



NORTHERN STAR
RESOURCES LIMITED

2018
SUSTAINABILITY
REPORT





OUR POINT OF DIFFERENCE

“We pride ourselves on our point of difference – delivering outstanding business results, without compromising our Core Values.”

– Chris Rowe
Non-Executive Director and Chairman
of ESG & Safety Committee

NORTHERN STAR'S SUSTAINABLE BUSINESS CHARTER

PURPOSE:

To continue to build a safe, quality mining and exploration Company, focussed on creating value for Shareholders.

STRATEGY:

To develop a responsible Company that is attractive to global investors.

SUSTAINABILITY VISION:

Delivering responsible environmental and social business practices that lead to both the creation of strong economic returns for our Shareholders, and shared value for our Stakeholders.

ABOUT THIS REPORT

This is Northern Star's third Sustainability Report, providing guidance on Northern Star's performance within key areas of Environmental, Social and Governance (ESG).

We have adopted a calendar year reporting period and release this Report as a standalone document outside our financial reporting period, to better highlight our ESG performance.

MESSAGE FROM THE EXECUTIVE CHAIRMAN

Dear Stakeholders,

It gives me great pleasure to present to you Northern Star's third annual Sustainability Report. Throughout this Report we voluntarily disclose information on the Company's environmental, social and governance performance for calendar year 2018 (CY2018).

In CY2018, Northern Star continued its strong operational and business performance, growing Reserves and Resources, increasing production rates and delivering sector-leading shareholder returns. It is pleasing to know that this success was achieved in line with our Sustainability Vision. Our success is defined by our ability to deliver a safe, efficient and respectful business.

Our performance highlights in this Report illustrate our ongoing commitment to operating a sustainable business. We proudly recorded no significant environmental or heritage incidents and continued to engage Aboriginal Rangers across our Australian environmental teams. We also maintained our sector-leading safety performance. Our recently developed Mental Health Strategy will see 300 accredited mental health first aiders working within the Company. As we grow the business, our socio-economic contribution increases, with over A\$1B in payments made through taxes, royalties, wages, community support, goods and services, and dividends during the year.

The introduction of our board-level ESG & Safety Committee in 2018, chaired by independent Non-Executive Director Chris Rowe, provides us with a dedicated forum for ensuring our sustainability progress is constantly monitored at the highest level.

We have made a range of changes to this year's Report as a direct result of the increasing value we place on the various elements of sustainability as a means of achieving our strategic objectives and overall business success.



As part of these changes, we will produce our Sustainability Report as an independent document on a calendar-year basis as opposed to previous financial year reporting timeframes. We feel strongly that this timeframe will give greater focus and attention to the sustainability content and our commitment to further embedding the principles of sustainability into the business.

We have also undertaken a formal materiality analysis to identify the sustainability topics which our Stakeholders view as most important and we have used the findings to guide the content of this Report.

The United Nations' Sustainable Development Goals (SDGs) are a framework for businesses to link sustainable development practice and business activity. As a company operating across two distinct regions of the globe, we feel the SDGs present a set of targets that align with our values and policies. Working towards the SDG targets will benefit our Stakeholders, the environment we operate in, our business and our Shareholders. Hence, within this Report we have listed those SDGs that relate to relevant areas of our business activity.

Our progress would not be possible without our people and their ongoing dedication and commitment. I thank each one for their enduring commitment to delivering a safe and sustainable business.

Thank you for taking the time to read this Report.



Bill Beament
Executive Chairman

CY2018 Sustainability Performance Snapshot



SECTOR LEADING SAFETY PERFORMANCE



Our number one Core Value is

Safety

LTIFR 0.6

(Sector 2.7, FY2017: 1.8)

TRIFR 3.7

(Sector 9.6, FY2017: 14.3)

*TRIFR and LTIFR are calculated based on number of recordable injuries per million hours worked



SHARED VALUE GROWTH

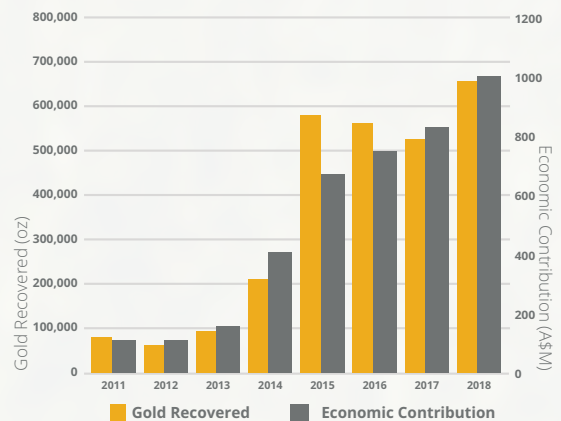


Significant socio-economic returns

to the areas in which we operate

A\$1.07B in payments

(Government royalties, tax, wages, goods and services, interest and dividends)



*Note: 2018 figures are based on the calendar year, all other figures are based on the financial year.



ENVIRONMENTAL RESPONSIBILITY



Strong Environmental Stewardship

Number of materially adverse environmental incidents

0

Number of regulator fines for environmental incident/non-compliance

0

Value of regulator fines for environmental incident/non-conformance

A\$0



PRODUCTION



Record Production Deliverables

Gold sold up 20%

from CY2017 to 656,286oz at an AISC of A\$1,161/oz (US\$871/oz)*

*AUD:USD exchange rate applied 0.75

Reserves increased

to 4Moz and Resources to 20.5Moz

No debt

A\$292M in cash, bullion and investments (as at 31 December 2018)

About this Report



United Nations' Sustainable Development Goals

Northern Star's Sustainability Vision is aligned with the United Nations' Sustainable Development Goals (SDGs), in that they:

- focus on the role of business and enterprise within sustainable development; and
- consider how economic growth can also support a range of social needs including education, health, social protection, employment, climate change and environmental protection.

In this Report we link areas of our business practices and performance which are of most relevance to our Stakeholders, to each of the SDGs as outlined in Figure 1.1.

Materiality

To establish materiality for inclusion in this Report, we engaged with a wide range of Stakeholders comprising:

- Shareholders and custodians;
- local communities;
- employees and contractors;
- suppliers and business partners, and
- governments and regulators.



















Stakeholders were engaged via face-to-face conversations, desktop analyses and participation in ESG benchmarking surveys.

FIGURE 1.1 UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS



The issues material to our Stakeholders that feature within this Report are:

TABLE 1.1 ISSUES MATERIAL TO STAKEHOLDERS

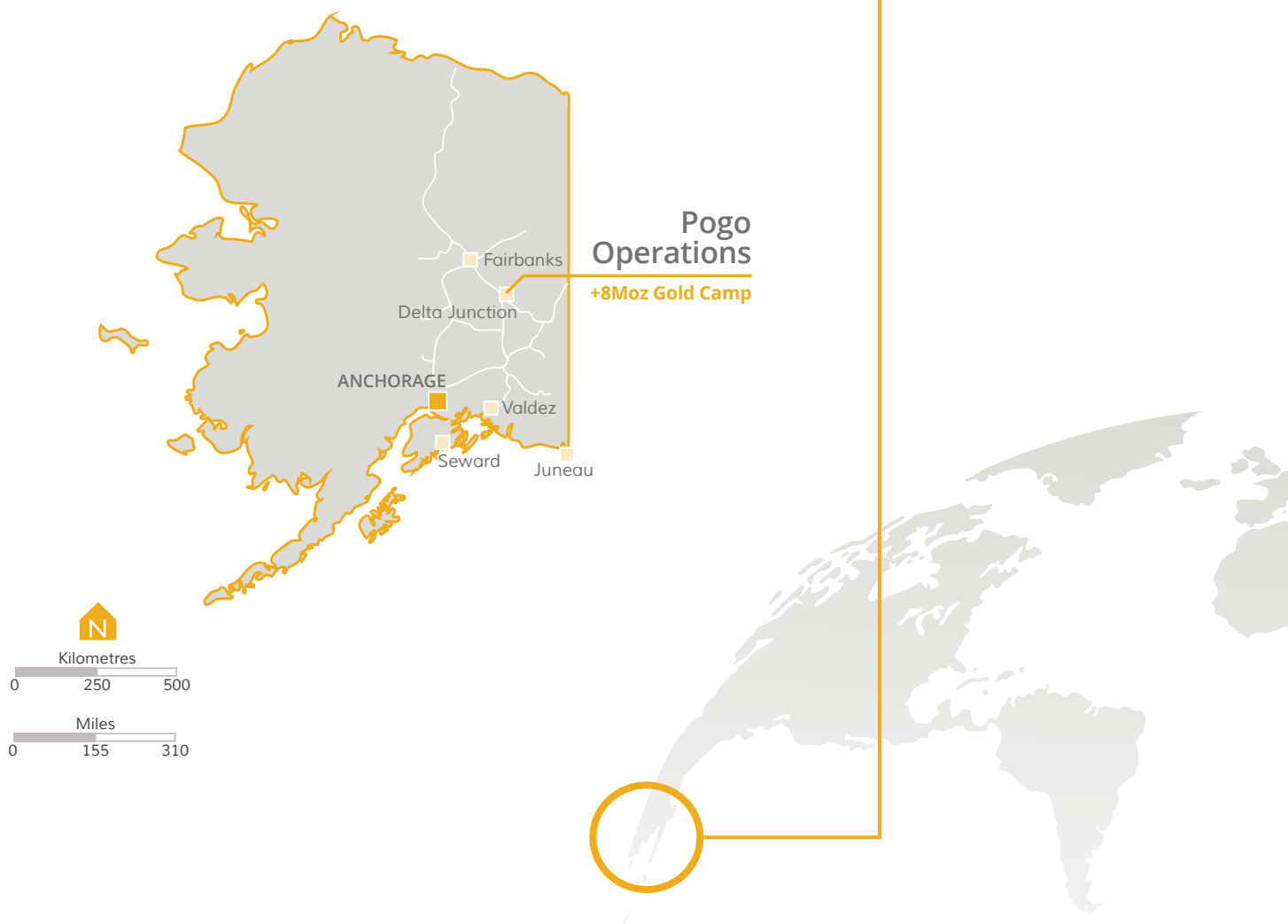
Section	Issues Material to Our Stakeholders	Stakeholders Impacted	UN SDG	Page
Safety Performance	<ul style="list-style-type: none"> • Performance targets • Sector leading results • Leadership • Culture • Training • Contractor management • Emergency preparedness 	Employees, communities, contractors, suppliers	 	10
People Performance	<ul style="list-style-type: none"> • Remuneration • Mental health • Workplace diversity • Developing our people • Graduates and apprentices 	Employees, communities	   	12
Governance, Ethics, and Transparency	<ul style="list-style-type: none"> • Governance and risk • Ethical business practices • Transparency and disclosure 	Shareholders, governments, communities, employees		14
Environmental Performance	<ul style="list-style-type: none"> • Climate change • Waste management • Energy use • Water management • Reclamation and closure preparedness 	Communities, Shareholders, employees	    	16
Social Performance	<ul style="list-style-type: none"> • External stakeholder engagement • Community investment • Socio-economic contribution • Indigenous peoples 	Communities, government	   	20
Modern Slavery Statement	<ul style="list-style-type: none"> • Human rights • Modern slavery risks • Policies, training and due diligence 	Employees, Shareholders, suppliers	 	22

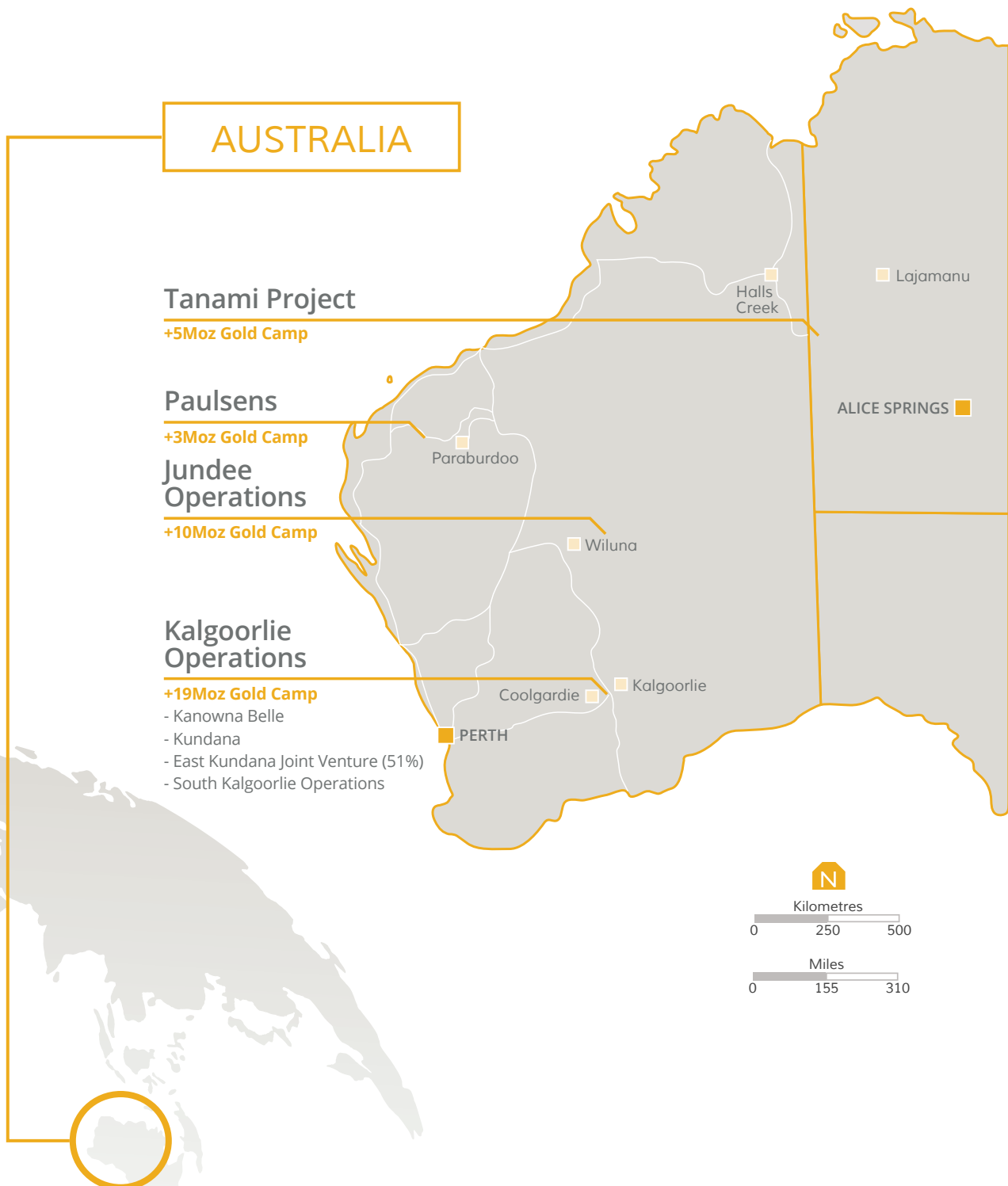
Where We Operate



Northern Star operates three concentrated operational centres – Jundee and Kalgoorlie in Western Australia, and Pogo in Alaska. In addition, Northern Star continues exploration projects at the Tanami Project and Paulsens.

USA (ALASKA)





Safety Performance



The nature of mining presents a range of hazards to our people. Underpinned by our STARR Core Values: Safety, Teamwork, Accountability, Respect and Results, we have successfully implemented a three-pillar strategy of Leadership, Culture and Safety to ensure everyone goes home safely at the end of each shift.

Our 2019 Safety Performance Targets establish a clear performance line of sight for our people and Stakeholders. These targets require zero fatalities and continual improvement and reduction in Lost Time Injury Frequency Rate (LTIFR) and Total Recordable Injury Frequency Rate (TRIFR).

CY2018 Sector Leading Results

LTIFR* reduced by **↓66%**
0.6 (Sector 2.7/ FY2017: 1.8)

TRIFR* reduced by almost **↓75%**
3.7 (Sector 9.6/ FY2017: 14.3)

Both measures have **improved** beyond our set targets and are tracking at well below the industry average **↑**

*Note: LTIFR/TRIFR are calculated based on the number of recordable injuries per million hours worked.

Our safety record is sector leading, and continuous improvement is always our core focus. Northern Star has implemented a three-year plan to ensure our safety performance is not only maintained but further improved:

- **Develop** (*achieved*) – the right guidance material so that all sites have improved tools to identify and control hazards and manage risk efficiently;
- **Consolidate** (FY2019) – ensure the processes are implemented correctly and are adding value across the Company; and
- **Improve** (FY2020) – identifying areas for improvement and implementing those changes.

Culture

Nothing can do more to impact a company's performance than the status of its culture. We see culture as the culmination of our people's values, beliefs and attitudes that drive the behaviour within our Company, and ultimately our performance.

Executive responsibility for safety sits with our Chief Executive Officer, and we believe the depth of our safety representatives plays a critical role in promoting a culture of zero harm. Our Company leaders take the responsibility for setting the values, beliefs and attitudes that generate Northern Star's culture. Everyone who is a part of the Northern Star team is expected to contribute to – and own – our culture.

Emergency Preparedness

Our crisis management plan details the roles, responsibilities and processes our global team will follow in the event of a significant emergency or crisis. The team includes representatives from operations, legal, commercial, safety, environment and social responsibility, media, investor relations and external affairs.

All Northern Star sites participate in annual training and simulation exercises involving both the mine and corporate crisis management teams, to ensure in the rare instance of an emergency, our people know how to respond accordingly.

Our sites are required to identify, mitigate and control operational risk. For material risks, an emergency management plan is required to ensure we respond quickly through adequate preparation and clear points of escalation.



Leadership

Visible leadership is integral to driving positive cultural change to ensure a safe working environment exists. This requires continuous improvement, and in recognising this we have a strategic suite of leadership initiatives that develop our leadership capability. Coupled with the right business tools and processes we aim to ensure our people can make quality, well-informed decisions, and drive positive safety performance.

Active Field Leadership supports our people to have "active" face-to-face conversations with both contractors and staff in the field, to sharpen the sharing of information, identify risks and task improvements earlier, enabling our focus on continuous safe performance.

Our Leadership Development Program allows our people to expand their potential by enabling them with the skills and knowledge to improve how they think, communicate and act. This improves interpersonal engagement, empowers them to lead change, and further develops the capabilities and performance of our teams.

Training

Northern Star is committed to the development and training of all our people to ensure they have the skills, resources and support required to reinforce our values, deliver high performance, and further enhance our culture.

This commitment is supported by extensive competency-based training through a combination of both on-the-job learning and education via our Learning Management System (LMS). Our LMS provides a centralised source of information and training, consistently across the whole Company.

Contractor Management

We believe we can positively influence other organisations to adopt our high standards of operations to benefit Stakeholders and society beyond our operational areas. Northern Star sees responsible contractor management as one of the many shared value contributions we can deliver.

Northern Star sites always operate in partnership with contractors and suppliers. Our OHS Management System defines the requirements, consistent with our Code of Conduct, policies and standards to which all Northern Star business partners must subscribe.

Our major business partners are required to complete our prequalification check and are comprehensively evaluated against criteria including safety, health, environment and social responsibility (Indigenous peoples, modern slavery) criteria, as well as risk management, internal auditing and employee management.

With the introduction of the Australian Modern Slavery Act 2018 (Cth), we have commenced a process to methodically screen our supply chain for risks of modern slavery and human rights violations.



“Our leaders are accountable for promoting a safety culture where everyone is heard and knows they are valued.”

– Stuart Tonkin
Chief Executive Officer

People Performance



At the centre of Northern Star’s success will always be our people. Attracting, developing, retaining and supporting employees to be at their best is the foundation of our sustainability and growth, and a strong differentiator in a market competing for talent.

Employee retention and attraction (in relation to which remuneration is a significant feature) is a prerequisite to the successful execution of the Company’s Five Year Plan to increase shareholder value.

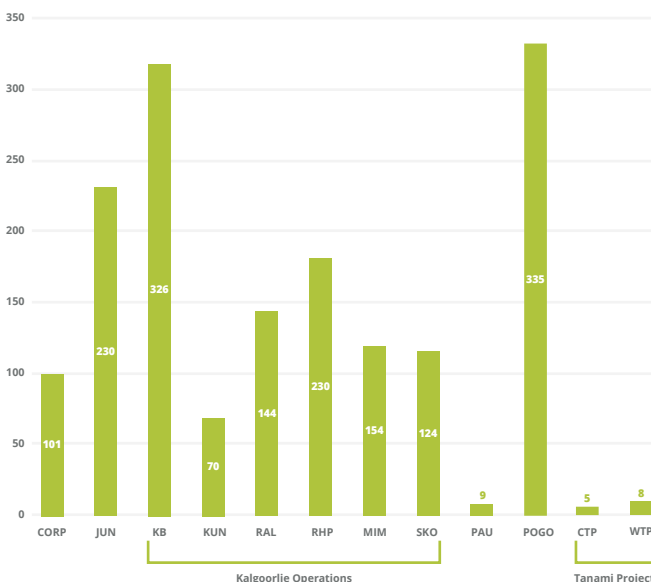
The creation of an Executive Manager – Capability & Culture role in 2018 represents Northern Star’s commitment to human capital to support and develop our highest performers, identify emerging talent, coach and develop graduates, and build a culture of high performance consistent with “the Northern Star way”. This Executive role denotes a commitment to strategy and resources at the highest level of the business.

The role also brings together the focus areas of culture, safety and wellness (physical and mental) – recognising that these are critical success factors and cannot be considered in isolation to each other.

Our Workforce

We had 1,736 direct employees and 851 contractors as of 31 December 2018, taking our total workforce to 2,587 at an average age of 38 years old. Approximately 82% of our employees in the Goldfields Region live residentially supporting the community.

FIGURE 4.1 EMPLOYEE NUMBERS



“When it comes to mental health and wellness, there is an inextricable link between a well workforce, well families and ultimately a well community.”

– **Peta Slocombe**
Executive Manager – Capability & Culture

Diversity

Our female participation rate at 31 December 2018 was 17% (Australian industry sector average is 16%). The Company continues to increase its female participation at the senior level and has one female Director (20% participation), two female Executives (25% participation) and two females in senior leadership roles (13% participation).

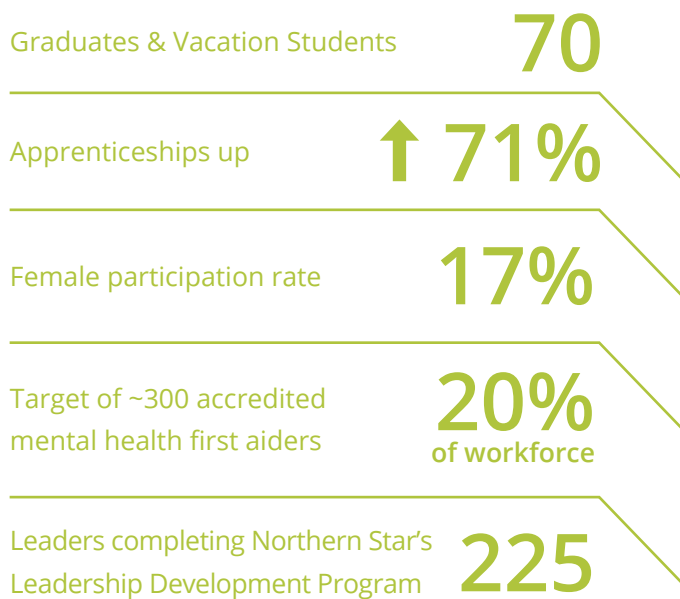
Our direct Indigenous employment rate at 31 December 2018 was 1.2%. This figure does not include our contractors or the engagement of our Aboriginal Ranger teams in Australia for environmental works at Paulsens, Jundee, Kalgoorlie, Western Tanami and Central Tanami.

Northern Star has assigned resources and funding to actively investigate, develop and implement innovative solutions that drive a better overall business outcome. These potential solutions target all aspects of the Company’s operations and require a diversity of input to thrive.

Developing our People

CY2018 saw us continue to build on the capabilities of our diverse group of leaders, which contributes directly to us reaching the Company’s strategic objectives as well as continuing to deliver greater value to Shareholders. Northern Star are proud to have had 225 of its people complete the Leadership Development Program #1, with Leadership Development Program #2 held in January 2019. The introduction of a talent ID program, leadership profiling and training, and high performing team programs were highly successful and will be further built upon with new initiatives in 2019.

Additionally, secondment opportunities have been presented to our employees to gain international experience at our Australian operations and our new Pogo Mine in Alaska.



Graduates and Apprentices

Northern Star continues its trend of employing high numbers of apprentices across its operations with 24 accepted roles, of which three were females. This number is a 71% increase from last year's intake.

Northern Star continues to support the industry's future through maintaining high numbers of quality graduates into our Graduate Program across the disciplines of mining, geology, geotechnical, metallurgy and survey.

Even with a challenging labour market, due to lowering university enrolments in mining related disciplines, our 2018/2019 Graduate intake consisted of a significant proportion of graduates and vacation students, 34 and 36 respectively, across all operations. Over the two-year program, graduates receive extensive practical experience, developmental training, and mentoring and support from our industry experts, which aims to provide the foundations for our young professionals to lead the way in the growth, sustainability and development of the future of the mining industry.

2018 also saw the introduction of Northern Star's Undergraduate Program. This provides a unique opportunity for students to receive ongoing employment throughout their studies to apply their theoretical learnings in a practical environment, build a network of colleagues and fast track their future careers.

Northern Star also plans to adapt our programs within the United States since the Company's acquisition of Pogo Mine, with key universities targeted to provide the opportunity and attraction benefit of cross-pollination between Australian and US Graduate Programs.

Mental Health and Wellbeing

Mental illness is described by the World Health Organisation to be "the greatest issue impacting mankind". It is the third biggest burden of disease in Australia and, the greatest cause of preventable death in those under 45 years old – a demographic strongly reflective of our workforce. Northern Star believe that helping its people to understand, support, and enhance their own mental health is a commitment to the employee, their team members, the families they go home to, and to safety in the workplace. Noting the recommendations of the FIFO Inquiry into Mental Health recently conducted in Western Australia, Northern Star's mental health strategy will raise the bar on industry standards.

Northern Star have developed a Mental Health strategy that will see over 300 Mental Health First Aiders accredited within the business globally before the end of the FY2019. Northern Star will shortly introduce mandatory mental health leadership awareness training, and provide all employees with an opportunity to receive personalised mental health programs.

Mental health is a strong pillar of our Safety culture given its impacts on sleep, substance use, fatigue, concentration, creativity and team work. These programs are aligned strongly to our STARR Core Values and are also a significant resource within the communities in which Northern Star employees live and work.

"this [Honorary Doctorate] reflects the achievements of the Northern Star team on so many levels"

– **Bill Beament**

Executive Chairman, on receiving an Honorary Doctorate of Engineering from Australia's Curtin University, February 2019, for his positive contribution to mining education in Western Australia.

Governance, Ethics and Transparency



As an Australian Securities Exchange (ASX) listed gold mining company, we are subject to, and conduct our business in accordance with, the ASX Listing Rules and the laws and regulatory requirements of the Australian and United States of America jurisdictions within which we operate.

Northern Star's Board and management team are committed to upholding the highest standards of corporate governance, including a high level of compliance with the ASX Corporate Governance Council's 'Corporate Governance Principles and Recommendations' (ASX Recommendations).

We understand that being transparent, especially regarding governance and risk, is a material issue for Shareholders and Stakeholders alike. We continually review our level of transparency and disclosure to ensure those outside our business can make an accurate assessment of how the business is run.

Governance and Risk

The Board of Directors are ultimately responsible and accountable for Northern Star's positive corporate culture, compliance and corporate governance, including ensuring compliance with the Company's Code of Conduct, corporate policies, procedures and standards, and the legislative and regulatory framework in which we operate. Our principles and processes are regularly reviewed to ensure we observe and maintain the highest standards of corporate governance.

The majority of the Board, being four of the five Directors, are Non-Executive Directors and considered independent in accordance with the Company's Policy on Assessing the Independence of Directors, in line with the ASX Recommendations. As the Executive Chairman is not an independent Director, the Lead Independent Director acts as Chairman of the Board in the Executive Chairman's absence or where the Executive Chairman is unable to act due to his lack of independence. The performance and skillset of the Board is reviewed by the Lead Independent Director in conjunction with the Chairman each reporting year. Regular meetings of the independent Non-Executive Directors without management present promotes additional opportunities for frank dialogue and robust governance.

The Board oversees Northern Star's sustainability objectives. The Board's Audit & Risk and ESG & Safety Committees also have responsibility to assist with governance and risk management oversight.

The Audit & Risk Committee oversees the internal financial control systems and risk management systems and assessments, and makes recommendations to the Board. The Committee has three members, all Non-Executive Directors, one of whom has relevant financial qualifications and experience.



The ESG & Safety Committee assists the Board to implement our Sustainability Vision, providing deeper oversight in relation to workplace health and safety, diversity, environmental risk management, community and social responsibility, business ethics, corporate governance and commercial innovation. The ESG & Safety Committee comprises the full Board, chaired by an independent Non-Executive Director with demonstrable, relevant experience - currently Chris Rowe.

We acknowledge that there is risk associated with all business activity and that the assessment, management and considered acceptance of risk ensures both the sustainability and growth of our business.

Key Highlights

Northern Star drives an effective risk management culture by:

- identifying that risk management is a fundamental aspect of the Company's decision-making processes;
- seeking to empower all levels of the business to assess and manage risks;
- ensuring material risks are identified, objectively assessed and where appropriate risk mitigation actions are affected to reduce residual risk;
- documenting and reviewing risk registers, which are regularly reported to and assessed by the Audit & Risk Committee; and
- the establishment of crisis management systems across the business.

For further information, see Northern Star's 2018 Corporate Governance Statement located on the Northern Star website, under Corporate Governance (www.nsr ltd.com/about/corporate-governance).

Ethical Business Practices with Integrity

At Northern Star, we uphold lawful, moral and ethical practices to a high standard in our business operations and our dealings with suppliers, Stakeholders and the local communities in which we operate.

We care about how Northern Star achieves and delivers its outstanding results. Our STARR Core Values, Code of Conduct and policy framework define how we hold our Directors, management and employees accountable, to exercise integrity in their decisions and behaviour, and provide a moral compass for the way Northern Star does business, operating in the global business community as a valued employer, business partner and community member.



Our Code of Conduct sets out Northern Star’s objectives of:

- increasing Shareholder value within an appropriate framework which safeguards the rights and interests of the Company’s Shareholders and the financial community; and
- complying with the Company’s governance framework of control and accountability, with openness and integrity.

Our Anti-Bribery and Anti-Corruption Policy covers all aspects of our business.

We encourage employees and other Stakeholders to report known or suspected breaches of the Code of Conduct and any other unethical, illegal or improper behaviour. Our Whistleblower Policy provides for a confidential, anonymous and retaliation-free process for people to report their concerns. Whistleblower notifications, Code of Conduct concerns and related party declarations are standing items on all Board agendas.

Transparency and Disclosure

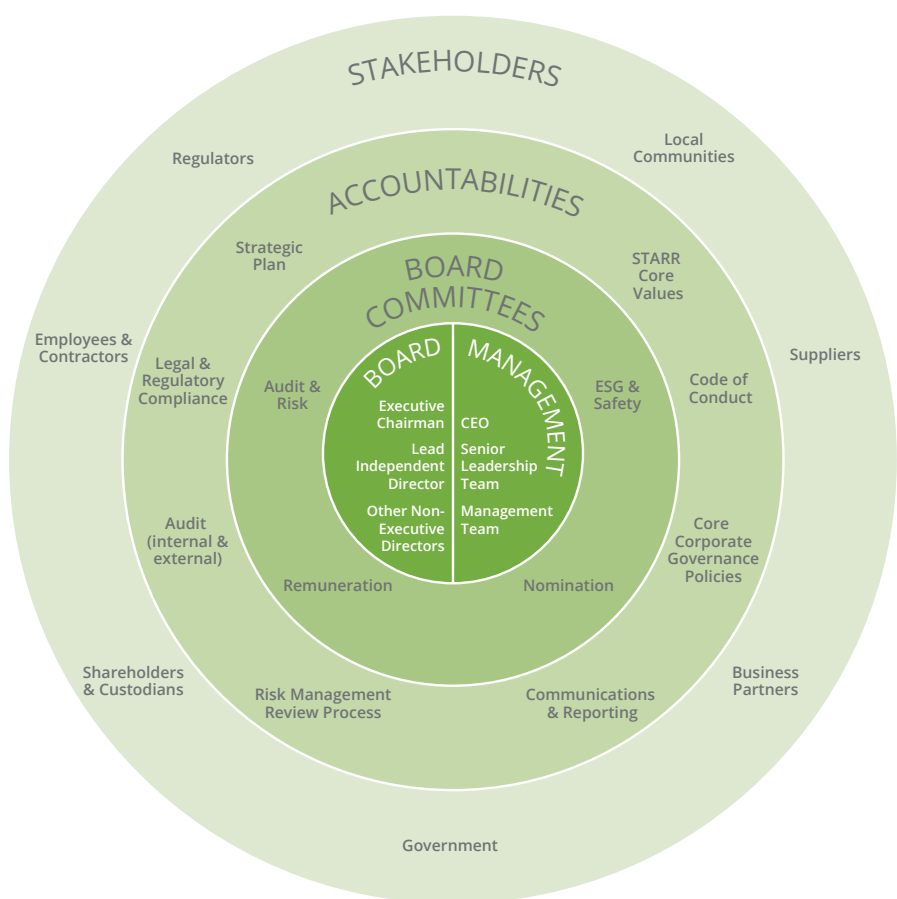
In addition to the rigour applied to its continuous disclosure practices, Northern Star regularly reviews and enhances its periodic disclosures.

As in previous years, we invited Shareholders to submit questions to our Board and Auditors in advance of our Annual General Meeting and welcomed further questions from the floor.

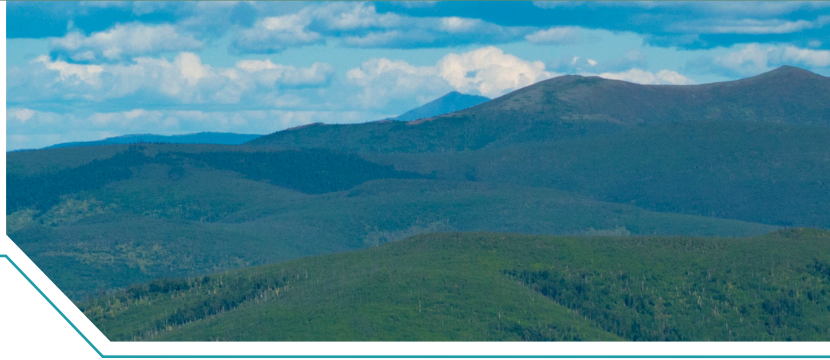
This provides opportunities for deeper clarity, insight and transparency on our business operations and governance practices, for the benefit of all Shareholders and Stakeholders.

We continue to voluntarily publish the Company’s annual Tax Corporate Governance Statements as part of our commitment to transparency. Our voluntary reporting under the Australian Voluntary Tax Transparency Code is located on the Northern Star website, under Corporate Governance (www.nsr ltd.com/about/corporate-governance).

Our Governance Framework



Environmental Performance



Under the banner of our STARR Core Value ‘Respect’, Northern Star places significant value on the need to ensure our business activities do not result in undue harm to the environment.

We continuously monitor, review and report our performance against our environmental commitments, no matter where we operate. Our publicly disclosed Environmental Policy ensures we always strive to meet and, where possible, exceed our legal and permit obligations to deliver the best possible environmental and social outcomes.

Delivering environmental and social outcomes is achieved by the ongoing implementation of our Environmental Management System, which contains Standards that set the minimum company-wide performance criteria for specific risk areas:

- Environmental Management System Standard
- Environmental Risk Management Standard
- Incident Reporting Standard
- Management of Cultural Heritage Standard
- Energy and Climate Change Standard
- Water Management Standard
- Mine Closure Standard
- Biodiversity Standard
- Waste Management Standard

All vendors are bound to the requirements established in our Environmental Policy and Environmental Management System and Standards.

Number of materially adverse environmental incidents

0

Number of regulator fines for environmental incident/non-compliance

0

Value of regulator fines for environmental incident/non-conformance

A\$0

“As a responsible miner, we respect all aspects of the environments that we operate in with a strong focus on performance beyond regulatory compliance.”

– Luke Creagh
Chief Operating Officer



Waste Management

We continued to follow our Waste Management Standard in CY2018 to continually improve our management of waste and deliver improved environmental and health outcomes.

Our Waste Management Standard sets out the minimum requirements for managing risks relating to waste associated with our business activities. Risk assessments are undertaken when a new waste stream is identified, or significant changes are made to an existing stream or storage/treatment facility. Subsequently, detailed waste management plans are put in place to ensure risks are reduced to acceptable levels and in order to meet the Company's legal obligations.

Air Quality and Emissions

We report our Australian operations' Scope 1 and Scope 2 greenhouse gas (GHG) emissions to the Australian Government's Clean Energy Regulator, via the National Greenhouse and Energy Reporting Scheme (NGERS). This information is publicly available at www.cleanenergyregulator.gov.au/NGER.

Our Australian operations' emissions per substance are reported via the Australian Government's National Pollution Inventory. This information is publicly available and can be accessed at www.npi.gov.au.

Pogo Mine's emissions from air, water and solids are reported via the United States Government's Toxics Release Inventory. Toxics Release Inventory National Analysis reports are available at www.epa.gov/trinationalanalysis.

Pogo also reports air emissions to the Alaskan Department of Environment and Conservation (ADEC) and the Environmental Protection Agency in accordance with permit requirements.

For the purpose of this Report, Scope 1 and Scope 2 GHG emissions were calculated based on the NGERS requirements for all sites, including Pogo.

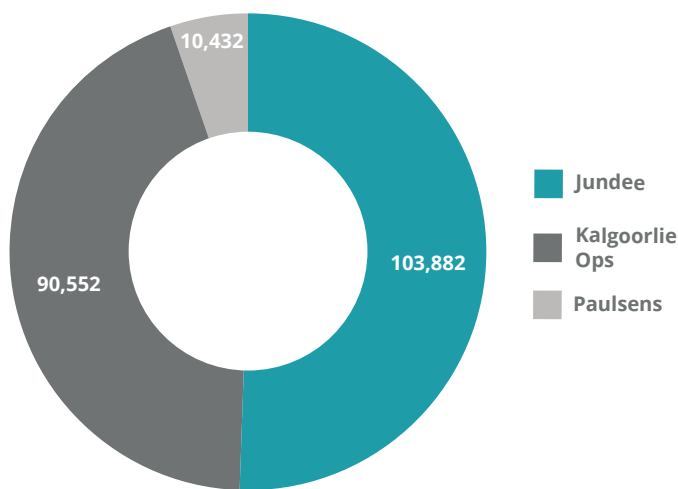
TABLE 6.1 GHG EMISSIONS

CY2018 Total Scope 1 GHG Emissions (t CO ₂ -e)	209,455
CY2018 Total Scope 2 GHG Emissions (t CO ₂ -e)	160,988

The bulk of our Scope 1 carbon emissions (generated by Northern Star) come from diesel and gas used to generate electricity and power our mining equipment fleet.

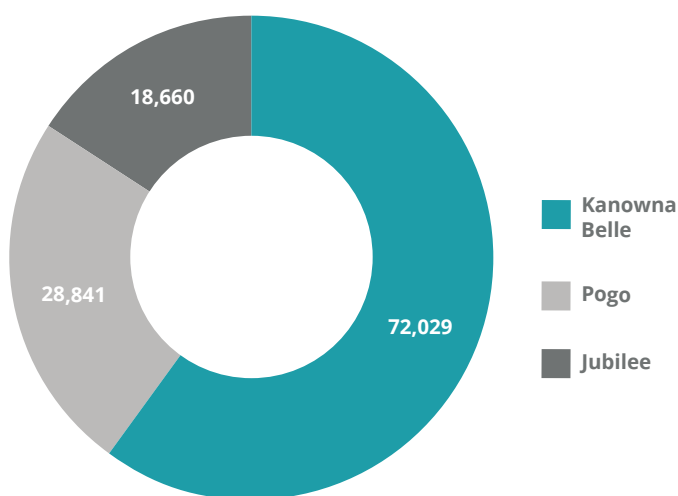
The vast majority of our Scope 2 carbon emissions (generated by others, for Northern Star) come from the purchasing of electricity, and the transporting of goods via truck courier to our remote operations.

FIGURE 6.1 MAIN SCOPE 1 GHG EMISSION SOURCES BY PROJECT CENTRE



The largest single point source of Scope 1 GHG emissions comes from our Jundee Mine via the power plant that supports the processing mill and mine. For the most part, this electricity is produced in the 18MW reciprocating engine gas power plant, with diesel used during times of abnormally high-power demand.

FIGURE 6.2 MAIN SCOPE 2 GHG EMISSION SOURCES BY FACILITY



The Kanowna Belle processing plant in Kalgoorlie is responsible for much of our Scope 2 GHG emissions as it is powered by the State electricity grid.

Energy Use and Production

TABLE 6.2 ENERGY PRODUCED

CY2018 Total Energy Produced (GJ)	712,222
CY2018 Total Energy Consumed (GJ)	4,942,494

Our primary source of energy production is the gas-fired power plant at the Jundee operation, producing 519,222GJ of electrical energy in 2018. The majority of our Kalgoorlie and Pogo operations' energy supply is purchased from the relevant state power grid.

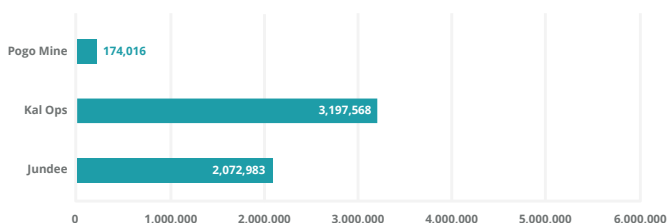
Over 90% of our total energy consumption is from our Jundee, Kalgoorlie Operations and Pogo Mines.

Tailings and Waste Rock

TABLE 6.3 WASTE ROCK AND TAILINGS

CY2018 Waste Rock Produced (tonnes)	2,796,480
CY2018 Tailings Produced (tonnes)	5,444,567

FIGURE 6.3 TAILINGS PRODUCTION PER SITE



Of the 3.2Mt of tailings produced by our Kalgoorlie Operations, 542,226t resulted from the processing of third-party ore. This includes ore attributed to our joint venture partners and third-party toll treatment utilising our processing plants.

At Pogo Mine:

- Northern Star operates a drystack tailings facility (DSTF).
- 85% of the total tailings produced do not contain cyanide.

Pogo Mine manages two tailings waste streams from the mill extraction process: a gravity-flotation waste stream and cyanide leach waste stream. These streams are managed separately to comply with State permits and cyanide waste management regulations. Material from the gravity-flotation circuit represents 85% of the total tailings mass and does not contain cyanide. The tailings are filtered and transported onsite to the DSTF for permanent disposal. Material from the cyanide leach circuit comprises the remaining 15% of the total tailings mass. All cyanide contacted tailings are detoxified and combined with cement to form paste backfill in the underground mine. The cyanide destructed tailings contain fewer than 20 milligrams per liter (mg/L) of weak acid dissociable cyanide. This process ensures that cyanide material is immobilised underground, preventing environmental impact.

Water Management

The right to water is a fundamental human right and water withdrawal, discharge and movement can have significant impacts on local Stakeholders, the surrounding natural environment and the business. Our Company-wide Water Management Standard ensures our workforce and contractors are aware of, and comply with, our legal obligations regarding water, and that associated water risks are managed appropriately.

Our Energy and Climate Change Standard requires us to identify and manage climate related risks to our business. Sustainable water management is only achieved through the consideration of climate change related risks to water and ensuring management strategies are put in place to mitigate those risks. Our climate change risks, including those associated with water, are disclosed within the Climate Change section of this Report.

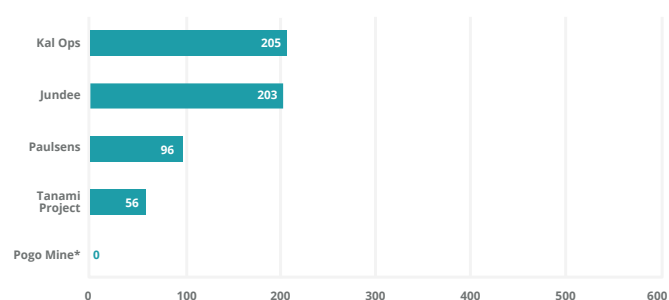
Water Consumption

Net fresh water consumption for 2018 was 560.07ML. Fresh water is defined as water that meets drinking water standards with minimal processing. Net water consumption is total fresh water use, minus discharges back into the environment.

The Pogo Mine operates with a net neutral water balance, all fresh water that is extracted is returned to the environment. We are permitted to discharge treated (high quality) water into the Goodpaster River as part of our mining operations.

Rigorous process management and compliance with robust regulatory standards ensures that the Pogo Mine has no material negative impact on the river ecosystem. Our environmental monitoring program routinely compares water quality data to pre-mine conditions, confirming that water discharges have had no material negative impact to the river or fish spawning habitat.

FIGURE 6.4 NET WATER CONSUMPTION (ML)



*Note: Pogo Mine operates with a net neutral water balance, returning all extracted fresh water back into the environment.

Reclamation and Closure Preparedness

A primary focus for local communities and governments alike is being confident in our ability to restore ecosystems to areas in which we operate. Adequate planning and resourcing for end of mine closure is a key consideration during the operational phase.

Our Mine Closure Standard sets out the requirements for responsible mine closure planning, including detail on aspects of physical risk management and remediation, to responsibly estimating the cost of mine closure and ensuring adequate capital is available when required. All our operations globally have regulator-approved Mine Closure Plans and related financial assurance. These are reviewed on a regular basis to ensure accuracy of both the scope of work and financial liability.

For CY2018 we actively rehabilitated over 400 hectares of land. Exploration rehabilitation at our Paulsens and Kalgoorlie Operations were the largest contributors.

Climate Change

In line with SDG 13: Climate Action, Northern Star acknowledges that there is the potential for climate change risk with all business activity and that the assessment, management and considered acceptance of this risk ensures both the sustainability and growth of our business.

This view aligns with SDG 13 Targets:

- 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; and
- 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

Through our Energy and Climate Change Standard and our Risk Management Policy, we ensure climate change risks are considered at a local level and incorporated into our Company risk register. This ensures business risks associated with climate change are considered and appropriate mitigating practices are put in place to ensure that both the business is protected and that our activities do not

unknowingly contribute to climate related impacts. Our Board-level Audit & Risk Committee reviews these risks on a regular basis.

In CY2018, several climate-related risks (water and energy pricing) were included in our Company risk register, to assess the potential impact of climate change projections on our business. These risks were updated post the acquisition of the Pogo Mine in Alaska. Below are our highest priority climate-related business risks.

Environmental and Social Risks

Northern Star is considering its climate-related and other emerging risk assessments and disclosures, in light of the commentary to Recommendation 7.4 of the ASX Recommendations (4th edition, February 2019).

TABLE 6.4 CLIMATE CHANGE RISKS

Risk	Description	Contributing Factors	Impact	Current Mitigating Practices	Future Mitigating Practices
Altered water availability.	Climate change occurring within operational areas resulting in material increase or decrease in water balance that negatively impacts the operational or approval capacity of the business.	Changing (warming) climatic conditions can alter water availability, by either reducing water available for ore processing through reduced rainfall or increasing water discharge needs beyond permitting allowances through ice melt and increasing rainfall.	Production loss. Inability to gain groundwater abstraction permits for processing of ore. Having to locate alternative water sources further afield from existing plant infrastructure. Significantly increasing discharge rates, unable to gain discharge approvals, unable to dewater mines or expand processing capacity.	Compliance with regulator approved Ground Water Operating Strategies. Continuous quarterly ground water reviews and modelling interpretations. Increased alternative water usage through pit water harvesting and increased mine dewatering water - replacing fresh water extraction. Monitor seasonal rainfall patterns and review modelling data against accepted climate predictions. Implement and review Company Water Management Standard and Energy and Climate Change Standard.	Review the Intergovernmental Panel on Climate Change (IPCC) Climate Report 2018. Review other reputable climate science data on temperature increase scenarios and correlated rainfall pattern change predictions. Use findings to conduct risk assessments and related management plans for identified risks. Monitor season permafrost conditions and review modelling data against accepted climate predictions.
Uncertain energy market pricing.	Energy prices may increase due to carbon charges and/or adoption of more carbon-efficient energy source alternatives.	Increasing public and political support to adopt less carbon intensive means of generating energy to meet the national Renewable Energy Target.	Increase cost of energy per unit.	Implementation of the Innovation Board in relation to Climate Change, to identify opportunities to become more energy efficient and adopt lower carbon means of generating energy.	Reduce utilisation of high-carbon energy.

Social Performance



The increasing scale and success of the business, as well as expanding the operating localities, allow Northern Star to deliver substantial socio-economic outcomes to local communities and governments.

We acknowledge that our socio-economic contribution is a material issue for Stakeholders, and communities and governments alike are keen to ensure we create and deliver value outside our business.

This is in line with our Sustainability Vision, which drives us to generate strong economic returns for Shareholders and shared value for our Stakeholders.

Record economic value add **A\$1.07B**

Corporate tax and Government royalties **A\$109M**

Community investment **↑ 28%**

“In earning the trust and respect of our Stakeholders, we acknowledge they want to see economic returns and opportunity, as well as environmental responsibility.”

– **Chris Rowe**
Non-Executive Director and Chairman of the ESG & Safety Committee

External Stakeholder Engagement

Northern Star’s framework for managing a diversity of important relationships with its Stakeholders is shaped by both the Stakeholder Mapping Standard and Stakeholder Engagement Standard.

We appreciate that stakeholders’ points of interest range widely between groups and individuals, and that a systematic approach to both identifying key-Stakeholders for particular areas and issues is just as important as having a mutually agreed method of engagement.

All our operating mines and processing facilities have dedicated Environment and Social Responsibility (ESR) teams who act as the point of contact for external Stakeholders.

We continue to implement complaints and grievance mechanisms across all our operations, proactively encouraging Stakeholders to formally raise a grievance or make a complaint if they have concerns about our business activities, in the knowledge that their matter will be respectfully dealt with.

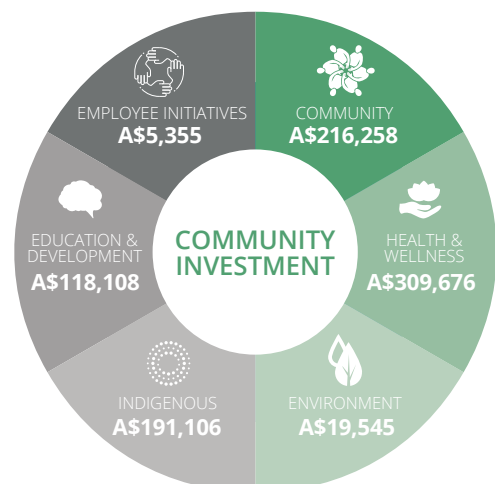
No official complaints were received from external Stakeholders during CY2018.

Community Investment

In CY2018, we increased our direct financial community investment by 28% (from FY2018) to over A\$860,000 across a range of community initiatives that align with our Community Investment Framework.

We also revised our Donations and Sponsorship Policy to further increase our investment in the communities in which we operate. In addition to our financial contribution to communities, our people are now encouraged to take a day’s paid volunteer leave to support a worthwhile not for profit cause.

FIGURE 7.1 SOCIO-ECONOMIC BREAKDOWN





Socio-economic Return to Society

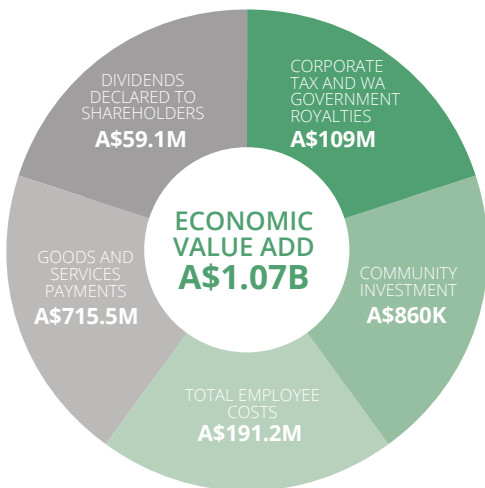
Northern Star continues to generate some of the highest returns to Shareholders of any gold production company in Australia. We consistently achieve this level of performance through responsible allocation of capital, empowering our people and maintaining a laser focus on both efficiency and productivity.

Our disciplined operating approach allows us to deliver a fair share of our revenue to external Stakeholders such as governments, regional and local communities in the form of state royalties, corporate taxes, wages, direct donations and goods and service payments.

We understand that our socioeconomic return to society is a material issue for our Stakeholders.

In CY2018, Northern Star generated over A\$1.07B in economic value. We were proud to have paid over A\$109M to governments in gold royalties and corporate tax, which represents close to double our shareholder dividends for the same period.

FIGURE 7.2 ECONOMIC VALUE ADD



Indigenous Peoples

We acknowledge the diversity of first peoples of Australia and Alaska, whose lands we are privileged to operate on. We recognise their rights and values and respect their cultures as indigenous peoples.

Supporting their enduring connection to country and culture aligns with our core values and providing economic opportunity for Indigenous people is a key way for us to create shared value for this important stakeholder group. We continue to support Aboriginal rangers with professional fee for service environmental compliance work at our Australian assets, which since 2014 have delivered A\$700,000 directly to Aboriginal ranger groups.

“A\$700,000 paid to Australian Aboriginal Rangers for professional environmental services.”

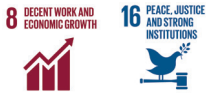
Responsible heritage management is consistently raised as a material issue by our first people’s stakeholders. Our Management of Cultural and Heritage Sites Standard ensures we take a respectful approach to interacting with areas of cultural concern and any landforms or artefacts that reside within them.

CY2018 Heritage Incidents

Number of heritage incidents*	0
Number of heritage-related infringements**	0
Cost of heritage-related infringements	A\$0

*Direct unauthorised physical damage to a site of specific heritage value
 **Regulator administered penalty for breach of heritage-related legislation

Modern Slavery Statement



Northern Star acknowledges human rights as a legitimate set of moral principles of which every human being is inherently entitled to regardless of their personal, social, economic, cultural or geographic circumstances. We recognise our role in protecting the human rights of all people involved in, or impacted by, our business practices.

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 acknowledges that modern slavery in its supply chain is a business risk that requires action to identify and mitigate. Northern Star welcomed the Australian Government's introduction of the Modern Slavery Act 2018 (Cth).

Northern Star is committed to:

- complying with the United Nations Universal Declaration of Human Rights and the Guiding Principles on Business and Human Rights;
- acting ethically and with integrity in all aspects of our business;
- in-depth questioning of supply chain Stakeholders on a regular basis to identify and monitor the risk of modern slavery occurring in any part of our business; and
- taking meaningful action where modern slavery risks are heightened or modern slavery is identified, as a result of supply chain screening processes.

Policies and Procedures

Northern Star maintains a collaborative approach with its supply chain, preferring alignment with suppliers and business partners who share Northern Star's values, ethics and sustainable business practices. Northern Star has adopted a Code of Conduct which requires its Directors, management, employees and contractors to act with honesty, fairness and integrity, and observe the rule and spirit of the legal and regulatory environments in which we operate.

Our suppliers and contractors are also required to adhere to other Northern Star core governance policies, including the Risk Management Policy under which Northern Star commits to "ensuring the safety and wellbeing of all our employees and contractors."

Modern slavery risks are assessed within Northern Star's broader risk management framework, overseen by the Audit & Risk Committee.

Our Whistleblower Policy provides for a confidential, anonymous and retaliation-free process for people to report their concerns about breaches of the law or Northern Star's policies. Whistleblower notifications, Code of Conduct concerns and related party declarations are standing items on all Board agendas.

Our Supply Chain

Our global supply chain is made up of around 2,000 contracted suppliers, many of which are based locally in relation to our operations. Our supply chain occupies the following sectors:

- Operational, technical and construction services;
- Bulk commodities;
- Equipment and parts supply; and
- Professional and administrative services.

Training

Our employees who have direct responsibility for procurement and supply chain management have attended externally run information sessions and industry working group meetings on modern slavery. They have access to training and resources to assist them to implement processes to identify and manage the risk of modern slavery practices infiltrating our supply chain. We intend to formally train our procurement personnel on modern slavery risks going forward.

Due diligence

In early 2019 Northern Star surveyed its current suppliers of goods and services to our business, to allow us to:

- identify any known or suspected modern slavery breaches in our supply chain, or particular risk areas; and
- understand what action is being taken by suppliers in relation to modern slavery risks or breaches.

Some insights from the results of this survey appear overpage.

Northern Star is not aware of any modern slavery breaches or human rights violations in our business operations or supply chain.

The results of this survey enable Northern Star to collaborate with suppliers to promote and develop within our supply chain a deeper understanding of Northern Star's expectations and standards in relation to human rights and the risks of modern slavery breaches in our supply chain. Northern Star is developing a dedicated supplier code of conduct, to include a commitment in regard to undertaking modern slavery due diligence or audits.



FIGURE 8.1 DIRECT SUPPLIERS THAT UNDERTAKE MODERN SLAVERY AUDITS OR DUE DILIGENCE

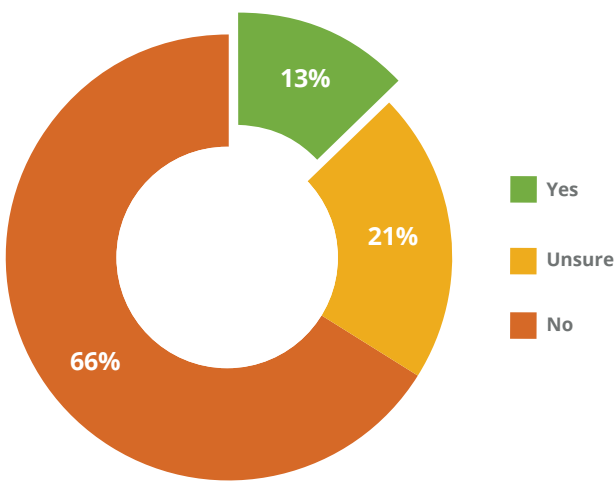


FIGURE 8.3 DIRECT SUPPLIERS THAT OPERATE IN INDUSTRIES WITH THE HIGHEST RISK* OF MODERN SLAVERY

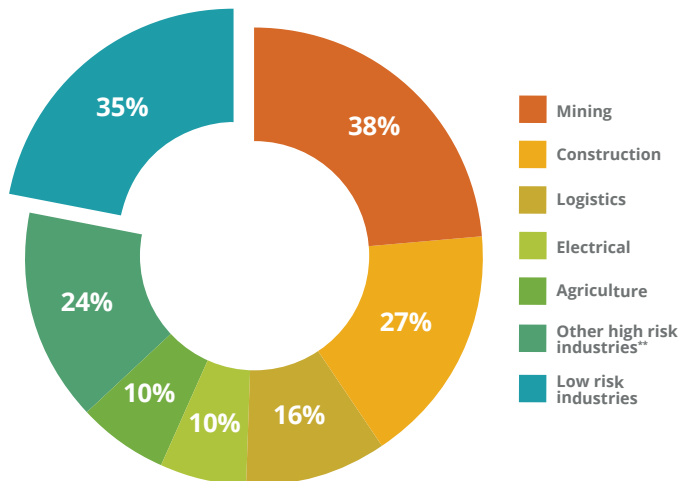
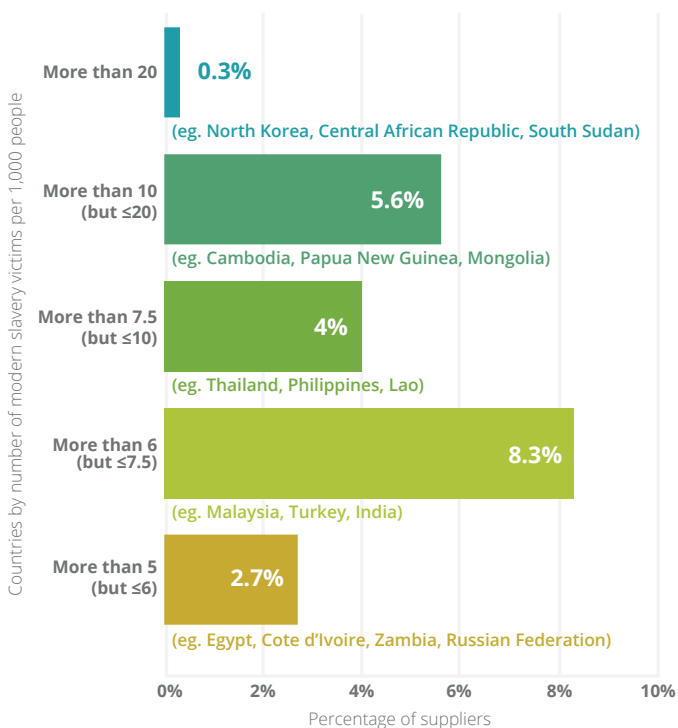


FIGURE 8.2 DIRECT SUPPLIERS WHICH OPERATE IN COUNTRIES WITH THE HIGHEST RISK* OF MODERN SLAVERY



*Industries that are understood to present a significant risk of slavery and human trafficking (Strengthening Protections Against Trafficking in Persons in Federal and Corporate Supply Chains. Verité, January 2015). Various suppliers operate in more than one industry.

** Other high risk industries' includes: fishing, forestry, healthcare, hospitality, cleaning and textiles.

*According to the estimated prevalence of modern slavery victims by country in Walk Free Foundation's 2018 Global Slavery Index (GSI).



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ASX Disclosures

In this Report:

- The Mineral Resources (all operations) and Ore Reserves (Australian operations) information is extracted from the reports entitled "Reserve and Resource Update and Corporate Outlook" dated 2 August 2018, "Pogo JORC Resource" dated 16 October 2018 and "Pogo Operations Update" dated 12 February 2019, available at www.nsr ltd.com and www.asx.com. For the purposes of ASX Listing Rule 5.23, Northern Star confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Northern Star confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement;
- The Pogo reserves are extracted from the ASX announcement entitled "Northern Star acquires Pogo Gold Mine in Alaska" dated 30 August 2018. The reserves are estimated as at 31 December 2017 and according to the Canadian NI 43-101 standards, but are not fully compliant with those standards. Accordingly, they do not purport to be JORC Code compliant. A cautionary statement in respect of such resources and reserves appears in the ASX announcement dated 30 August 2018; and
- References on pages 5, 8 and 9 to Moz figures are calculated on the basis of current JORC 2012 Mineral Resources (Australian and Pogo operations), JORC 2012 Ore Reserves (Australian operations); reserves (Pogo), and past production at all operations, rounded up.