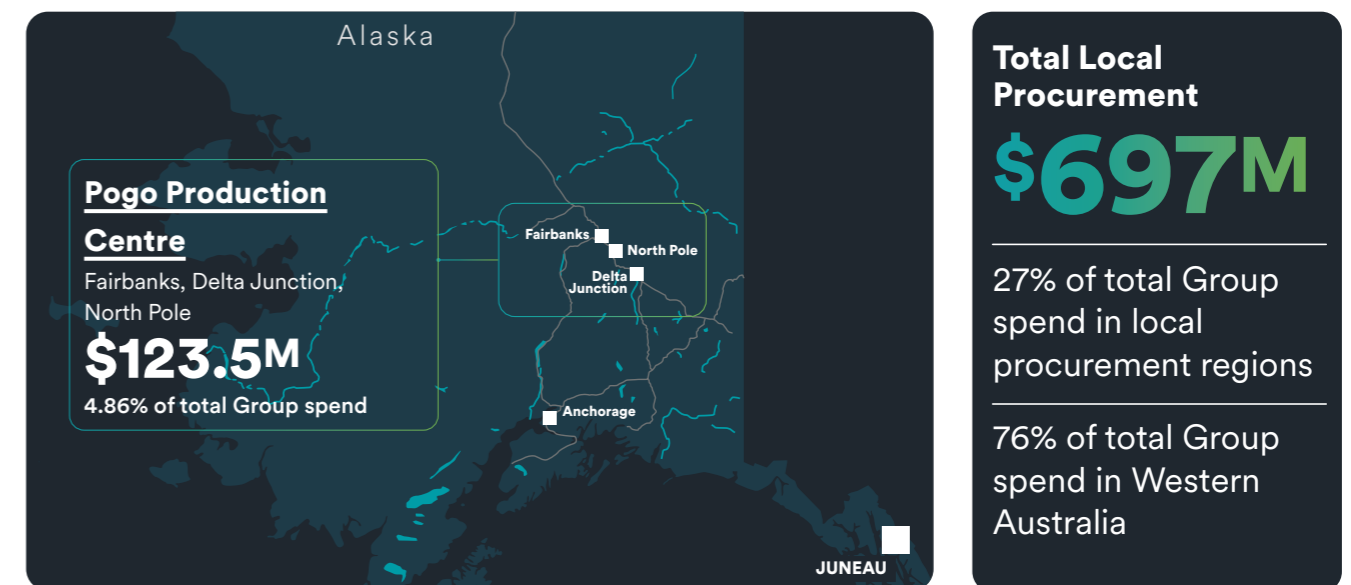
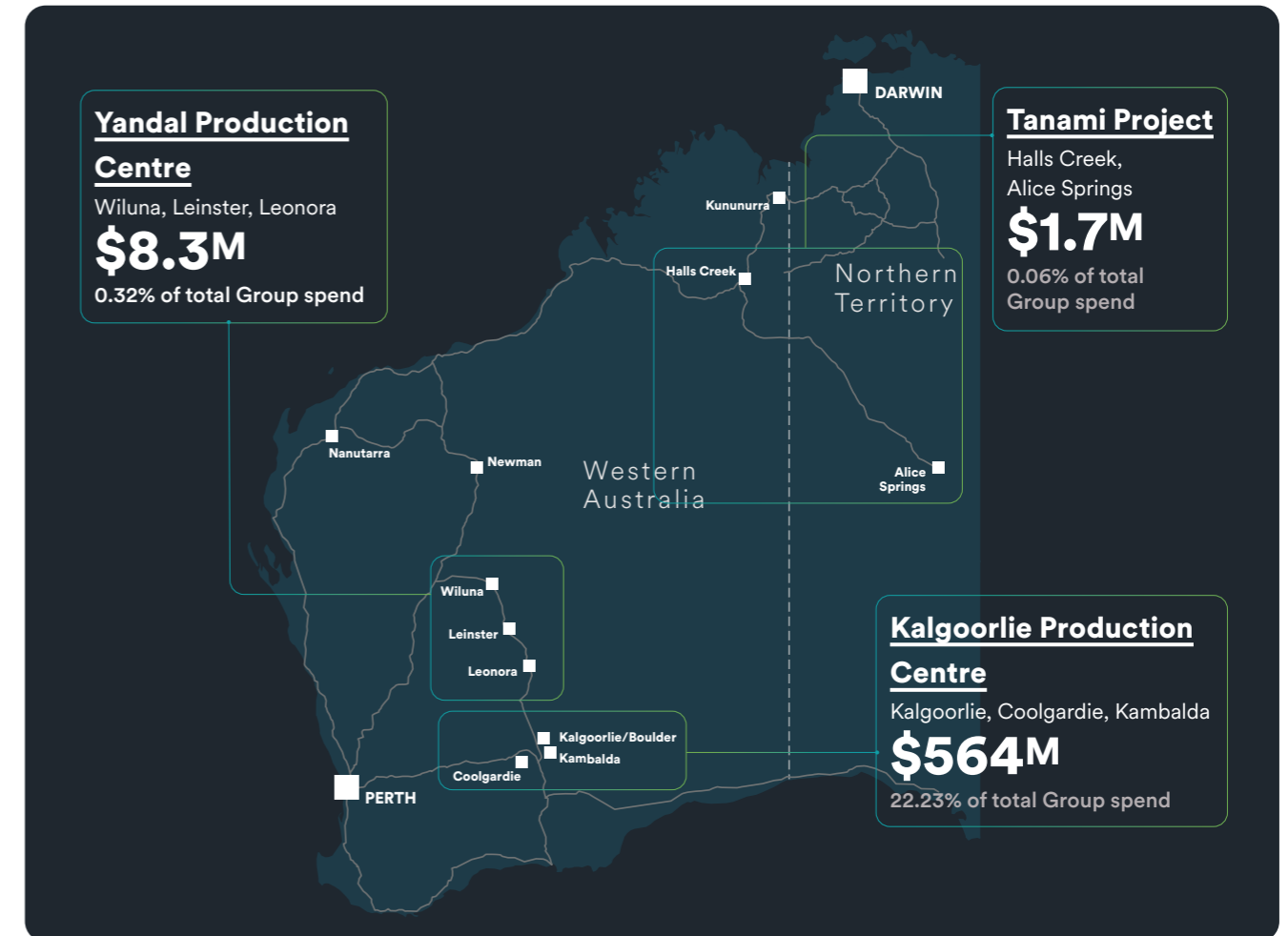
- Clontarf Foundation
- Starlight Children's Foundation
- Breast Cancer Care WA
- Alaska Miners Association
- Harry Perkins Medical Institute
- Pride Professionals
- Teach Learn Grow
- Share the Dignity
- University of Alaska
- Tarlka Matuwa Piarku Aboriginal Corporation
- Ngangganawili Aboriginal Health Service
- Miners Promise
- Children's Charity Network
- Various local schools and colleges
- Foodbank WA

**Local Procurement**

Supporting suppliers and businesses within the regions in which we operate continues to be a focus for Northern Star. We consistently consider the positive impact of supporting local businesses when assessing procurement opportunities to ensure we maximise opportunities within our local supply chains.

The local procurement areas are centred around our production centres and major exploration regions; Kalgoorlie, Yandal, Pogo and Tanami. For detailed information on state, country and global spend, refer to the Supply Chain section on page 28.

**Figure 36** Local procurement by region



## Highlight: Aboriginal Trainee and Mentor Program, KCGM, Western Australia



KCGM Operations 2021 Trainees touring the Fimiston Processing Plant during their Induction Week, and Drill and Blast Trainee Bree Bugeja with her team member in the field.



Providing Aboriginal people in the Goldfields with pathways to meaningful employment in the mining industry was a focus for KCGM Operations in 2021 with the launch of the site's Aboriginal Trainee and Mentor program. In partnership with the Australian Aboriginal Mining Academy, Northern Star welcomed Trainees in multiple areas across the Operations, including Surveying, Geology, Maintenance Planning, and Drill and Blast.

Through an expression of interest process, host teams across KCGM Operations were identified to create a diverse range of entry level roles offered as 24-month Traineeships. Trainees are supported to achieve a qualification relevant to their role, as well as provided with ongoing training and development through the Australian Aboriginal Mining Academy. Experienced Aboriginal employees across KCGM Operations have also been supported to act as mentors for Trainees, encouraging knowledge sharing, retention, and team development.

## Highlight: Increased Capacity for Mental Health Resources, Pogo, Alaska US

In 2021, Northern Star Resources, in partnership with other interior mines in Alaska, provided funding for a full-time executive director position for National Alliance on Mental Illness (NAMI), a grassroots mental health organization that works with communities to educate and encourage support for community members impacted by mental health challenges.

As a previously all volunteer organization, the \$45,000 USD per year donation with a three-year commitment will help create a self-sustaining position and increase capacity to achieve their mission and support those in crisis.

NAMI's mission became increasingly important as the local Fairbanks community, and the world, saw a rising need for mental health care and resources during the COVID-19 pandemic.

Mental disorders have been identified as a barrier to sustainable development and crosscuts many UN SDGs. Social determinants, such as poverty, war, violence, hunger, and inequality, are risk factors for mental health and increase the chances and severity of mental illness. Investing in mental health campaigns will help provide resources, prevent suicides, reduce stigma and improve treatment – necessary steps in reaching our global initiatives.



## Highlight: Regional STEM Pathways, KCGM, Western Australia



Northern Star presenting 2020 Apprentice of the Year at Central Regional TAFE's Major Award Presentation.

Northern Star routinely invests in Science, Technology, Engineering, and Maths (STEM) pathways and engagement to ensure young people in the communities we operate are equipped for the jobs of the future. This includes outreach activities and career presentations in partnership with local schools, as well as site tours to expose students to the range of careers available in mining.

A highlight for 2021 was hosting Clontarf graduates on-site at our KCGM Operations for their 'Mining and Land Camp', encouraging young men to feel confident and capable of pursuing further education, training, or employment post-secondary school. Northern Star Apprentice Mobile Plant Mechanic and Clontarf Alumni Tyler O'Brien spoke to the students, encouraging the group to pursue their goals and consider the range of career pathways available within the mining industry.

## Highlight: Supporting Cultural Heritage, Pogo, Alaska US

As part of our commitment to cultural and national heritage we have conducted ongoing cultural surveys on heritage sites along the access road of our Pogo Operations. These efforts have contributed to several designations in the National Register and have also supported the local University archeology and anthropology students.

Archaeology provides a unique insight into the relationship between preservation of cultural heritage and preservation of humanity and our planet. Archaeologists play a pivotal role in the communication and education of sustainability. Northern Star is proud to support efforts to preserve, protect and conserve cultural and natural heritage.

**Archaeology provides a unique insight into the relationship between preservation of cultural heritage and preservation of humanity and our planet.**

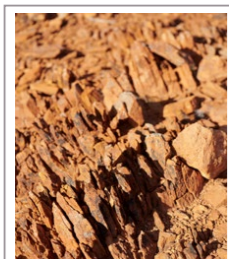
# Modern Slavery

Northern Star condemns all human rights abuses, including modern slavery practices in all of its forms and recognise our role in advancing the human rights of all people.

Modern slavery encompasses human rights violations including human trafficking, slavery and slavery-like practices such as forced labour, debt bondage and discriminatory employment practices.

Northern Star recognises that modern slavery is a business risk for every industry and sector, which has potentially devastating consequences for victims. We are committed to upholding and pursuing lawful, moral and ethical practices in our business operations and in our dealings with suppliers, stakeholders and the local communities in which we operate.

We acknowledge that modern slavery in our supply chain is a business risk that requires constant action to identify and mitigate. Northern Star takes meaningful steps to attempt to detect any human rights violations in our supply chain. We endeavour to maintain constructive healthy relationships with our suppliers, which assists us to maintain responsible and transparent supply chains.



**View our FY21 Modern Slavery Statement**  
Visit: [nsrltd.com](https://nsrltd.com)

The Company's latest Modern Slavery Statement can be found on our website at: <https://www.nsrltd.com/investor-and-media/asx-announcements/2021/august/fy21-modern-slavery-statement>.

Since the release of the FY21 Modern Slavery Statement we have:

- Developed and implemented a corrective action plan to address human rights violations of varying degrees, identified in third-party audits.
- Completed deeper reviews of suppliers whose 2020 survey responses raised risk flags based on the industry of operation, product or service procured and jurisdiction of supply.
- Consulted an Australian national industry working group to evaluate how companies of varying sizes and means in the energy and resources sector in Australia are managing their risk assessment process.
- Updated policies, procedures and standards, and contracts, to reflect requirements of the Company's Human Rights Policy, Supplier Code of Conduct and Purchasing Policy which were adopted during FY21.
- Developed and rolled out bespoke Anti-Slavery Australia modern slavery training to the Company, with the assistance of the University of Sydney's Faculty of Law.
- Selected three high-risk suppliers for third-party audits in CY2022 based on their responses to the supplier survey.
- Included modern slavery risks as part of our wider ESG risk register.

**Northern Star condemns all human rights abuses, including modern slavery practices in all of its forms and recognise our role in advancing the human rights of all people.**

## Supplier Focus

In CY21 focus was placed on integrity of data, and data collation, in addition to developing a deeper understanding of our suppliers and supply chains as a result of analysis of the data. Supplier surveys are a key tool we use to gather data and detect risks of modern slavery within our business. In CY2021 we increased the data significantly as a result of 30% of the approximately 2,807 suppliers engaged by Northern Star responding to our supplier survey.

Although no instances of modern slavery were detected from the CY2021 supplier surveys responded to, in July 2021 we appointed independent third-party expert supply chain auditors to conduct on-the-ground audits of three suppliers that were identified as high-risk within our supply chain. Two of the suppliers were based in Australia, and the third supplier was based in India, where the audit involved inspections of three separate facilities.

After the physical audits were completed, a list of follow-up action items was provided to each supplier allowing that supplier the opportunity to rectify the modern slavery risk areas identified such as, employment conditions, pay, machine safety, fire safety, and chemical and hazardous material management. Supply continued uninterrupted during this time. During CY2021 the high-risk supplier we identified in India has implemented all but three follow-up audit actions, including:

- More timely payment of wages to ensure employees are paid within 7 days (as opposed to currently where payment is made on the 8th day).

- Better implementation of the approved and documented wages management processes and procedures.
- Periodic assessments of its management system in order to identify improvement opportunities e.g. conducting internal audits of health and safety systems.

Completing the follow-up actions has increased the supplier's score from 60% to 95% bringing that supplier out of the high-risk category with results now exceeding global, industry and country averages. Work with this supplier will continue to ensure progress is made towards implementing the three outstanding follow-up actions.

The supplier surveys and third-party audits have equipped us with more accurate data about our suppliers and allows us to make meaningful change with improved detection, assessment, and reduce the risks of modern slavery within our business.

With the larger amounts of survey data gathered in CY2021 we were able to collate an improved snapshot of where the modern slavery risks are within our operations and supply chain, and focus our efforts in the most appropriate areas. This snapshot is depicted in Figure 38.

Border restrictions on exiting and entering Western Australia imposed by the WA State Government have not significantly impeded supply chain due diligence, due to the availability of local independent third-party auditors with detailed knowledge of employment and working conditions in their jurisdictions.

Figure 37 Suppliers surveyed and engaged



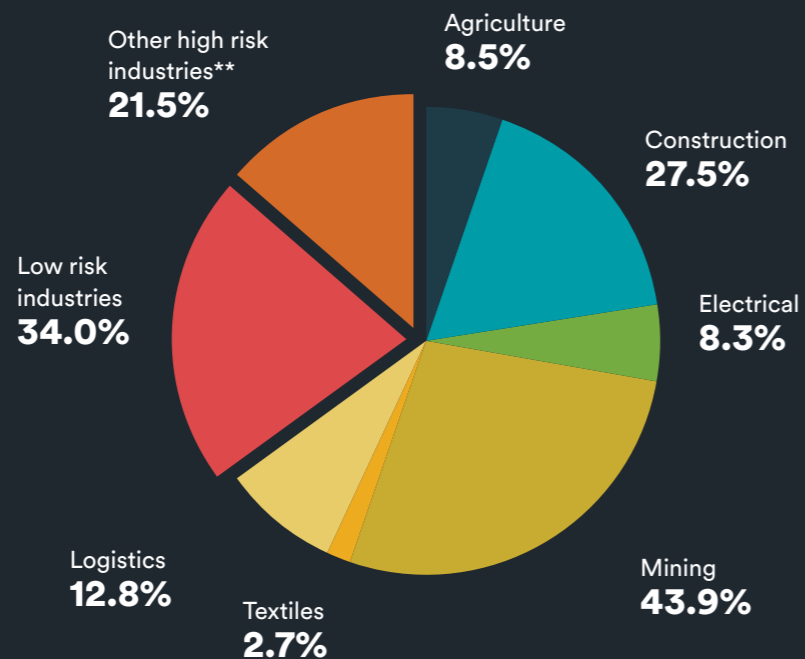
Figure 38 Supply Chain Snapshot

**Supply Chain Snapshot**

Northern Star's potentially high-risk\* goods and services

- PPE
- Transport/Logistics
- Digital Devices
- Facilities Management

In our second Modern Slavery Survey, conducted in late 2020, we asked our suppliers to self-select all industries in which they operate (out of the industries which the Australian Border Force consider present a significant risk of slavery and human trafficking). The results are shown in this chart.

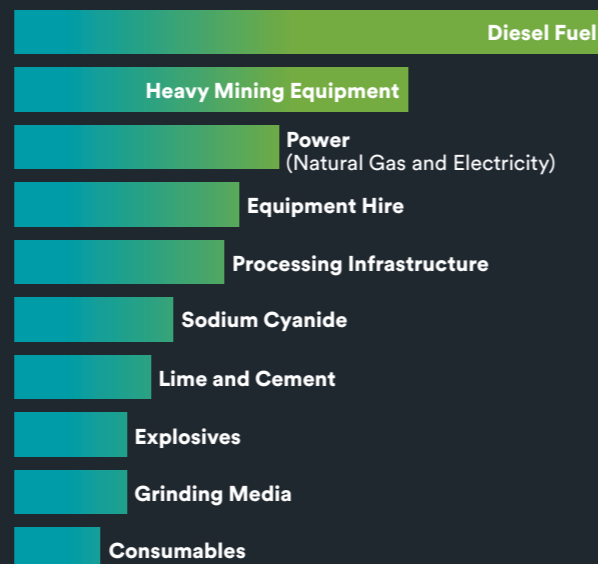


\* Industries which present a significant risk of slavery and human trafficking  
 \*\* Includes fishing, forestry, healthcare, hospitality and cleaning.

**FY21 Top 10 Services Procured by Spend**



**FY21 Top 10 Goods Procured by Spend**



**Future Action**

In the FY21 Modern Slavery Statement we highlighted actions Northern Star will be implementing in future to further address the risks of modern slavery found in our operations. These include:

- Assessing and reporting on completion of our modern slavery training module by our chosen suppliers and employees.
- Tracking employee understanding of modern slavery risks to assess the effectiveness of our training and awareness initiatives.
- Continuing to administer the supplier survey to our suppliers and work with them to address any issues identified.
- Conducting further audits of identified high-risk suppliers.

- Implementing a formal modern slavery risk review process.
- Considering incorporating information about modern slavery within our Company-wide inductions.
- Rolling out our modern slavery training module to all of our suppliers.
- Commence supply chain mapping and database improvements for risk assessments, and more efficient action to detect and eliminate modern slavery risks in our supply chain.

The results of the above actions will be disclosed in the FY22 Modern Slavery Statement along with updated data demonstrating Northern Star's progress and commitment towards advancing the human rights of all people and reducing the risks of modern slavery in our business.

**Advancing Human Rights**

Northern Star has committed to a three year donation program with Destiny Rescue, a global charity dedicated to the rescue of children from the sex trafficking and sex work industry in Southeast Asia. Destiny Rescue plans and conducts raids and individual rescues of children who are enslaved in the sex industry or are being trafficked for that purpose, with some border patrols established to identify children at risk from trafficking.

After being rescued by highly trained operators, often with police and military backgrounds, the children are reunited with their families or cared for

in safe places, educated and given meaningful lives free of forced labour in the sex industry.

Destiny Rescue also conducts education and awareness programs in Australian schools and workplaces, to reduce the commercial exploitation of children in the global sex industry.

Northern Star supports this human rights charity, given the proximity of the rescue nations to Australia, and the impact that education and awareness could have to eliminate commercial exploitation of children for sex.

**Highlight: Current work of Destiny Rescue**

Destiny Rescue reports that over one million children are exploited by sex trafficking with 70% of those children coming from the Asia Pacific region. The commercial exploitation of children is estimated to generate \$11 million every hour, equating to \$99 billion each year.

Established in 2001, Destiny Rescue currently works in nine rescue nations, including Cambodia, Thailand, the Philippines, Uganda, Nepal, and the Dominican Republic – and several other undisclosed locations fighting against child sex trafficking and the commercial exploitation of children.

Since 2011, Destiny Rescue's trained rescue agents have successfully rescued over 8,000 individuals, mostly children under the age of 18. In 2022 they aim



to rescue a further 3080 children and grow these numbers by 35% annually over the next 5 years. By 2032 they hope to have rescued 100,000 children from sexual exploitation and trafficking and help them stay free.

To find out more about Destiny Rescue visit their website: <https://www.destinyrescue.org.au/>



Kellie Carter, Senior  
Environmental Advisor,  
Thunderbox Operations,  
Yandal

# Environmental Performance



# Environmental Performance



“Our corporate and site teams consistently strive to improve Northern Star’s environmental performance.”

**Karina Tedesco, Environment Manager**

**N**orthern Star values the diverse environments in which we operate, and we are committed to ongoing demonstrated performance improvements in our stewardship of these important ecosystems.

Our Environmental Policy, Global Standards and Environmental Management System (EMS) provide

a framework to facilitate our management and protection of the natural resources we are proud to be given access to. Targeted management plans are developed to provide additional guidance on site and region-specific requirements. These documents and processes are regularly reviewed and updated to ensure proactive and continual improvement, and adaptation to new issues or risks that arise.

**This year we have significantly strengthened our environmental management capability through expanding our corporate and site-based teams.**

Following the merger with Saracen in February 2021, we engaged an independent third-party consultant to conduct a full assessment of our corporate and site EMS in terms of alignment and application. This allowed us to better understand areas for improvement. The assessment also incorporated a gap analysis against the ISO14001:2015 Standard to ensure our EMS is aligned to the to the Standard's requirements.

This year we have significantly strengthened our environmental management capability through expanding our corporate and site-based teams. This has included expanding Northern Star’s graduate program to environmental professionals, bringing on three environmental graduates to our sites. We have focussed on fostering collaboration between our expanded corporate and site teams, to encourage cross transfer of invaluable skills, knowledge and experiences when faced with challenges new to their work areas.



Janine Cameron, Closure Specialist with Andrew Bell, Rehabilitation Supervisor and Darcy Chaplin, Rehabilitation Operator at KCGM, Kalgoorlie.

## Environmental Snapshot

0

Number of regulator fines for environmental incident/non-compliance

0

Value (A\$) of regulator fines for environmental incident/non-compliance

0

Number of materially adverse environmental incidents<sup>28</sup>

59%

Percentage of waste sent for recycling (excluding waste rock and tailings)

28. Materially adverse is considered to be any with a consequence rating of moderate or above when rated according to the Northern Star risk matrix

## Biodiversity

As detailed in Appendix B, Northern Star's Operations are located in a variety of natural environments, each with its own unique biodiversity values. Our Biodiversity Management Global Standard provides the guidance for managing biodiversity across all of our operations, with supporting plans and procedures developed at a site level to address issues specific to each site.

To strengthen our understanding and manage potential impacts to biodiversity, flora and fauna surveys are undertaken in areas of proposed direct impact and surrounding areas prior to any disturbances. These surveys provide information on the biodiversity values surrounding our operations which can be included in site and project risk assessments, and assist in our general understanding of biodiversity values within a region

During CY2021 operations within our Kalgoorlie Production Centre identified two species of butterfly thought to be locally extinct. The information surrounding these butterflies is highly sensitive and Northern Star has been working closely with our regulators to ensure this important information is

maintained with the utmost integrity. Due to the significance of their discovery, we are currently reassessing our planned projects in the area. Further surveys are planned over a wider area in CY2022, to gain a greater understanding of the possible wider extent of the populations. Details of these butterfly species have been omitted from Appendix B, which provides a summary of the identified biodiversity values at each of our sites.

All clearing works are carefully managed with internal Disturbance Permits required prior to any clearing. These permits cannot be issued without environmental personnel conducting relevant checks to ensure biodiversity values are protected.

During exploration works, our teams minimise clearing of trees where possible when creating exploration tracks. Exploration works are then rehabilitated within 6 months of completion of works. This a legislative requirement in WA which we have extended to Pogo and the Northern Territory.

At Pogo, helicopters are used to access areas for exploration, reducing the requirement for clearing tracks.

## Highlight: Malleefowl Monitoring at Carosue Dam Operations

The Malleefowl (*Leipoa ocellata*) is a native Australian stocky ground-dwelling bird similar in size to a large chicken. It has distinctive markings and is recognised for the large nesting mounds it constructs during breeding season. Populations of Malleefowl have declined significantly throughout Australia since European settlement and continue to decline due to threats including habitat destruction, introduced predators (foxes, dogs, cats), competition for resources, and fires. Climate change is also an increasing threat to Malleefowl populations as these animals not only have specific habitat requirements but also rely on specific seasonal conditions for successful breeding.

Northern Star has developed a Malleefowl Monitoring Program to be conducted by suitably trained personnel on an annual basis at Carosue Dam. The program aims to collect and collate Malleefowl monitoring data, to allow for the interpretation of breeding density trends in relation to management practices and environmental variables. The results of the program will be provided to the National Malleefowl Monitoring



Kiera Mews, Environmental Specialist, monitoring a malleefowl nest

Database, contributing to an understanding of management actions that are most beneficial to Malleefowl conservation throughout Western Australia.

## Reclamation & Closure Preparedness

Northern Star has closure and reclamation plans at each our operations, developed in accordance with our Reclamation and Closure Preparedness Global Standard and approved by regulators in each region. These plans are regularly reviewed in conjunction with the financial provisioning required for the eventual closure of each site.

In CY2021 we engaged an independent external resource to undertake a detailed analysis and update of our closure provisioning across our current portfolio of assets. This included reviewing estimates for salvage and demolition works, landform design, revegetation, and ongoing monitoring to ensure that progression towards achieving closure criteria can be demonstrated.

Reclamation and closure works present an opportunity to engage our local Indigenous groups to assist in land management practices. Utilising the

knowledge of Indigenous Peoples can assist in sites achieving the closure criteria set out in their closure and reclamation plans. Our Bronzewing Operation within the Yandal region currently engages with a rehabilitation contractor owned by members of the Kultju native title group to complete exploration rehabilitation. We are investigating options at our other operations for similar partnerships in CY2022.

During CY2021 Northern Star saw a significant step up in our overall disturbance footprint as can be seen from Tables 10 and 11 below. This increase is attributed to the acquisition of additional assets from the merger with Saracen. In particular the increase in open pit operations, such as Thunderbox, Porphyry (part of Carosue Dam Operations) and acquiring 100% control of the KCGM Operations, which typically have a higher level of surface disturbances.

Table 10 Rehabilitation and land disturbance across our operations<sup>29</sup>

Rehabilitation and land disturbance (ha)	CY2021	CY2020	CY2019
Rehabilitation completed	199	>61	>130
Land disturbed	674	-	-

Table 11 Land disturbance summary as at 31 December 2021

Land disturbance (ha)		Land cleared	Land rehabilitated
Kalgoorlie	Carosue Dam Operations	203	31
	Kalgoorlie Operations	52	45
	KCGM Operations	28	0
Yandal	Jundee	266	60
	Thunderbox	95	26
Pogo	Pogo	19	0
Exploration	Paulsens	3	0
	Tanami	7	37
<b>TOTAL</b>		<b>674</b>	<b>199</b>

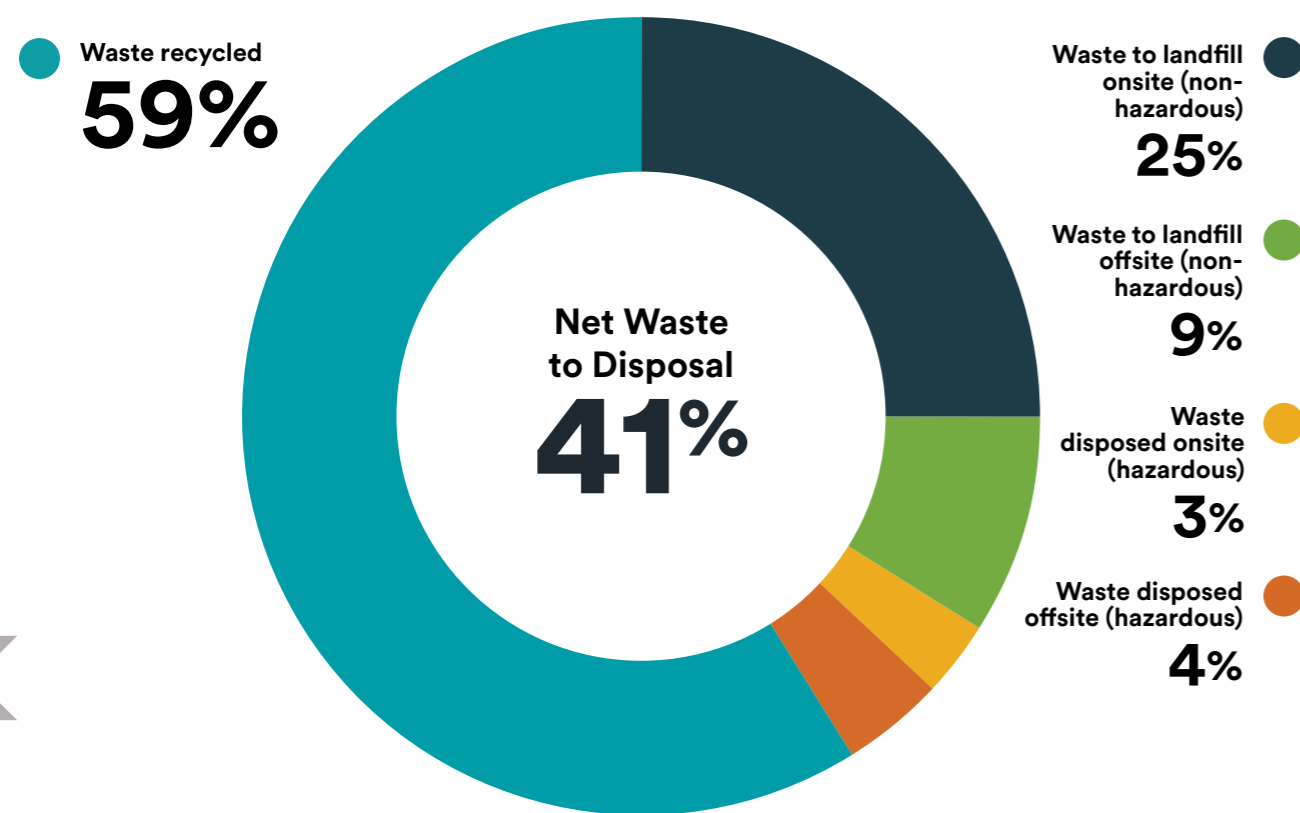
29. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021.

### Waste Management

Our efforts to minimise and manage waste across our operations are guided by our Waste Management Global Standard, which places a focus on reducing, reusing and recycling as priorities

for waste management. Treatment and disposal of waste products into landfill or incineration facilities should be a final option considered.

Figure 39 Distribution of Waste (Excluding Waste Rock and Tailings)



### Highlight: Waste Management Onsite

Each of our sites frequently considers additional opportunities to recycle materials where possible, reducing overall waste production. The increased collaboration between corporate and site environmental teams has helped to bolster recycling programs through knowledge sharing and consolidation of suppliers. Key improvements to our recycling efforts in CY2021 include:

Pogo increased their focus on scrap metal recycling throughout the year and saw results in increased volumes sent offsite to recycling facilities.

Jundee was able to recommence recycling waste tyres after a disruption caused by COVID-19 related facility closures.

KCGM engaged with a local parts supplier to remove spares from heavy machinery which are no longer of use.

Our Jundee and Thunderbox teams established an aluminium can recycling program through the Western Australian Cash for Cans program, an initiative that generates proceeds from recycling for donating to local not-for-profit organisations.

Carosue Dam team have been trialling the use of recycled plastic core trays on site, which resulted in a saving of 96.2 t of plastic going to landfill during CY2021

**Collaboration between corporate and site environmental teams has helped to bolster recycling programs.**

Table 12 Key Recyclables<sup>30</sup>

Key recyclables (t)	CY2021	CY2020	CY2019
Scrap metals	3,204	2,635	1,479
Batteries (vehicular)	41	22	22
Printer ink and toner cartridges	4	0	0
Waste oil	22,846	926	862
General waste	98	-	-
Co-mingled recycling (paper, cardboard, plastics, aluminium)	323	86	87
Tyres (count)	68	294	-
<b>Total</b>	<b>26,584</b>	<b>3,963</b>	<b>2,450</b>

Wastes that cannot be reused or recycled are disposed of in onsite landfill facilities or sent to offsite landfill and incineration facilities, dependent on the type of waste. For example, hydrocarbon contaminated materials such as oily rags are sent offsite for incineration as they are unable to be placed in landfill due to contamination risks. Wastes are transported from our sites to licenced facilities and waste management service providers via approved freight companies with controlled waste

licences as required.

Onsite landfill facilities are managed in accordance with the relevant licence and permit conditions in each region to ensure risks to the surrounding environments are mitigated.

Onsite landfill facilities are present at our Bronzewing, Jundee, Thunderbox, Carosue Dam, KCGM, Paulsens, Tanami and Pogo operations. We do not operate any onsite incineration facilities.

**Onsite landfill facilities are managed in accordance with the relevant licence and permit conditions in each region to ensure risks to the surrounding environments are mitigated.**

30. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021.

### Waste Rock

Waste rock is material mined from our operations that does not contain gold at economic levels. This material must be disposed of to waste rock landforms or backfilled into open pit or underground voids.

Backfilling waste rock is Northern Star's first preference as it eliminates the need to create permanent landforms in the environment, while decreasing safety risks associated with open voids.

However, backfilling relies on availability and distance to barren voids and is not always practical.

CY2021 saw a 280% increase in the total amount of waste rock produced, resulting from the increased number of assets due to the merger with Saracen, as well as an increased proportion of open pit mines within the portfolio. Open pit mining typically produces more waste rock than underground mining.

**Table 13** Waste Rock Production per Region

Waste rock production per region (t)	CY2021
Kalgoorlie	69,131,417
Yandal	19,861,229
Pogo	764,080
<b>Total</b>	<b>89,756,726</b>

**Table 14** Waste Rock Production<sup>31</sup>

Waste rock production (t)	CY2021	CY2020	CY2019
Total waste rock production	89,756,726	23,583,885	6,923,224
Waste rock reused for backfill (a subset of the above)	4,717,006	1,585,604	-



Rehabilitation of a waste rock dump, Carosue Dam, Kalgoorlie.

31. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021, explaining the increase from CY2020.



Shane Nicholls, Operational Technology Supervisor, KCGM Operations, Kalgoorlie.

### Hazardous Materials

Mineral processing and mining practices can result in hazardous materials being produced at our Operations. Site-specific management plans and procedures outline how each material is to be managed to ensure compliance with relevant regulations and to reduce the risk of causing environmental harm. Training is conducted to ensure staff involved in material management are competent to undertake the required tasks.

Hazardous materials are generated through our mining and mineral processing practices. For the purposes of this Report, the following waste streams are classified as key hazardous materials:

- Naturally occurring arsenic trioxide
- Mercury
- Batteries
- Waste Hydrocarbons
- Greases
- Hydrocarbon contaminated waste

There are ongoing improvement programs relating to the reduction of mercury emissions at KCGM with a focus on staff exposure in the mill/gold room. This includes plans to upgrade equipment in the gold room to improve the capture of mercury in 2022, again with the aim of reducing staff exposure. The Fimiston Emissions Reduction Program (Kiln off-gas cleaning circuit and Gold room abatement system) continues to be effective with at least 95% of mercury captured, prior to release to air.

### Potential Acid Forming Material

Acid mine drainage (AMD) is the formation of acidic water rich in metals which forms through the oxidation of sulfur-bearing rocks in the presence of water and oxygen. Pyrite (FeS<sub>2</sub>) is commonly found in metal ore deposits and can form AMD if exposed to the right conditions.

Northern Star conducts detailed assessments on our mine waste materials to determine if there is any risk of AMD being able to form and to enable early mitigation measures to be undertaken. We classify our wastes as being either Non-Acid Forming (NAF) or Potentially Acid Forming (PAF). This assessment provides an understanding of the material and the risk it poses to the environment and allows for specialised materials handling and disposal plans to be created for each waste and each location.

Where PAF material is encountered at our sites, a site-specific manage plan is developed. In most cases, PAF material is usually encapsulated within

waste rock dumps. These encapsulation cells are designed to ensure the most effective location and method for encapsulation and are covered with a minimum depth of 2m suitable compacted oxide or 5m of fresh rock. At Pogo, PAF is encapsulated within the dry stack tailings facility.

### Cyanide Management

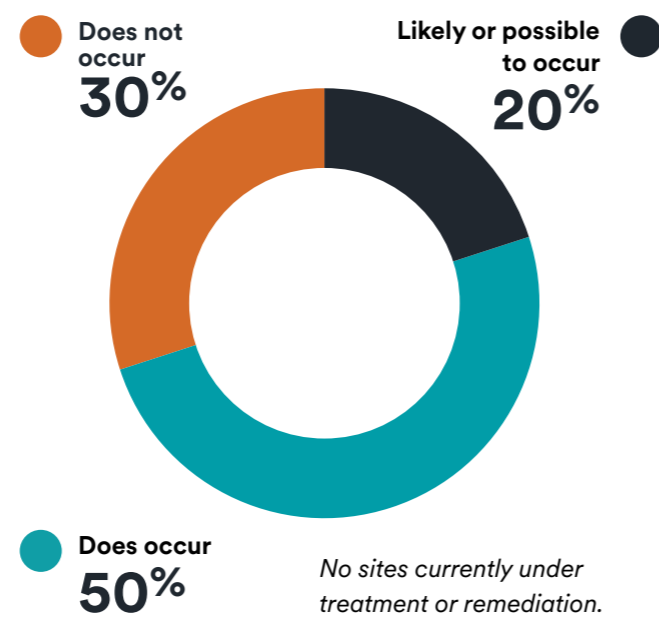
Sodium cyanide is used by Northern Star in gold processing, used to dissolve gold and silver from the ore and enabling them to be extracted and recovered.

Northern Star's Cyanide Management Standard provides guidance for our sites on how to manage risks associated with the supply, handling, transport and storage of sodium cyanide. The International Cyanide Management Code For the Manufacture, Transport, and Use of Cyanide in the Production of Gold (Cyanide Code) is a voluntary, performance driven, certification program used to ensure risks are managed appropriately to minimise risks to human health and the environment

In CY2021, KCGM re-signed as a signatory to the Cyanide Code, confirming its ongoing commitment to best practice in cyanide management

For sites that are not a signatory to the voluntary Cyanide Code, assessments are regularly undertaken to ensure they compliant with the Northern Star Cyanide Management Standard and aligned with the principals and standards of the Cyanide Code. Northern Star requires all suppliers and transporters of sodium cyanide to our operations to be signatories to the Cyanide Code.

Figure 40 Instances of PAF across our sites



Colin Rihari, Mark Roberts, Gavin Grljusich and Grant Soper at KCGM Operations Gidji Processing Plant.



## Tailings

Tailings are a combination of the fine-grained (typically silt-sized) solid materials remaining after the recoverable gold has been extracted from mined ore, together with the water used in the recovery process.

Northern Star deposits tailings material into four different types of tailings facilities across its operations.

- 1. Paddock – style facilities:** most utilised in arid environments and consist of dams with walls constructed from compacted earthen material, slurry waste and water. Examples at Northern Star include Thunderbox Tailings Storage Facility (TSF) and KCGM's TSF's.
- 2. In-pit facilities:** these are used where open pit mining voids have been successfully mined of all ore and are then used for deposition and

filling with tailings. Examples at Northern Star include the Samphire Pit at South Kalgoorlie and Luvionza Pit at Carosue Dam.

- 3. Dry stack facilities:** utilised at our Pogo operation, dry stack tailings facilities require water to be removed from the tailings before it is transported to the tailings facility.
- 4. Underground tailings backfill (or paste fill):** tailings material can be utilised on some sites as a component of cemented hydraulic backfill underground. Most of the fines and liquid are removed from the tailings at onsite paste backfill plants and the remaining paste is delivered underground for use in controlled conditions.

**Table 15** Tailings Production and Recycling<sup>32</sup>

Tailings Production (t)	CY2021	CY2020	CY2019
Total tailings produced	26,371,432	13,285,499	7,023,975
Tailings recycled (a subset of the above)	929,693	-	-

**Table 16** Total Tailings Production per Project Region

Tailings production per project area (t)	CY2021
Kalgoorlie	19,799,028
Yandal	5,687,371
Pogo	885,033

**Table 17** Total Tailings Production per Project Area

Tailings Production (t)	CY2021
Cyanide containing tailings	25,486,398
Non-cyanide containing tailings	885,034

**Table 18** Active TSFs as at 31 December 2021

Active TSFs as at 31 December 2021	CY2021
Paddock-style	14
In-pit	2
Dry stack	1

<sup>32</sup> Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021.

Northern Star actively reviews its management of tailings facilities against both internal and external standards to ensure best practice.

- As foreshadowed in our CY2020 Sustainability Report, we have commenced a gap analysis against the Global Industry Standard on Tailings Management at Pogo and KCGM. This gap analysis is ongoing and has yet to be completed for Jundee, Carosue Dam, Thunderbox, Kanowna Belle and South Kalgoorlie.
- In CY2021 Northern Star appointed an independent third-party consultant with tailings expertise to complete an analysis of the TSFs across our Australian Operations against the

Northern Star Internal Tailings Management Standard. This analysis was completed to assist the Processing and Technical Services departments in allocating resources to ensure we have consistent ongoing tailings management at a high standard across our full portfolio of operations. Due to COVID-19 related travel restrictions, the assessment of Pogo's dry-stack tailings facility was completed via desktop assessment.

The results of these analyses have provided clear action plans for each site post-merger to achieve full conformance with the Northern Star Tailings Management Standards.



Les Herbert, Tailings & Water Operator, Fimiston, KCGM, Kalgoorlie.

### Water Stewardship





Access to water is a fundamental human right and is critical to our operations. The majority of our sites exist in areas with high baseline water stress, and we are committed to using and managing this valuable resource sustainably to ensure shared users and the environment are not adversely impacted. Our Water Management Global Standard and site-specific Water Management Plans further strengthen this commitment by detailing key practices and processes for managing water use. Comprehensive water balances are also utilised across our operations to manage site specific water resources and ensure our site Environmental and Operational teams have clear oversight of water abstraction, recycling, discharge and consumption.

Total water withdrawals have increased in CY2021 post-merger compared with CY2020 due to the additional assets. Nevertheless, we consistently look for strategies to improve efficiencies and reduce water consumption across our operations, in consultation with our stakeholders and other shared water users. Key projects completed or commencing in CY2021 include:

- The installation of a tailings thickener at the Jundee processing plant to increase the quantity of water recycled through the plant, rather than being discharged to the tailings facility where it can be lost through evaporation.

- The KCGM Water Efficiency Management Plan was implemented, resulting in an 11% reduction in potable water usage. This was predominately due to the continued implementation of water saving initiatives including replacing potable water with saline water for use in underground drilling at the Mt Charlotte Underground Mine and the installation of automatic vaporiser change over equipment for de-icing liquid oxygen plant vaporisers.
- A high-rate flushing method was introduced in the paste fill operations at our Pogo Operations, reducing the amount of water that requires treatment through the onsite water treatment plant.
- We have also commenced a project at Pogo to improve the collection of water used in our underground mines for recycling purposes. The project aims to increase the time for particulate sedimentation to occur prior to the water being recycled for use. This makes greater volumes of suitable quality recycled water available for use and thereby reduces the amount of water from surface water sources that is required to supplement the recycled water.

Table 19 Water Stress<sup>33</sup>

Water per ops centre (ML)	Baseline water stress level	Water recycled or reused	Total freshwater withdrawal	Total other water withdrawal	Total discharge	Net consumption
Kalgoorlie		15,753	1,750	12,377	2,076	12,046
Yandal		2,114	245	6,383	-	6,628
Pogo		555	27,624	-	27,229	395
Exploration		-	10	53	-	63
<b>Total</b>		<b>18,422</b>	<b>29,629</b>	<b>18,813</b>	<b>29,305</b>	<b>19,132</b>

Key  High  Medium  Low

Table 20 Water Consumption<sup>33</sup>

Water consumption (ML)	CY2021	CY2020	CY2019
Kalgoorlie	12,046	5,899	203
Yandal	6,628	2,440	206
Pogo	395	691	-
Exploration	63	80	95
<b>Total</b>	<b>19,132</b>	<b>9,110</b>	<b>504</b>

33. Due to the merger with Saracen in CY2021 the historical data for those sites are not included in CY2020 or CY2019. KCGM data shows as 100% from CY2021, explaining the increase (and Thunderbox consumption, causing the increase in the Yandal CY2021 figures).

### Air Quality

Northern Star monitors and manages key air quality metrics across our operations and local communities located adjacent to our operations.

Air quality is typically influenced by industrial emissions, cars, planes, household emissions including wood fired heaters, bushfires and controlled burnoffs, dust from unsealed roads and construction development, degraded lands and many other sources.

The City of Kalgoorlie-Boulder has had a long history of air quality issues due to historical practices on the Golden Mile, but new and improved management practices have resulted in substantial improvements in air quality.

- The establishment of a “green belt” between the mine and the City to improve the visual appearance and reduce dust generation from degraded bare land.
- A phased reduction of in-town roasting and the establishment of a roaster at a location that minimised the impacts of sulphur dioxide on residential areas.

Coupled with these, improved management practices have resulted in significant improvement in air quality in the City of Kalgoorlie-Boulder since the 1990’s. The Fimiston Air Quality Management Plan (FAQMP) was initially developed by KCGM in 2007 as part of the Fimiston Gold Mine Operations Extension (Stage 3) and Mine Closure Planning Public Environmental Review (PER) to integrate a number of management plans that cover various air quality aspects of the Fimiston Operations.

Air quality results are reported to the Australian and United States Governments via several mechanisms:

- Australian data is reported via the National Pollutant Inventory ([www.npi.gov.au](http://www.npi.gov.au))
- Alaskan data is reported via the Toxics Release Inventory ([www.epa.gov/trinationalanalysis](http://www.epa.gov/trinationalanalysis))

The air quality metrics disclosed in this Report are calculated in accordance with the Australian Government’s National Pollutant Inventory methodology to ensure consistency in calculation methods across regions.

Table 21 CY2021 Measured Air Emissions

Air Emissions	Metric Tonne
Nitrous oxides	11,213
Carbon monoxide	3,362
Sulphur oxides	23,557
Particulate matter (<10µm)	12,483
Mercury	0.50
Lead	0.26
Volatile organic compounds	460

### Sulphur Dioxide

Our Kanowna Belle processing plant incorporates a roaster to allow processing of sulphidic ore. The sulphidic ore prevents gold from being extracted efficiently during the normal process. Kanowna Belle has implemented an Air Quality Control system (AQC). The system consists of a network of monitoring instruments dedicated to measuring sulphur dioxide concentrations and atmospheric conditions within the region (Kalgoorlie-Boulder, Kurrawang, Coolgardie and Kambalda), to ensure roasting is conducted in a controlled manner. The

AQC system combines dynamic SO<sub>2</sub> network and meteorological monitoring data with predictive logic to calculate a recommended roaster status i.e., ON or OFF. This is supported by a roaster auto-shutdown sequence with a 5-minute delay in the event that roaster personnel do not act on an ‘OFF’ recommendation immediately. During the CY2021 there were no exceedances of the regulatory limits (maximum hourly ambient SO<sub>2</sub> concentrations) at any of the monitoring stations in the abovementioned areas.





# Governance, Ethics & Transparency

General Manager of  
Thunderbox Operations,  
Peter Ganza

# Governance, Ethics & Transparency



“Northern Star is committed to demonstrating the highest standards of corporate governance – it is the foundation of stakeholders trust in our business”

Hilary Macdonald, **Chief Legal Officer and Company Secretary**

## Corporate Governance

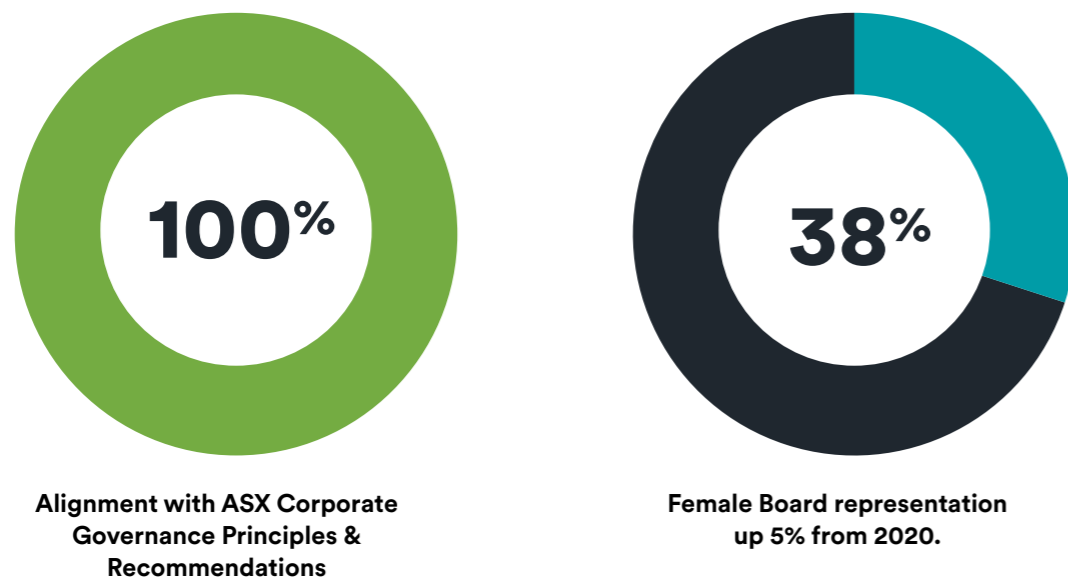
The cornerstone principles of corporate governance are accountability, transparency, fairness and responsibility. Northern Star’s conduct of these principles are evidenced in ethical behaviour, pursuit of corporate strategy, remuneration practices and risk management. The Company understands the long-term benefits of practicing good governance.

In February 2021, the Company merged with Saracen Mineral Holdings Limited (Saracen). Immediately upon implementation of the merger Northern Star’s governance framework including its STARR Core Values, Code of Conduct and certain key policies and procedures were implemented

across the whole Company and more importantly understood by all Employees within the merged Group, providing a single platform of minimum standards required of all employees from day one.

Northern Star is fully aligned with all 35 Recommendations of the ASX Corporate Governance Council Principles and Recommendations<sup>34</sup>. This was achieved following the appointment of Michael Chaney AO as Chairman of the Board. Since the end of CY2020/ FY21, our female Board participation has increased from 33% to 38%.

Figure 41 ASX Alignment

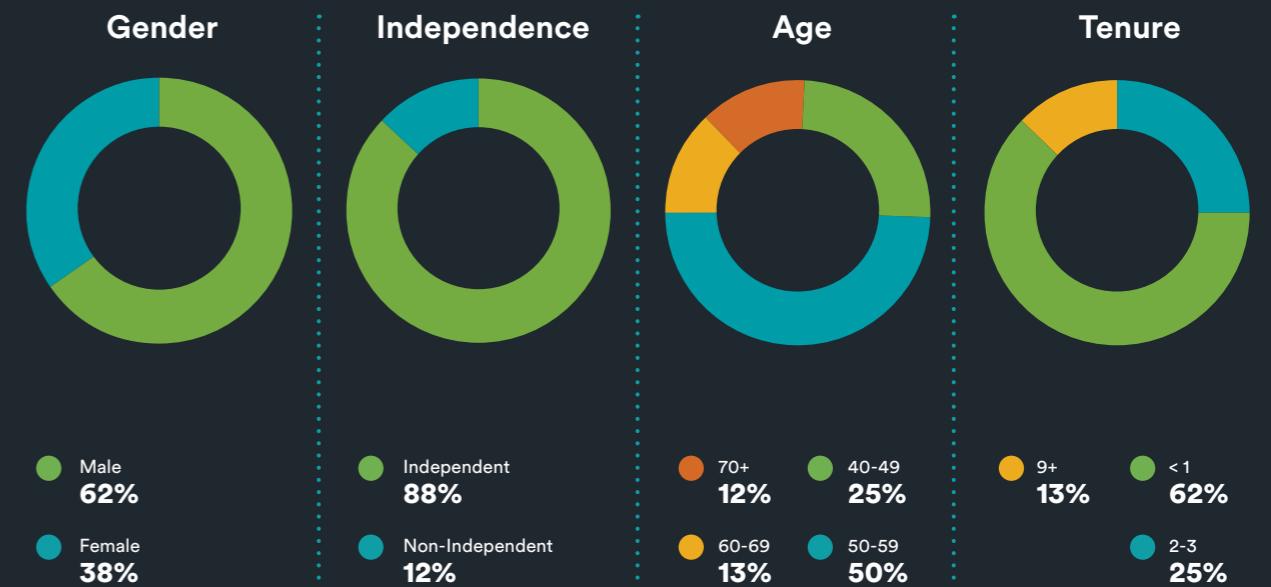


34. ASX Corporate Governance Council Principles and Recommendations Fourth Edition, Recommendation 1.5: target for achieving gender diversity in the composition of its board should be to have not less than 30%.

Northern Star believes Board diversity including gender, age, skillset and tenure is crucial for ensuring good governance, fresh perspective and that the Board is equipped with a deep

understanding of the Company and its business. As at 31 December 2021 the Board’s current diversity is depicted in Figure 42 below.

Figure 42 Board statistics



The Northern Star flag flies proudly alongside the Australian and Aboriginal flags at our Thunderbox Operations.

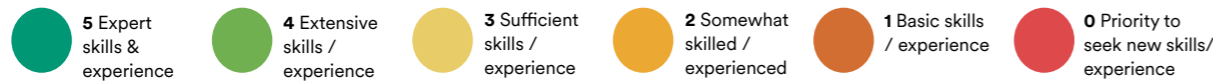
### Board Skills Matrix

Each year the Board conducts a skills matrix self-assessment to assess diversity, and assist in identifying any gaps relevant to achieving the strategic objectives of Northern Star. As depicted in Figure 43, in CY2021 all Directors rated themselves as possessing skills in the areas that will assist Northern Star in advancing its sustainability objectives.

Information about the components of each skill is available on pages 80 and 81 of the 2021 Annual Report <https://www.nsrld.com/investor-and-media/asx-announcements/2021/august/2021-annual-report>

Figure 43 Board Skills Matrix

Key: Board Rating Per Skill



In addition, in June 2021 the Board and its sub-Committees undertook a comprehensive Board evaluation conducted by external governance specialists at Nasdaq Corporate Solutions (Nasdaq). The focus of the FY21 evaluation was to:

- provide the Board with an unbiased, greater understanding of its functioning and performance;
- highlight areas of strength and opportunities for improvement;
- encourage positive relationships among Board members; and
- improve the Board's overall performance and effectiveness.

The Nasdaq evaluation delivered actionable reports for the Board and each Committee containing aggregated and anonymous individual responses,

feedback and comments for each Committee including strengths and opportunities to further improve the function of the Board and each Committee.

The Board's five standing Committees: Audit & Risk Committee, Environmental, Social & Safety Committee, Nomination Committee, Remuneration Committee, and newly established in February 2021, Exploration & Growth Committee, assist the Board to discharge its governance responsibilities. The Committees oversee, review and progress matters on behalf of the Board to assist the Company to meet its strategic objectives.

In CY2021 the Audit & Risk Committee, ESS Committee and the Remuneration Committee assisted Northern Star's progress towards more sustainable operations by focusing on the topics describe below:

Figure 44 Board Committee Focus

#### ESS Committee

- Climate Change Policy, interim 2030 35% emissions target, and progress towards Net Zero by 2050.
- Workplace health and safety oversight.
- Company diversity initiatives.
- Environmental management system improvements.
- Community engagement strategy, including Williamstown relocation assistance.
- Improving donations and sponsorship criteria and process.
- Accountability and business ethics.
- Building awareness and taking action in relation to stakeholder expectations.

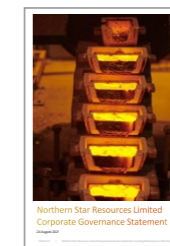
#### Audit & Risk Committee

- Internal financial control systems including internal audit.
- Constantly improving and reviewing scope and resources for risk management framework, systems and assessments.
- Awareness and understanding of corporate governance requirements with particular focus on financial reporting and risk..
- Alignment and review of stakeholder expectations
- Assessment of our principles and processes to ensure we observe and maintain best practice in risk management, governance, and auditing.

#### Remuneration Committee

- Remuneration framework to encourage positive corporate culture and governance practices, including ensuring compliance with the Company's Code of Conduct, policies and procedures, and the legislative and regulatory framework
- Identifying the right levers for behaviour in setting Key Performance Indicators - including environmental/ emissions reduction/diversity objectives.
- Monitoring Company performance against KPI's and rewards reflecting performance.

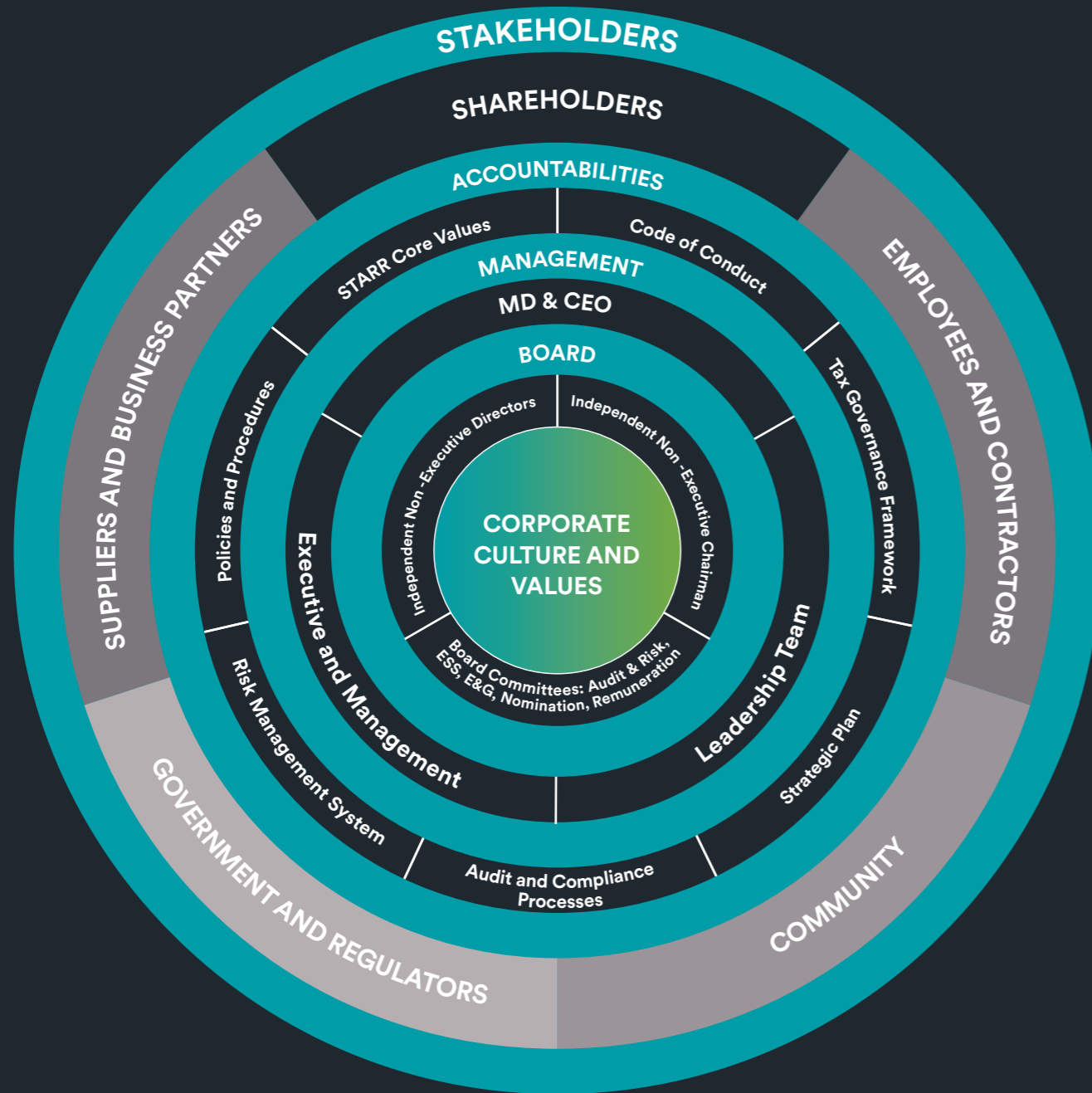
Further information about the Company's governance practices is disclosed in the Company's FY21 Corporate Governance Statement on Northern Star's website at <https://www.nsrld.com/investor-and-media/asx-announcements/2021/august/fy21-corporate-governance-statement>



**View our latest Corporate Governance Statement**

Visit: [nsrld.com](https://www.nsrld.com)

Figure 45 Corporate Governance Framework



### Risk Mitigation and Management

Northern Star has a mature risk management capability and management system. Northern Star prioritises hazard and risk assessments, mitigation and management of risks across every aspect of our operations. ESG risks and control measures are embedded in the corporate risk register, and site risk registers.

Northern Star's operations are guided by Northern Star's Risk Management Policy and Risk Management Standard, which apply to the management of all types of risks within the business, document our internal control systems and provide the processes for risk assessment and management. The Company's Risk Management Standard outlines accountabilities, processes for risk reporting and the control mechanisms designed to ensure that our workers adequately identify, assess and manage risks at all our operations.

In accordance with the Audit & Risk Committee Charter, Northern Star's Audit & Risk Committee reviews and monitors the degree to which risks are identified, assessed, and mitigated, evidenced in the corporate and site risk registers. A major responsibility of the Committee is to oversee, test and debate with senior management the identification of new, emerging and escalating risks which are inherent in the Company's operations, and consider whether the risk mitigation actions reduce the inherent risk ratings sufficiently to an acceptable residual risk rating. Results of the Committee's risk reviews are reported to the Board twice annually. In addition, on an annual basis the Committee's Directors attend sessions with each of the site

General Managers to receive detailed presentations on their site's specific risks and mitigation strategies with questions and answers that benefit all parties to understand the risks.

The Audit & Risk Committee is also responsible for periodically reviewing and recommending any necessary changes to the Company's risk management framework or the risk appetite set by the Board.

In addition to the annual risk register reviews, in FY21 the Audit & Risk Committee and senior management team conducted a Company-wide risk review to critically assess and document Northern Star's risk profile due to the expanded operations and Company footprint post-merger with Saracen. This resulted in further adjustments and updates being made to Northern Star's Company Risk Management Register including a focus on mitigating risks such as loss of skilled personnel, impact of pandemic/epidemic virus or infectious diseases, loss of social licence to operate, stakeholder expectations regarding sustainability and our material environment/social risks relating to climate change, cyber security and breaching our operating licence conditions.

Northern Star's top 10 ranked risks and material environmental/social sustainability risks as well as the key control measures in place to manage those risks are disclosed in the Risk Management section on pages 44 and 45 of the FY21 Annual Report found on the Company's website at <https://www.nsrld.com/investor-and-media/asx-announcements/2021/august/2021-annual-report>.



Processing Manager, Cleo Leunig at Carosue Dam Operations

## Ethical Business Practices

Our Code of Conduct supports our objectives of increasing Shareholder value within an appropriate ethical framework. It provides a decision compass for the way Northern Star does business and holds personnel accountable for:

- exercising integrity in their decisions and behaviour,
- acting ethically in the best interests of our shareholders, and
- complying with all laws and company policies.

The Northern Star STARR Core Values, as shown on page 9 of this Report, are a simple guide for Company behaviour and are instilled within Northern Star personnel at all levels.

The Company strives to act in accordance and in compliance with current laws and regulations in all jurisdictions where we operate.

Northern Star corporate governance policies set up the expectations for compliance and ethical behaviour by our people and in our operations. The key policies are disclosed on our website to ensure accountability, fairness and transparency. In addition all inductions completed by our workers explain the importance and relevance of the key policies to our operations.

The abuse of human rights, including modern slavery practices in all its forms, is condemned by Northern Star. Our Human Rights Policy recognises our role in protecting the human rights of all people involved in, or impacted by, our business practices and taking meaningful steps to identify and address our modern slavery risks. For further information, see the Modern Slavery section of this Report and our FY2021 Modern Slavery Statement available on our website.

Employees and other stakeholders who suspect or see unethical, illegal or improper behaviour within the Company are encouraged to report and are protected under our Whistleblower Policy which provides for a confidential, anonymous and retaliation-free process for people to report their concerns, free of fears of retaliation, with confidence the Board will be made aware of the situation and any corrective actions.

Whistleblower reports, Code of Conduct concerns and any serious breaches of conflict of interest are standing items for discussion on all Audit and Risk Committee and Board agendas.

# Whistleblower reports are standing items for discussion on all Audit and Risk Committee and Board agendas.

John Fitzgerald, Chair of the Audit & Risk Committee

## Transparency in disclosure

Northern Star understands that stakeholder trust and investor confidence is built and maintained on foundations of transparent disclosure. The Company's disclosure practices provide further clarity, insight and transparency about the Company, its operations and its governance practices, for the benefit of our shareholders and stakeholders.

Our disclosures are guided by Northern Star's Continuous Disclosure Policy and Shareholder Communication Policy. In addition to disclosing in accordance with these policies, Northern Star regularly reviews and enhances its periodic disclosures to ensure openness, fairness and accountability in our external communications.

To further ensure that we practice transparency we regularly pursue meetings with proxy advisors and each year, prior to Northern Star's Annual General

Meeting, we invite Shareholders to submit questions to our Board and Auditors, in addition to welcoming further questions from the floor on the day of the Annual General Meeting (a hybrid event for 2021 and in the future, to maximise the opportunity for all our shareholders globally to participate effectively). This allows our stakeholders and shareholders an opportunity to seek further transparency directly. At the hybrid 2021 AGM over thirty questions were read out and answered directly by our Chairman, supplemented with input from our Managing Director.

As part of our commitment to transparency, under the Australian Voluntary Tax Transparency Code, Northern Star continues to voluntarily publish the Company's annual Tax Corporate Governance Statements on our website ([www.nsr ltd.com/about/corporate-governance](http://www.nsr ltd.com/about/corporate-governance).)

Legal Counsel  
Clementine Kohler  
Corporate Office, Perth.



# **Appendix A:** **Scope 3 Materiality** **Assessment**

## Scope 3 Materiality Assessment

Northern Star completed a materiality assessment guided by the Greenhouse Gas Protocol to determine the Scope 3 emissions categories for inclusion in our calculations.

Scope 3 emissions category	Materiality	Included Y/ N	Assumptions & Exclusions
1. <b>Purchased goods and services</b>	Purchased goods and services are expected to significantly contribute to our Scope 3 emissions. Northern Star can have direct influence over the goods and services procured and therefore have influence over Scope 3 emissions generated.	Y	Suppliers who provided over \$100,000 of goods or services in CY2021 were contacted for specific emissions factors. All other suppliers were assessed using the most appropriate group category provided by the Greenhouse Gas Protocol Scope 3 Evaluator.
2. <b>Capital goods</b>	Purchased capital goods are expected to significantly contribute to Scope 3 emissions. Northern Star can have direct influence over capital goods and therefore have influence over Scope 3 emissions generated.	Y	Suppliers were contacted for specific emissions factors. Where spend data was not captured by specific emissions factors an emissions factor from the appropriate group category by the Greenhouse Gas Protocol Scope 3 Evaluator was applied.
3. <b>Fuel and energy-related activities</b>	Fuel and energy related activities are expected to significantly contribute to Scope 3 emissions. Northern Star can have direct influence over the fuel and energy procured and therefore have influence over Scope 3 emissions generated.	Y	All data required for this category was collected as part of the preparation for the Scope 1 and Scope 2 GHG emissions. Industry average emission factors from the National Greenhouse Account Factors 2021 are applied.
4. <b>Upstream transportation and distribution</b>	Scope 3 emissions related to upstream transportation are unlikely to be significant. Despite this, Northern Star has the ability for direct influence in this area and therefore over Scope 3 emissions generated.	Y	Freight companies were contacted for specific emissions factors. Where an emissions factor was not determined, an average emission factor from the other respondents with the same freight type is used.
5. <b>Waste generated in operations</b>	Scope 3 emissions related to waste are unlikely to be significant and are indirectly influenced by Northern Star. These were not included in the 2021 calculation and will be reviewed for inclusion in future revisions.	N	N/A
6. <b>Business travel</b>	Scope 3 emissions related to business travel are unlikely to be significant. Despite this, Northern Star can have direct influence in this area and therefore over Scope 3 emissions generated.	Y	Airlines were contacted for specific emissions factors. Where an emissions factor was not determined, the average emission factor from the other respondents is used. Calculations are completed on a distance-based methodology, where emissions factors are applied to passenger kilometres.

Scope 3 emissions category	Materiality	Included Y/ N	Assumptions & Exclusions
7. <b>Employee commuting</b>	Scope 3 emissions related to employee commuting are unlikely to be significant. Despite this, Northern Star can have direct influence in this area and therefore over Scope 3 emissions generated.	Y	Airlines were contacted for specific emissions factors. Transport companies providing buses to and from sites were contacted for specific emissions factors. Where an emissions factor was not determined, the average emission factor from the other respondents is used. Emissions associated with Kalgoorlie employees travelling between their place of residence and site have been estimated based on employee numbers and average distances to the Kalgoorlie town centre. Emissions associated with corporate employees travelling between their place of residence and the Subiaco office have not been included. Emissions associated with Pogo employees travelling between their place of residence and the Fairbanks bus pickup locations have not been included.
8. <b>Upstream leased assets</b>	Not applicable as Northern Star does not have any upstream leased assets.	N	N/A
9. <b>Downstream transportation and distribution</b>	Not applicable as gold is not physically moved from the refinery in large quantities.	N	N/A
10. <b>Processing of sold products</b>	Scope 3 emissions related to processing sold products are unlikely to be significant. Northern Star can have direct influence in this area and therefore over Scope 3 emissions generated.	Y	The Perth Mint provided specific emissions factors.
11. <b>Use of sold products</b>	Scope 3 emissions related to sold products relate to use in technology. This is considered an indirect use-phase emissions and is optional to report under the Greenhouse Gas Protocol Standard.	N	N/A
12. <b>End-of-life treatment of sold products</b>	Not applicable as gold forms a stable product.	N	
13. <b>Downstream leased assets</b>	Not applicable as Northern Star does not have any downstream leased assets.	N	
14. <b>Franchises</b>	Not applicable.	N	
15. <b>Investments</b>	Northern Star's few investments are of low percentage and therefore we have little influence in this area.	N	

4. as guided by the Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

# **Appendix B:** **Biodiversity Values**



Significant Biodiversity Values

Operation / Project	Taxa, Communities & Habitats	Location Relative to Site	Management Practices
Jundee Bronzewing	Multiple Priority Ecological Communities in association with invertebrates in groundwater calcretes	Within and outside proposed disturbance areas	Minimise water abstraction and land disturbance. Subterranean fauna surveys are planned to understand species and extent.
	Brush Tailed Mulgara ( <i>Dasyercus blythi</i> ) (P4) <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> (P3) <i>Baeckea</i> sp. <i>Sandstone</i> (P3) <i>Eremophila arguta</i> (P1) <i>Eremophila congesta</i> (P1) <i>Eremophila</i> sp. <i>long pedicels</i> (P2) <i>Eremophila pungens</i> (P4) <i>Goodenia modesta</i> (P3) <i>Micromyrtus chrysodema</i> (P1) <i>Stackhousia clementii</i> (P3) <i>Tribulus adelacanthus</i> (P3) <i>Xanthoparmelia nashi</i> (P3)	Outside proposed disturbance area	Jundee Biodiversity Management Plan JUN-ENV-054-PLA Avoid where possible. Fauna relocation undertaken in areas of suitable habitat two weeks prior to disturbance. Inspections conducted by suitably trained personnel immediately prior to disturbance activities. Biodiversity surveys completed prior to any disturbances within the area. Avoid where possible and apply hierarchy of mitigation (avoid, minimise & rehabilitate). Weed management practices are implemented during disturbance to prevent introduction of invasive species. Jundee Biodiversity Management Plan JUN-ENV-054-PLA
Thunderbox	<i>Calytrix</i> ( <i>C. erosipetala</i> and <i>C. uncinata</i> ) both Priority 3 species	None of these populations have been recorded in areas of planned impact.	Avoid where possible and apply the mitigation hierarchy (avoid, minimise, rehabilitate, offset). Biodiversity surveys completed prior to any disturbances within the area. Biodiversity Management Plan TBO-ENV-040-PLA Weed and Feral Animal Control TBO-ENV-006-SWP Clearing Management TBO-ENV-004-SWP
Carosue Dam	Malleefowl ( <i>Leipoa ocellata</i> ) (Vulnerable)	Within and outside proposed disturbance areas	Avoid where possible and apply the mitigation hierarchy (avoid, minimise, rehabilitate, offset). Biodiversity surveys completed prior to any disturbances within the area, including targeted Priority flora and fauna surveys in areas of suitable habitat. Biodiversity Management Plan CDO-ENV-051-PLA Rehabilitation Management Work Instruction CDO-ENV-027-SWP Implementation of site Weed Management Plan. Weed and Feral Animal Control CDO-ENV-024-SWP Clearing Management Procedure CDO-ENV-0023-SWP Implementation of Annual Malleefowl Monitoring on site and regional surveys. Avoid clearing or disturbing areas where this species is present.
	<i>Eremophila arachnoides</i> subsp. <i>tenera</i> (Priority 3)	Outside proposed disturbance areas	
Kanowna Belle & South Kalgoorlie Operations	Data not publicly available	-	-
KCGM	Data not publicly available	-	-

Operation / Project	Taxa, Communities & Habitats	Location Relative to Site	Management Practices
Pogo	Goodpaster River – breeding ground for Chinook Salmon / King Salmon ( <i>Oncorhynchus tshawytscha</i> ) All native Alaskan birds' habitats (protected under Migratory Bird Treaty Act) These include black spruce and birch forests, ponds, tundra, and gravel areas	Outside proposed disturbance areas	Monitoring of water quality upstream and downstream of our operations. Management practices are outlined in Pogo's Fish Resources Permits and Fish Habitat Permits. Bird nesting surveys prior to clearing. Management practices established in the Migratory Bird Treaty Act. Weed management practices follow guidelines established in ADNR's Strategic Plan for Invasive Weed and Agricultural Management and Prevention in Alaska.
Tanami	Landforms and habitats including: <ul style="list-style-type: none"> <li>South-west Tanami Desert</li> <li>Gardiner Range</li> <li>Tanami Range</li> <li>Browns Range</li> <li>Birrindudu Range</li> <li>Central Tanami Paleodrainage Depression</li> <li>Central Tanami Remnant Mulga</li> </ul> Bilby ( <i>Macrotis logotis</i> ) Brush-tailed Mulgara ( <i>Dasyercus blythi</i> ) Northern Nail-tail Wallaby ( <i>Onychogalea unguifera</i> ) Spectacled Hare-wallaby ( <i>Lagorchestes conspicillatus</i> ) <i>Acacia abbreviate Maslin</i> (NTh) <i>Cleome uncifera</i> ssp. <i>Microphylla</i> (NTh) <i>Heliotropium sphaericum</i> (NTh) <i>Heliotropium subreniforme</i> (DD) <i>Hibiscus brachyclaenus</i> (NTh) <i>Jacksonia aculeate</i> (DD) <i>Sauropus trachyspermus</i> (NTh)	Potentially within proposed disturbance areas	Sites are currently in care and maintenance. Biodiversity Management Plan (Northern Territory). Support of Tanami Regional Biodiversity Monitoring Project, contributing to knowledge of the biodiversity values and better management practices. Wildlife Management Plans for species of conservation significance. Internal Disturbance Permits are required prior to any clearing.
Paulsens	Pilbara Leaf-nosed Bat ( <i>Rhinonictis aurantia</i> ), (EPBC Vulnerable) Fork-tailed Swift ( <i>Apus pacificus</i> ) and Rainbow Bee-eater ( <i>Merops ornatus</i> ) (EPBC Migratory) Australian Bustard ( <i>Ardeotis australis</i> ) (P4)	Potentially within proposed disturbance areas	Site currently in care and maintenance. However, avoid where possible and apply the mitigation hierarchy (avoid, minimise, rehabilitate, offset).

Notes:

P1 = Poorly known species; species known from one or a few locations (generally five or less) which are potentially at risk

P2 = Poorly known species; species known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation and other land with secure tenure being managed for conservation.

P3 = Poorly known species; species known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining area of apparently suitable habitat much of it not under imminent threat.

P4 = Rare, near threatened or other species in need of monitoring

EPBC Vulnerable = facing a high risk of extinction in the wild in the medium term future

NTh = near threatened

DD = Data deficient

Species common names have been included where available

# **Additional** **Information**

# Glossary

**AMMA**  
Australian Mines and Metals Association

**ASX**  
Australian Securities Exchange

**ASX Corporate Governance Principles and Recommendations**  
Principles and Recommendations (4th edition) of the ASX corporate Governance Council on the corporate governance practices to be adopted by ASX listed entities and which are designed to promote investor confidence and to assist listed entities to meet shareholder expectations

**ATAGI**  
Australian Technical Advisory Group on Immunisation

**Au**  
The chemical symbol for gold

**B or bn**  
Billion

**Board**  
Board of Directors

**BTM**  
Behind the meter

**CO<sub>2</sub>**  
Carbon dioxide

**CO<sub>2</sub>-e**  
Carbon dioxide equivalent

**Company**  
Northern Star Resources Limited ABN 43 092 832 892

**Contractors**  
Externally employed contracted workers engaged by the Company to support operations

**Corporations Act**  
Corporations Act 2001 (Cth)

**CY**  
Calendar year ending 31 December

**Director**  
A director of the Company duly appointed under the Corporations Act

**EAP**  
Employee assistance providers(s)

**Employees**  
Total number of employees of the Group including permanent, fixed term and part-time. Does not include contractors

**ESG**  
Environment, Social & Governance

**ESR**  
Environment & Social Responsibility

**ESS**  
Environmental, Social & Safety

**ESS Committee**  
Environment, Social & Safety sub-Committee

**FIFO**  
Fly-in fly-out; those personnel who fly to our operations and stay in an accommodation village while at work

**FPIC**  
Free, Prior and Informed Consent, as defined by the United Nations at <https://www.fao.org/3/i6190e/i6190e.pdf>

**FY**  
Financial year ended 30 June

**GHG**  
Greenhouse gases

**GJ**  
Gigajoule; one million joules

**Group**  
Northern Star Resources Limited and all of its wholly owned subsidiaries

**ha**  
Hectare

**ICMM**  
International Council on Mining and Metal

**Incident**  
means the partial or whole damage or destruction of an area of cultural or heritage significance without Traditional Owner consent and/or required legal or regulatory approvals

**ISO 14001**  
The ISO 14001 Environmental Management Systems Standard, an international standard prescribing a structured approach to environmental protection.

**K or k**  
Thousand

**KCGM**  
KCGM means Kalgoorlie Consolidated Gold Mines Pty Ltd, a wholly owned subsidiary of the Company, which operates the Super Pit and Mt Charlotte in Kalgoorlie, Western Australia

**Kg or kg**  
Kilogram

**kL**  
kilolitre; one thousand litres

**KPI**  
Key Performance Indicator

**LTIFR**  
Lost Time Injury Frequency Rate; calculated based on the number of lost time injuries occurring in a workplace per 1 million hours worked

**M or m**  
Million

**Merger**  
The merger of Saracen Mineral Holdings Limited ABN 52 009 215 347 and all of its wholly owned subsidiaries with Northern Star by way of Scheme of Arrangement implemented on 12 February 2021

**ML**  
Mega-litre; one million litres

**Officer**  
An officer of the Company defined under the Corporations Act

**Oz**  
Ounce

**Paris Agreement**  
Paris Agreement refers to the legally binding international treaty on climate change which was adopted by 196 Parties at the 21st session of the United Nations Conference of the Parties, in Paris on 12 December 2015, and entered into force on 4 November 2016.

**PPE**  
Personal protective equipment

**RCP**  
Representative Concentration Pathway. Greenhouse gas concentration trajectories which provide emissions constraints and physical outcomes in Climate Change Scenario Analysis

**Rounding**  
Amounts in this Report have been rounded off to the nearest thousand, million, or in certain cases, the nearest [dollar]

**SAR**  
Saracen Mineral Holdings Limited ABN 52 009 215 347

**Saracen**  
Saracen Mineral Holdings Limited ABN 52 009 215 347 and all of its wholly owned subsidiaries, as acquired by Northern Star by way of Scheme of Arrangement implemented on 12 February 2021

**SASB**  
Sustainability Accounting Standards Board

**Scope 1 Emissions**  
Emissions released to the atmosphere as a direct result of an activity, or series of activities at a facility level.

**Scope 2 Emissions**  
Emissions released to the atmosphere from the indirect consumption of an energy commodity

**Scope 3 Emissions**  
Indirect greenhouse gas emissions other than Scope 2 emissions that are generated in the wider economy. They occur as a consequence of the activities of a facility, but from sources not owned or controlled by that facility's business.

**Shareholder**  
A shareholder of Northern Star Resources Limited

**SSP**  
Shared Socio-Economic Pathway. These provide social and economic context for Climate Change Scenario Analysis

**Stakeholders**  
An individual, group or organisation that is impacted by the Company, or has an impact on the Company. Examples of stakeholders are investors, employees, suppliers and local communities

**STARR**  
Our Core Values of Safety, Teamwork, Accountability, Respect and Results

**Suppliers**  
External companies engaged by Northern Star to supply goods to the operations

**TCFD**  
The Financial Stability Board's Task Force on Climate-related Financial Disclosures

**TSF**  
Tailings storage facility

**TRIFR**  
Total Recordable Injury Frequency Rate; calculated according to the number of recordable work-related injuries or illness for each one million hours worked

**UN**  
United Nations

**UN COP26**  
2021 UN Climate Change Conference

**UN SDGs**  
The United Nations Sustainable Development Goals

**Underlying EBITDA**  
Net profit after tax, before interest, tax depreciation and amortisation adjusted for specific items.

**US**  
United States of America

**WA**  
Western Australia

**\$**  
Australian dollars, unless the context states otherwise.

# Corporate Directory

## Directors (as at 1 January 2022)

Michael Chaney AO	Chairman
Stuart Tonkin	Managing Director and CEO
John Fitzgerald	Non-Executive Director
Mary Hackett	Non-Executive Director
Nick Cernotta	Non-Executive Director
Sally Langer	Non-Executive Director
John Richards	Non-Executive Director
Sharon Warburton	Non-Executive Director

## Chief Legal Officer and Company Secretary

Hilary Macdonald

## Chief Financial Officer

Ryan Gurner

## Chief Operating Officer

Simon Jessop

# Contact information

**Northern Star Resources Limited** (ABN 43 092 832 892)

<b>Corporate office</b>	Level 1, 388 Hay Street Subiaco WA 6008 Australia
<b>Telephone</b>	+61 8 6188 2100
<b>Website</b>	<a href="http://www.nsrld.com">www.nsrld.com</a>
<b>Email</b>	
ESG enquiries	<a href="mailto:esgperformance@nsrld.com">esgperformance@nsrld.com</a>
Investor Relations	<a href="mailto:investorrelations@nsrld.com">investorrelations@nsrld.com</a>
General Enquiries	<a href="mailto:info@nsrld.com">info@nsrld.com</a>
Compliance	<a href="mailto:compliance@nsrld.com">compliance@nsrld.com</a>

<b>ASX Code</b>	NST
<b>Share Registry</b>	Link Market Services Ltd

## ASX Disclosures in this Report

The information in this Report that relates to Northern Star's Group Ore Reserves and Mineral Resources for FY21 (including in respect of KCGM, Kalgoorlie Operations, Yandal Operations and Pogo Operations Ore Reserves and Mineral Resources) has been extracted from Northern Star's ASX release dated 3 May 2021 titled "Resources, Reserves and Exploration Update" (Northern Star Announcement). A copy of the Northern Star Report is available at [www.nsrld.com](http://www.nsrld.com) or [www.asx.com.au](http://www.asx.com.au). 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 and that in the case of the estimates of the Ore Reserves and Mineral Resources 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 Persons' findings are presented have not been materially modified from the Northern Star Announcement.