



ioneer

Sustainability
and ESG Report
2022

Contents

ESG Committee Chair's Letter	2
Sustainability and ESG Report	4
1. Our Approach to Sustainability and ESG	5
2. Corporate Governance	9
3. Communities and People	11
4. Environmental Stewardship	14
5. Energy Efficiency	15
Corporate Directory	17





Providing the materials for a sustainable and thriving planet

loneer is the owner of the Rhyolite Ridge Lithium-Boron Project located in Nevada, USA, the only known lithium-boron deposit in North America. Rhyolite Ridge is a world-class project that is expected to become a globally significant, long-life source of lithium and boron vital to a sustainable future. The Project is anticipated to come onstream in 2025.



ESG Committee Chair's Letter



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We believe that sustainability and ESG must be built into the fabric of who we are and what we do.

At ioneer we are committed to responsible and ethical business practices, safety and sustainability.

We believe that sustainability and ESG must be built into the fabric of who we are and what we do. Our commitment to sustainability and ESG starts at the Board and permeates the whole company. It is a commitment founded in the principle that sustainable mining is good business and a critical component of the global economy.

While it is early in ioneer's journey, we recognise the importance of sustainability and ESG. During financial year 2022, we joined both the Minerals Council of Australia with their 10 principles of enduring value and the Towards Sustainable Mining (TSM) framework for ESG. The coming financial year will see us put meat on the bones of these principles and framework as we set ESG targets to measure our performance and stretch our thinking.

Our mission is to provide the materials for a sustainable and thriving planet and we see ourselves as part of the solution to the world's carbon emissions problem.

I am excited to be a part of this journey.

Regards

Rose McKinney-James
ESG Committee Chair

Sustainability and ESG Report

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We are committed to responsible and ethical business practices, safety and sustainability

At Loneer, we believe that sustainability and ESG must be built into the fabric of who we are and what we do. Our commitment to sustainability and ESG starts at the Board and permeates the whole company. It is a commitment founded in the principle that sustainable mining is good business and a critical component of the global economy.

1. Our Approach to Sustainability and ESG

1.1 Overview

During financial year 2022, Loneer, joined the Minerals Council of Australia (MCA), under which member companies accept 10 principles of enduring value – the Australian minerals industry's framework for sustainable development. In addition, after reviewing best-in-class sustainability practices and reporting frameworks, Loneer adopted the **Toward Sustainable Mining (TSM)** framework for ESG. MCA has adopted the TSM system to deliver, demonstrate and enhance the Australian minerals industry's sustainability and ESG performance at site level.

In financial year 2020, Loneer developed sustainability pillars as guideposts for our environmental and social responsibility reporting. These sustainability pillars were: Clean Energy; Environment; and People & Community.

We have amended our sustainability pillars to align them with MCA's enduring value principles and the TSM framework.

1.2 Reporting Framework

Our approach starts with our corporate governance structures. Loneer, its directors and management recognise that commitment to sustainability and ESG is crucial to having a successful business that generates sustainable returns.

TSM focuses on eight operational areas for which tools, referred to as TSM Assessment Protocols (Protocols), assist mining companies in understanding and achieving the TSM Guiding Principles. The Protocols can be grouped under three pillars:



Communities & People



Environmental Stewardship



Energy Efficiency

We have amended our approach to sustainability and ESG reporting as follows:



Each Protocol is made up of a set of indicators that help mining facilities build, measure and publicly report on the quality of their management systems and their performance in the TSM focus areas. MCA has endorsed TSM.

This framework represents our core tenets which will direct our business decisions and are the touchstones we rely on to guide our actions into the future. The Loneer team understands that modern mineral extraction companies need to be accountable to many stakeholders beyond those who monitor our regulatory requirements, while supporting a broader goal of being in the forefront of providing the materials needed to allow the global transition to new renewable sources of energy.

1.3 FY2022 Highlights

- **ESG Committee formalised** to assist the Board with ensuring accountability for material issues, risks, and performance of the Company with respect to health, safety, environment, and community.
 - **Ms. Rose McKinney-James named to lead** the ESG Committee, providing accountability and expert leadership. Throughout her career, including her recent role as Managing Principal of Energy Works Consulting LLC and McKinney-James & Associates, Ms. McKinney-James has had the opportunity to address a variety of ESG-related challenges for similar companies.

- **TSM and Enduring Value Principles** selected by the Board and initiated as a voluntary reporting framework to provide for a yardstick of the Company's commitment to sustainable development.
 - **Redirected focus** based on the requirements of TSM and Enduring Value Principles. Loneer is focusing on improving energy efficiency in its designs, promoting environmental stewardship (particularly water and biodiversity management), and ensuring transparency in its actions through active and ongoing communication with various stakeholders.
- **Ongoing study and conservation of Tiehm's buckwheat**, a proposed USFWS endangered species, through various investigations and construction planning for a greenhouse to generate additional seedlings.
- **Community Support** – Loneer continued to enthusiastically support various events and organizations in the Fish Lake Valley and surrounding areas, while providing forums for community members and others to learn more about the Project and provide input on its optimisation.

1.4 FY2023 Priorities

Target Setting

- Establish baseline carbon footprint for Rhyolite Ridge
- Develop TSM-compliant climate and decarbonization targets and goals in alignment with Loneer's corporate goals and objectives
- Confirm key material ESG risks and opportunities
- Identify applicable key sustainability metrics beyond TSM
- Develop specific key performance indicators (KPIs) to track performance
- Life Cycle Analysis of Project

ESG Program Development

- Develop detailed ESG disclosure summary report to disclose targets, goals, and performance tracking measures
- Complete and implement various action plans to gain compliance with TSM

Tiehm's buckwheat

- Continue studies to support efforts to ensure its survival
- Revise Plan of Operations to avoid Tiehm's buckwheat
- Grow seedlings to support studies and possible transplant trials
- Commission greenhouse
- Pollinator study
- Development of Conservation Agreement

1.5 Loneer and TSM

The TSM performance system includes a series of compliance levels to be achieved over time as the Project advances through construction into operations and into closure, allowing for continuous improvement by "raising the bar" for operators in terms of such elements as water conservation, energy efficiency, biodiversity enhancement, and others. Loneer's goal is to develop systems and processes that comply with TSM under "Level A".

Once the protocols are implemented, Loneer will use the TSM framework to report on seven protocols with 30 indicators of social and environmental performance. Qualified external verifiers will review and confirm compliance with TSM every three years.

1.6 Enduring Value Principles

Beyond our commitments under TSM, Ioneer recently joined the Minerals Council of Australia (MCA) who provide an Enduring Value Principles framework within which the minerals industry can operationalise its commitment to sustainable development.

Using similar tenets to that of TSM, the Enduring Value Principles include a range of detailed guidance to support both site managers and corporate executives in adhering to sustainable development principles at all levels within the business. Generally modeled on the International Council on Mining and Metals' (ICMM's) 10 Principles for Sustainable Development as well as the United Nations Sustainable Development Goals, these principles represent the global industry's commitment to manage social, health, safety, environmental, and economic issues to deliver sustainable shareholder value, improve performance, and publicly report on the industry's progress.

Towards Sustainable Mining is:



Transparent

Minerals operations publicly report their performance against the TSM indicators on an annual basis and results are externally verified every three years.



Accountable

Assessments are conducted at site level where mining and minerals processing activity takes place.



Credible

TSM is overseen by an independent Community of Interest Advisory Panel of key industry stakeholders to support the program's credibility, future growth and refinement.



Measurable

TSM includes requirements to measure, demonstrate and communicate continual improvement.

TSM: Globally Recognised Performance System

Initially released in 2004, TSM has since been adopted by ten mining associations around the world, including Australia. More recently, standards have been developed that can be applied in the U.S., consistent with those developed for other countries.

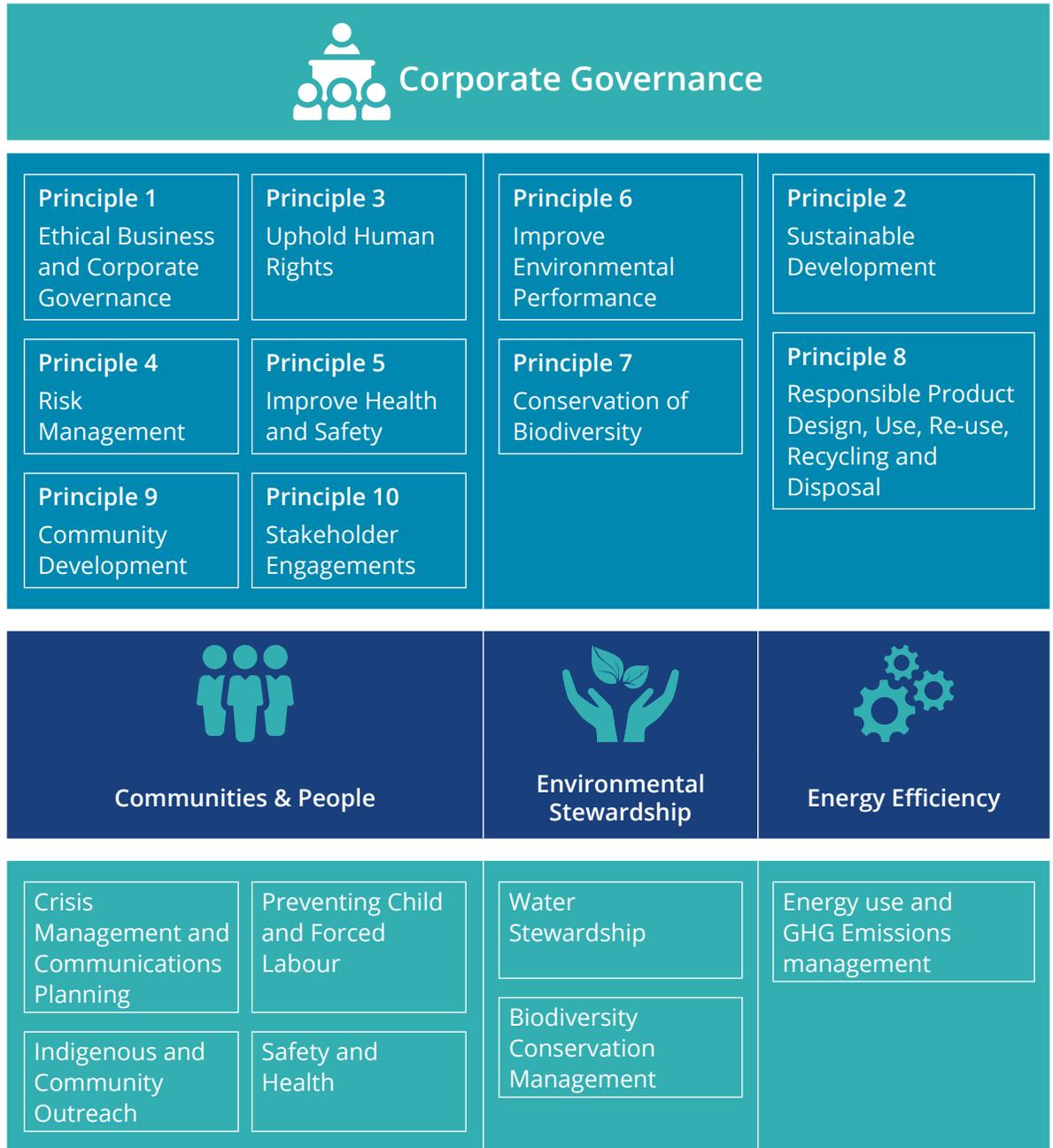
TSM is a globally recognized performance system that helps extractive companies evaluate and manage their environmental and social responsibilities. It includes a set of tools and indicators to drive performance and ensure that key mining risks are managed responsibly and transparently to the public. Accountability is ensured through implementation of both self-audits as well as third-party audits of the Company's processes and operations relative to various approved plans, all guided by an external Advisory Council. The intent of meeting these standards is to go above and beyond the requirements of the various operating permits to allow loneer to be an exceptional operator as measured against world-standards while allowing for continuous improvement by progressing through various levels of scrutiny within the performance system.

The TSM initiative allows companies to turn high-level environmental and social commitments into action on the ground, while at the same time providing stakeholders with valuable information on how operations are faring in important areas, such as community outreach, water management, and biodiversity. By operating under the TSM umbrella, loneer will provide transparent reporting to clearly defined ESG targets to stakeholders, that help drive operational improvement and efficiencies, reduce our environmental impacts, and monitor and publicly report material ESG-related issues, risks, and performance.



The white hill at Rhyolite Ridge

Relationship between Ioneer's Sustainability Pillars, Enduring Value Principles, and TSM

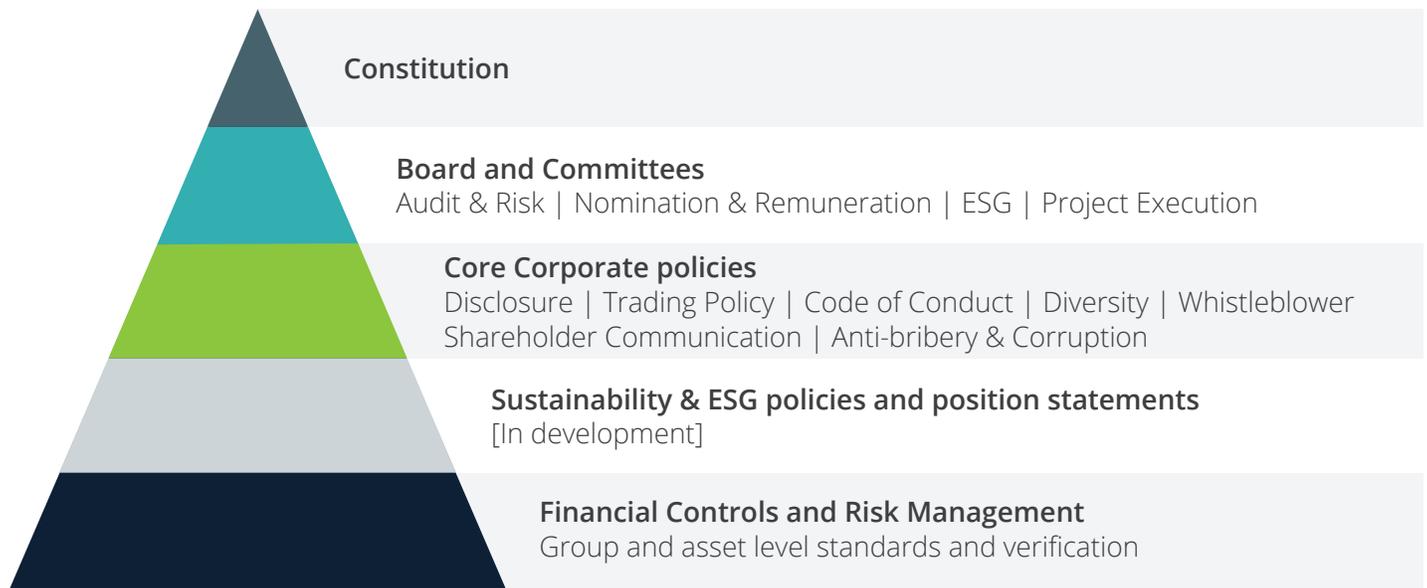


2. Corporate Governance

The Board of Ioneer Limited has ultimate responsibility for the management of Ioneer's business, including ensuring appropriate governance arrangements are in place.

Ioneer has established a framework for managing the company, including corporate governance policies and practices, relevant internal controls and risk management processes, collectively designed to promote the responsible management and conduct of the Company and its business activities. Ioneer's governance framework was developed having regard to the ASX *Corporate Governance Council's Corporate Governance Principles and Recommendations* (4th Edition).

Figure 2 – Ioneer corporate governance framework



Further information regarding corporate governance at Ioneer is set out in Ioneer's 2022 Corporate Governance Statement – June 2022, a copy of which is available on Ioneer's website at <https://www.ioneer.com/about/governance-policies>

Ioneer's Appendix 4G identifying, on an *if not why not* basis, the extent to which Ioneer has followed the ASXCGC Principles and Recommendations, is available on Ioneer's website at <https://www.ioneer.com/investors/announcements>

Instilling a culture of excellence in corporate and operational governance has been a focal point of Ioneer in advancing the Rhyolite Ridge Project to promote our collective desire to operate responsibly, ethically, and transparently. This effort starts at the top of our organization with Ioneer's Board of Directors. The Board takes this responsibility seriously, seeking to instill a culture of excellence into their own actions as well as throughout the Ioneer organization.

In FY 2022, Ioneer implemented its ESG Committee to assist the Board in monitoring concerns, risks, and performance of the Company with respect to health, safety, environment, and community.

A key area of Sustainability & ESG Governance is Leadership.

Our Leadership

The Board of Directors	<p>Ioneer has a majority independent Board of Directors.</p> <p>The Board has ultimate responsibility for:</p> <ul style="list-style-type: none"> • The Company's strategy, including in relation to Sustainability and ESG; and • The Company's governance framework. <p>The Board has delegated responsibility for the day-to-day implementation and execution of the Company's strategy (including in relation to Sustainability and ESG) to the Managing Director and CEO and, through the Managing Director and CEO, the Executive and Senior Leadership Team of the Company.</p> <p>Through the Company's governance framework, the Board oversees the implementation and execution of the Company's strategy (including in relation to Sustainability and ESG) by Management.</p>
Board Committees	<p>The Board has established four standing Board Committees (Committees), each of which plays an important role in Sustainability and ESG:</p> <ul style="list-style-type: none"> • The Audit & Risk Committee – provides advice and recommendations to the Board regarding the financial statements and oversees the Company's risk management framework; • The Nominations & Remuneration Committee - provides advice and recommendations to the Board regarding people and remuneration matters, inclusion and diversity objectives and strategies, and the composition of the Board; • The ESG Committee - provides advice and recommendations to the Board regarding health, safety, environment and community matters, including action on climate change, and verses managements development and implementation of systems and processes to manage health, safety, environment and community risks; • The Project Execution Committee - brings transparency, focus and independent judgement to the execution of the Rhyolite Ridge Project. Its role is to oversee the adequacy of the company's Project execution processes and to provide guidance to the management Project Execution Steering Committee. <p>Each of the Committees is chaired by an Independent Non-executive Director, and a majority of Committee members are Non-executive Independent Directors.</p>
Managing Director and CEO	<p>The Managing Director and CEO has the delegated authority of the Board for the day-to-day management of the Company, other than those matters expressly reserved to the full Board.</p>
Executive Leadership Team	<p>The Executive Leadership Team, led by the Managing Director and CEO, has the responsibility for the implementation and execution of the Company's strategy, including in relation to Sustainability and ESG, across the Company</p> <p>The role of the Executive Leadership Team includes the development and implementation of management systems and processes to manage Sustainability and ESG risks and achieve the Company's Sustainability and ESG objectives.</p>
Senior Leaders	<p>The Senior Leaders are responsible for implementing the Company's management systems and processes to manage Sustainability and ESG risks and achieve the Company's Sustainability and ESG objectives.</p>

3. Communities and People



Communities and People

Indigenous and Community Outreach	Crisis Management and Communications Planning	Safety and Health	Preventing Child and Forced Labour
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Our people

We strive to create a work environment where everyone feels safe, valued and empowered.

At Loneer, we aim to build a culture that reflects our values of being an innovative, caring, committed and responsible organisation.

Loneer is committed to:

- Providing a healthy and safe workplace for employees, contractors and business partners, minimising incidents and accidents, and eliminating serious injuries and illnesses
- Promoting a diverse workplace that better reflects the community in which we conduct our business, by:
 - Fostering a workplace which encourages and supports inclusivity and diversity, and does not tolerate bias or inappropriate behaviour
 - Promoting a workplace environment that provides opportunity for all workplace participants to perform and succeed.

Diversity

Loneer endeavours to create a diverse work environment in which everyone is treated fairly and with respect and where everyone feels responsible for the reputation and performance of the Company. Our commitment to this contributes to achieving our corporate objectives and embeds the importance and value of diversity within the culture of the Company.

The Company recognises that workplace diversity, including gender, age, ethnicity, cultural background, qualifications and experiences is a key contributor to our business success.

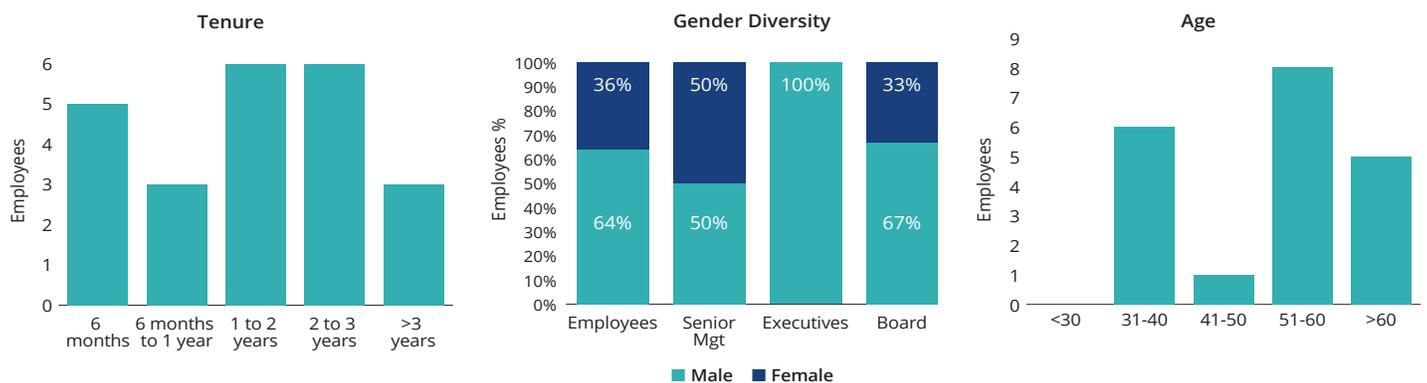
In FY 2022, 43% of our workforce was female, up from 36% in FY 2021. Female representation on the Board in FY 2022 comprised 33%, (FY21: 33%). The executive team has no female representation (FY21: Nil) and the senior management team 59% female representation (FY21: 50%).

The Company's future is tied to our ability to complete the permitting, financing, construction, ramp-up, and operations at Rhyolite Ridge. We will expand our team significantly as we develop the Project. The Board will seek to increase gender diversity at senior levels of management as opportunity allows. As part of our annual remuneration process, gender pay equity is reviewed.



Our culturally diverse leadership team

Workforce Snapshot (30 June 2022)



A key component of TSM is engagement with the various communities and individuals potentially affected by the Rhyolite Ridge Project as well as other stakeholders. Ioneer is committed to being transparent in its communications, and to reporting progress against predefined ESG targets.

3.1 Indigenous and Community Outreach

Beyond its reporting of progress and performance metrics to stakeholders, Ioneer continues to be actively involved in supporting the local communities and events held in Fish Lake Valley and nearby Tonopah, relishing its role as an active contributor in advancing the prosperity of individuals who live in or visit the region.



Ioneer awards the winner of the women's individual mucking event at the Nevada State Mining Championships



Our 2022 Ioneer Sustainable World Scholars

During this past year, Ioneer has contributed significant time and financial resources, supporting several activities and events:

- Funding delivery of meals to seniors and shut-ins during the pandemic
- Annual donation of turkeys to Fish Lake Valley residents for Thanksgiving
- Holiday meals and gifts for local children in nearby communities
- Funding for the Veterans Memorial Wall in Tonopah
- Contributing to the Tonopah Historic Mining Park
- Sponsor of Fish Lake Valley's 4th of July Celebration and Rodeo
- Sponsor of Tonopah's Jim Butler Days and National Mining Championships
- Academic scholarships to graduating seniors from Tonopah High School
- Contributing to women in mining

In support of the requirements of TSM, Ioneer is preparing several community-related action plans that address:

- Indigenous and community relationships
- Health and safety of the public and our workers

Our management team is fully cognizant of the emphasis being placed on environmental justice in the extractive industries and have met with members of various local indigenous tribes as well as others who may be marginalized through development of the Project. We are developing our community engagement plans in full consideration of any disproportionate social or environmental impacts that could potentially occur to certain community members.

This past year has seen Ioneer's involvement with the Esmeralda County Land Use Advisory Committee, comprised of local citizens that have been tasked with updating the County's Master Plan, Water Resources Plan, and the Public Lands Policy Plan. This group is providing input on various matters that potentially could affect local residents as a result of the Project's development as well as other existing and potential projects in the county. Topics such as public access, grazing rights, water rights, dust, night skies, visual impacts, traffic, and others are discussed. Input received at these committee meetings is being used by Ioneer to help shape various aspects of the Project design, allowing active participation of community members to be put into action.



Bernard Rowe speaking at a recent community event

The positive predicted economic impact the Rhyolite Ridge Project will have on the local, regional, and state economy remains robust.



Such an economic boost will greatly enhance the welfare of the local citizenry, providing additional amenities and business opportunities for support services and suppliers in addition to the direct Project-related jobs. The Project's tax revenue will greatly enhance existing County services as well as afford the opportunity to provide additional services desired by local residents.

3.2 Crises Management and Communications Planning

Crises Management and communications plans are being developed in advance of Project needs. These plans are expected to be prepared and reviewed in FY 2023.

3.3 Safety and Health

The safety and health of the public and loneer's workers and contractors is of first importance. We are pleased to report zero reportable injuries in the 278,895 hours worked on the Project to date, which includes 106,991 hours worked in FY 2022.



loneer is in the process of developing a comprehensive Health and Safety Plan, consistent with the requirements of TSM, to guide its efforts into construction and through the operational and closure phases. The plan will include policies, protocols, and training requirements to minimise the likelihood of personal injury while providing for well-planned responses in the case of various natural and human-caused events. Board-level oversight will ensure accountability related to the health and safety of all Project personnel and stakeholders.

3.4 Preventing child and forced labour

In support of the requirements of TSM, loneer is preparing plans that address the prevention of forced and child labour. To date, all material contracts and purchase orders entered have included language preventing such practices.

4. Environmental Stewardship



Environmental Stewardship

Tailings
Management

Biodiversity
Conservation
Management

Water
Stewardship

Environmental stewardship is at the core of the Company's mission in developing the Rhyolite Ridge Project. Water stewardship and biodiversity conservation are highlighted by TSM as areas of focus for minimising environmental impacts associated with development, operations, and closure phases of the Project.

4.1 Tailings Management

The Project has no evaporation ponds or tailings dam. The spent ore storage facility has been designed as a "dry facility" with liners, seepage collection systems, and leak detection systems to collect and appropriately manage all contact water.

4.2 Biodiversity Conservation Management

loneer has expended considerable time and money in fully characterizing the flora and fauna of the Project Area and beyond, effectively establishing a solid understanding of current conditions related to biodiversity. Particular attention has been placed on understanding the various characteristics of Tiehm's buckwheat, a plant for which the U.S. Fish and Wildlife Service has announced a proposed rule to list it as endangered under the Endangered Species Act. loneer anticipated this proposed listing and, in response, completed numerous studies to characterize the habitat of the plant and those of related buckwheat species, significantly advancing the science of buckwheat throughout the region. This data provides a solid base for development of mitigation and protection measures.



Tiehm's buckwheat grown from seeds by loneer

Conservation of Tiehm's buckwheat

In addition to scientific research, the Company is pursuing the following conservation initiatives:

- Developing comprehensive protection and conservation plans in coordination with the U.S. Fish and Wildlife Service and BLM
- Developing a Biodiversity Conservation Action Plan, a critical document in achieving alignment with the requirements of TSM
- Constructing a greenhouse to grow Tiehm's buckwheat seedlings for future use in expanding its footprint and supporting additional scientific studies
- Revising our Plan of Operations to completely avoid existing Tiehm's buckwheat populations, providing a final measure of insurance for the plant's survival
- An agriculture engineer has joined the loneer team to focus the Company's efforts on conservation and propagation of Tiehm's buckwheat as part of the Project's development.

Collectively, loneer's engagement with Tiehm's buckwheat will provide much greater protections to the plant and markedly increase its chances for survival.



Greenhouse growing Tiehm's buckwheat from seeds

4.3 Water Stewardship

loneer has diligently characterized the surface water and groundwater resources of the Project Area as well as adjacent areas through completion of extensive baseline studies involving sampling, flow measurement, aquifer testing, and measurements of depth to water.



Monitoring of the water resources in the area is ongoing as the Company is intent on fully understanding variability in the natural hydrologic and hydrogeologic systems prior to commencement of site development.

As part of its focus on protecting water resources within the Project Area and beyond, loneer is preparing a Water Stewardship Action Plan, consistent with the requirements of TSM.

Key elements of this plan include:

- A commitment by loneer to water stewardship by designating an individual within the Company accountable for implementing the various water stewardship protocols and communicating this commitment to stakeholders
- Design and construction of a water management system that maintains a water balance and a pledge by the Company to proactively manage water quantity and quality
- A plan to engage with other water users and stakeholders in governing and developing management plans for the broader watershed beyond the Project site
- Establishment of water-related objectives to measure and report on the performance of this Plan to various stakeholders

loneer considers water stewardship one of its key responsibilities in consideration of the importance of water in western Nevada. We are committed to lessening our consumption through continued optimization of our processes through reduction, recycling, and other means, as well as supporting broader efforts throughout the Fish Lake Valley to promote water quality and conservation.

5. Energy Efficiency

Energy Efficiency	
Energy Efficiency	Energy use and GHG Emissions management

Producing the materials for a sustainable future

The reality of climate change is rapidly changing the way in which the world generates, stores, uses and distributes energy.

The U.S. Government has increasingly emphasised the need for the electrification of the country's transportation fleet to reduce greenhouse gas emissions. A domestic manufacturing supply chain, from raw materials to car production and ultimately through to recycling allows the U.S. to reach this goal while maintaining national security, creating high-quality jobs, fostering social justice and ensuring compliance to rigorous environmental standards.



Ioneer sponsors the Las Vegas leg of Charge Across America

Electrification requires lithium, and Rhyolite Ridge will be a secure source of minerals ready to be utilized in the lithium-ion battery supply chain.

Ioneer is set to become a globally significant supplier of lithium carbonate and boric acid, which are vital materials to produce end products that reduce greenhouse gas emissions and create a more sustainable future.

Our design team has been diligent in considering alternatives that will both provide for greater energy efficiency in ore extraction and processing as well as transportation including, tier 4 engines for mining equipment, and automated mining equipment that reduces fuel consumption. The team settled on methods that will produce lithium carbonate, and boric acid using off-grid, energy-neutral processes that have minimal carbon dioxide (CO₂) emissions from heat and electricity generation, resulting in a processing plant with low emissions of greenhouse gases and negligible hazardous air pollutants. The selected processing design was derived after full cycle pilot plant testing involving numerous iterations to optimise the systems.

Ioneer has selected power and automation technologies for Rhyolite Ridge to ensure optimised energy efficiency and utilization. The electrical

switchgear and motor control equipment have built-in smart devices tightly integrated with the Power and Energy Management System. This will allow operations to optimise the use of electrical energy at the facility through data collection and implementation of load management schemes. Furthermore, the selected unified platform for the Process Automation and Power and Energy Management systems will facilitate energy management in line with process load requirements, optimising energy utilisation in the mine, acid plant, lithium/boron processing facilities as well as the on-site power generation plant.

Extraction of ore and transport of the final products will be accomplished using the lowest emission class of mobile equipment. In addition, Ioneer is evaluating several technologies to reduce dust emissions along the access and haul roads caused by vehicular traffic as well as from retired agricultural fields in the Fish Lake Valley.

Ioneer is currently preparing a Climate Change Action Plan that provides an inventory of the various Scope 1 and Scope 2 greenhouse gas (GHG) emission sources associated with the Project as well as a strategy for reducing such emissions. The plan provides for transparency in the Company's efforts to reduce GHG emissions, consistent with the requirements of the National Greenhouse and Energy Reporting Act of 2007.

Corporate Directory

Directors:	James D. Calaway	Executive Chairman
	Bernard Rowe	Managing Director
	Stephen Gardiner	Non-Executive Director
	Alan Davies	Non-Executive Director
	Rose McKinney-James	Non-Executive Director
	Margaret R. Walker	Non-Executive Director

Company Secretary: Ian Bucknell

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**Providing Materials for a
Sustainable & Thriving Planet**