# LEADING THE CHARGE.

A Roadmap for Whyalla GREENSTEEL.

MEMBER OF





# Contents

### 03 A message from the Executive Chairman

06 Introduction

12 Mining

17 Energy 20 Iron & Steel

**24** Environment & Community

27 Building a sustainable future together

- 'Green iron' and 'Green DRI' is used to describe iron produced through a Direct Reduction Iron Plant using green hydrogen.
- 'Green steel' is used to describe steel produced from green DRI, scrap and renewable energy.

# A message from the Executive Chairman



Sanjeev Gupta

To ensure a sustainable future steel must be at the heart of change. At LIBERTY we want to turn steelmaking – which is currently the biggest industrial carbon emitter - into one of the cleanest, low-emission industries using advanced technology.

Decarbonisation of the steel industry is both a necessity and an opportunity. This isn't just good for the environment - it's also good for business. Those operations which are the first to decarbonise their steelmaking will gain market share, create a competitive advantage and meet the growing demand from customers across the globe for cleaner, lowemission, iron and steel. We're here to tell you why LIBERTY Whyalla is perfectly placed to capture this opportunity.

#### What's the problem?

Traditional steel production uses carbon – in the form of coal – in blast furnaces to strip the oxygen from iron oxide (iron ore) and thereby create  $CO_2$ . As a result, steelmaking accounts for up to seven percent of global  $CO_2$  emissions. At the same time demand for our products will grow significantly.

It is currently estimated that global consumption of steel will double in the next 30 – 40 years. Something has to give. No plan for net zero can be achieved without a plan for steel.

#### What's the solution?

Our plan is to combine hydrogen production and steelmaking technology with highly energy-efficient electric arc furnaces. It is underpinned by raw materials and large-scale renewable energy, to help achieve our carbon neutral by 2030 (CN30) ambitions and lead the charge to GREENSTEEL. This is a huge challenge but LIBERTY Whyalla is perfectly placed to meet this target.

#### How can it be done?

It requires extraordinary amounts of renewable power to decarbonise iron and steel production. That renewable power needs to be affordable, abundant and readily available close to where it will be used to avoid waste. It also requires access to large quantities of high-quality iron ore, a skilled workforce, and ready-made infrastructure to connect with domestic and international supply chains.

So, in other words, to make green iron and green steel, conditions need to be just right, and today there are very few places in the world where all those conditions are met in one place. And out of those very few places, LIBERTY Whyalla, in South Australia, comes out on top.

#### Whyalla's time to shine

Whyalla has amongst the best conditions for solar and onshore wind anywhere in the world and we will harness that power to generate and store renewable energy. Our mines in Whyalla provide us with access to abundant high-quality magnetite ore an essential ingredient for green iron and steel production. Our magnetite resource is of the highest quality available anywhere in Australia and through our Magnetite Expansion Project (MEP) we are in the process of significantly expanding our capacity.

And there is more. We have a cape-size capable port, extensive rail linkages, a skilled workforce and a wholly supportive community backed up by a forward-thinking government dedicated to developing hydrogen power right here in Whyalla to help facilitate our plans. The South Australian Government is set to become a green hydrogen supplier with a commitment to a AUD\$593 million hydrogen power plant in Whyalla as one of its many initiatives. This facility will include a 250MW hydrogen electrolyser and a 200MW hydrogen-fuelled power station. South Australia also aims to have 100 percent renewable electricity by 2030.

Through a phased transition plan across our mining, energy, iron and steel projects we are transforming LIBERTY Whyalla into a major GREENSTEEL hub. Whyalla will become one of the first global scale commercial Hydrogen Direct Reduction Iron (DRI) production facilities. To achieve this, we will build a new DRI plant and an electric arc furnace that will produce green iron and green steel at scale from our abundant magnetite resources. Alongside this, our operation will benefit from the 280MW Cultana Solar Farm that will contribute to power operations.

By the end of the decade, we aim to use affordable, clean renewable energy to produce hydrogen from water without  $CO_2$  emissions, and feed it directly into our DRI plant, bypassing the problems and expense of hydrogen storage and transportation. Why export hydrogen when you can use it right here in-situ to produce hydrogenbased green iron and GREENSTEEL for export?

#### A global solution

Our expansion offers us the chance to not only increase our exports of high quality, low carbon magnetite to our steelworks in Europe and Asia, it also gives us the ability to develop new partnerships in the export of hydrogen produced.

And we're not just investing here in Australia. At our steelworks in the Czech Republic and Romania, we are replacing older polluting production methods with highly energy efficient scrap fed electric arc furnaces that can also be fed with the green iron produced in Whyalla, giving us a ready-made value chain. The new furnaces, the first of their kind in Europe, will have a combined capacity of 7 million tonnes per annum (mtpa) and will reduce the overall CO<sub>2</sub> emissions of the steelworks by more than 80 percent by 2027.

#### The size of the prize

The size of the prize is massive. With renewable energy and hydrogen production established, the potential benefits go well beyond steel and could position South Australia as a global hub for other hydrogenenabled technologies and advanced manufacturing. Australia can play a major role in the new industrial age and make a massive and positive contribution to reducing emissions and solving climate change.

The radical changes that we are delivering in Whyalla and elsewhere cannot be achieved by one organisation on its own. Private sector collaborations are required to spread costs, share knowledge and accelerate change. To reinvent the industry, steel producers, policymakers and the financial community need to work together to deliver real sustainable change.

As such, LIBERTY is pleased to present Leading the Charge: A Vision for Whyalla GREENSTEEL. The Vision outlines our developments and partner opportunities to secure a clean, modern and prosperous industry for ourselves and future generations.

Sanjeev

Sanjeev Gupta Founder & Executive Chairman

Whyalla's time to shine is now

Leading the Charge: A Roadmap for Whyalla GREENSTEEL





# Introduction

#### **LIBERTY Steel**

LIBERTY is a global steel and mining business with a rolling capacity of over 20 million tonnes per annum (mtpa), a liquid steel capacity of over 14 mtpa and has around 30,000 employees and contractors based in more than 200 locations worldwide.

We are using advanced technology to radically change how iron and steel are made for the 21st century. Our goal is to become carbon neutral by 2030 (CN30).

We manufacture products critical for human progress. We are committed to long-term, responsible, and positive action enabling a green transition that will create a sustainable future for industry and society.

#### **Our Australian operations**

LIBERTY'S Australian operations are comprised of steel, mining, ferro alloy and renewable energy, including:

• LIBERTY Integrated Steel and Mining - Whyalla steelworks a manufacturer of steel long products, an iron ore mine in South Australia's Middleback

Ranges, a dolomite mine in Ardrossan South Australia, a metallurgical coal mine in Tahmoor New South Wales and a cape size capable port in Whyalla

- SIMEC Energy Developer of Cultana Solar Farm.
- LIBERTY Bell Bay a hydro energy-powered ferroalloy smelter in Tasmania
- InfraBuild Steel Recycling and Electric Arc Furnaces in Melbourne and Sydney, 113 distribution centres for commercial steel

This vision for GREENSTEEL provides an overview of Whyalla's mining, energy, iron and steelmaking developments and partner opportunities.





#### LIBERTY Steel's global footprint



## The problem

#### The steel industry is facing a trilemma







Global Steel	Demand growth	Climate Change
Steel manufacturing accounts for up to 9 per cent of global CO <sub>2</sub> emissions	As economies develop, steel consumption is expected to double in the next 30 – 40 years	Many countries already legislating to be carbon neutral by 2050
1.9bn crude steel production in 2021	Compound annual growth rate 2 – 3 %	Paris Agreement is limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C
Average steel industry emissions globally = 1.87 tonnes of CO <sub>2</sub> per tonne of steel	Takes it to over 3bn tonnes of steel by 2050	Impossible without a solution for steel
Steel industry contributes 3.5Bn tonnes of CO <sub>2</sub> annually	Which means if we do nothing then the CO <sub>2</sub> generated by the steel industry could increase to 6bn tonnes	

Australia exported 894mt of Iron Ore in FY22. This equates to approx.1.8bnt/a of  $CO_2$ globally or 5 per cent of the 2021 global emissions.

## The solution

#### Our roadmap for a Hydrogen IRON & GREENSTEEL global hub in Whyalla

Combine hydrogen iron and steelmaking technology with high energy efficient electric arc furnaces underpinned by our vast magnetite resource and large-scale renewable energy to achieve our ambition to be carbon neutral by 2030 and lead the charge to HYDROGEN BASED GREEN STEEL IRON & GREENSTEEL globally.

To achieve this, we are transitioning from traditional approaches to iron and steel making as follows:

	From	То
Mining	Exporting Hematite	Exporting Magnetite
Energy	Powered from the grid	Renewables
Fuel	Coal 🗲	Green Hydrogen from renewables
Iron & Steel	Made from a blast furnace and basic oxygen furnace using coal and producing $CO_2$ emissions	Hydrogen Iron emitting water and eaf to melt the hydrogen iron using renewable energy

#### Indicative Scope 1&2 Emissions Intensity Progression

## Our goal is to become carbon neutral by 2030 (CN30).



#### Whyalla's unique opportunity



#### Whyalla – A Global Hydrogen produced IRON and GREENSTEEL Hub 2030

#### Today



#### Tomorrow





# MINING Unlocking Whyalla's vast resource of Magnetite

Whyalla is in a unique position with an abundance of quality energy efficient magnetite iron ore on its doorstep. Through our Magnetite Expansion Project, we will unlock vast resources that will enable LIBERTY's GREENSTEEL ambitions.

#### **Our Mining Operations**

We own and operate a 10mtpa iron ore mine in the Middleback Ranges in South Australia, approximately 60 kilometres from the town of Whyalla.

These operations incorporate the Iron Baron, Iron Knob and Iron Duke mine sites. They mine both hematite and magnetite. We also own a portfolio of non-ferrous mining assets including the Ardrossan Dolomite Mine – which supplies dolomite flux to our Whyalla steelworks and a metallurgical coal mine in Tahmoor NSW to meet demand during our transition to GREENSTEEL.

#### From hematite to magnetite

We are now going through a transition from mining hematite for the past 120 years to moving primarily into a magnetite operation to enable cleaner, greener iron and steel production.

Hematite has historically been the preferred iron ore as the in-situ grade of the ore can be directly shipped (direct shipping ore – DSO) to blast furnaces for steel production without the additional cost of beneficiation. These DSOs are declining in grade across the globe, leading explorers to target other ore types.

Due to the nature of our magnetite resource and the processing technologies being applied, it can consistently produce a premium grade concentrate (between 65-70 per cent) for the life of the resource.

Today, we are successfully producing 2.2mtpa of magnetite concentrate for both domestic and international markets.

We have a proven track record for optimising our mine operation in the Middleback Ranges and our steelworks in Whyalla, recently hitting production records across both divisions and yielding high returns. Magnetite concentrate has low impurities making it a less energy intensive resource for downstream processing.

#### **High Demand for Magnetite**

Demand for magnetite is reaching historic highs, partly driven by its low impurities and potential to drive to even higher grades, which can reduce emissions in processing due to a lower level of contaminants after processing. Magnetite has been identified as a critical resource in the emerging GREENSTEEL process

Magnetite ore grades are typically between 16-25 per cent. Our magnetite is graded 33-40 per cent mass recovery in the ground and has very low impurities.

Due to the high quality of our magnetite ore, a processing approach has been taken to focus on energy efficiency. We achieve this by utilising energy-efficient processes and eliminating waste early to minimise energy consumption.

#### Magnetite Expansion Project - A generational opportunity



Watch our introductory video from magnetite to GREENSTEEL.

https://l.ead.me/bdB9zq



"Magnetite can be upgraded to Direct Reduction grades which is the feed for direct reduction iron." We have commenced a three-staged Magnetite Expansion Project to leverage our vast resources of magnetite iron ore in South Australia's Middleback ranges. The project represents a generational opportunity to realise our CN30 ambitions, enabling new, less carbon intensive technologies and processes to be used with easy access to export facilities with a cape-size capable port at Whyalla as well as providing significant economic growth in the region.

Our expansion project has a lower risk profile than other magnetite projects because:

- We own and operate a complete mine-to-market supply chain and have a clear de-risked pathway to expansion, with minimal uncertainty.
- We are positioned for success with a long history of operations and proven ability in recent years to adapt and optimise.

• We operate in one of the safest mining regions in the world, providing a favourable regulatory environment with a methodical, rigorous and thorough assessment process ensuring the long-term operation of the project. The project is aligned with the South Australian Government's Magnetite Strategy.

The project is driven by a deeply experienced team, supported by positive stakeholder relationships, built on more than 120 years of operation across the various mining sites.

#### Magnetite expansion Exploration Pipeline

#### Possibility of 4Bt across Middleback Range

Target Name	Tonnes	
Chieftain West	>1000MT	
Duchess Deeps	>170MT	
Cook's South	>120MT	
Homestead	>110MT	
NMR	>1400MT	
Iron Warrior	>100MT	
Camel Hills	>100MT	
Kimba Gap	>100MT	
Iron Queen	>50MT	
Katunga	>500MT	
Cooyerdoo	>100MT	
	>3750MT	



#### A staged development

The Magnetite Expansion Project has three key stages to increase production.

3 stages of the Magnetite Expansion Project

#### MEP1 - Optimising what we currently do and install capability to process future ores at DR quality

MEP2 - Tripling our production, enabling GREENSTEEL and securing the future of our assets

**MEP3** - Double MEP2 Future - unlimited

	MEP1	MEP2	MEP3	Future	
Status	Currently operating	ntly operating Feasibility Exploring to define	Exploring to define	opportunities	
	stage i	underway	resource potential	Exploration	
Resource	614mt	614mt	Exploration target up to 1.1Bt - 1.8Bt	pipeline 4Bt	
Scale of magnetite concentrate production	2.5mtpa	+7.5mtpa	Aspiration >15mtpa		
Potential Life	5 years	20 years	Aspiration 20+ years		
Approvals	Operating under approved Mining Lease and Program for Environment Protection and Rehabilitation	Approval pathway identified and process underway	Approved exploration program underway	Future	
GREENSTEEL	Whyalla Transformation developed with CN30 strategy driving decarbonisation	Providing the key minerals to enable GREENSTEEL production Local, state and federal Govt looking to industry to support their emission reduction targets GEG actively	Approved exploration program underway Securing the long- term sustainability of GREENSTEEL potential in Whyalla	orojects	
		GFG actively pursuing the GREENSTEEL Vision for Whyalla			





Artists impression

# ENERGY

"Australia's high-quality wind and solar resources will give us a significant competitive advantage in making the hydrogen needed in a decarbonised steel industry ... our analysis shows that capturing about 6.5 per cent of the global steel market would generate about \$65 billion in annual export revenue and could create 25,000 manufacturing jobs in [Australia]."

Dr Tony Wood, Energy Program Director Grattan Institute and lead author of Start with Steel report source: AFR, May 2020

#### Hydrogen: A Game Changer

Carbon-based industrial revolutions of the past have brought many benefits around the world, but also the legacy of climate change. The next industrial revolution will be based on hydrogen. The change has already started, and it is set to revolutionise the steel industry.

Hydrogen provides a key to a carbon-neutral ironmaking process and can be used in place of coking coal as a reducing agent to produce direct reduced iron – with the by-product being water.

#### The Challenges

Currently, the hydrogen supply chain is costly and challenging. Each stage of storage, liquefying, shipping and re-gassing, adds to the cost of a tonne of hydrogen – and that's on top of the capital cost of the plants, energy and infrastructure required.

#### The solution

By using hydrogen to make steel immediately where it is produced, you can solve the high-pressure storage and transport problems. This, coupled with bringing down cost by using large-scale renewable energy in key locations with favourable renewable resources, will allow us to produce competitive GREENSTEEL totally free of fossil fuels. In addition, it will enable large and effective consumption of hydrogen allowing the hydrogen industry to develop rapidly.

#### Think global, act local

Value-added green iron and green steel will be in high demand globally given the growing momentum around decarbonisation. This could be the foundation for an industrial revival in Australia offering it the chance to be a global leader in a new hydrogen economy.

We are working hard on this through our GREENSTEEL transformation plans at Whyalla. We will take advantage of some of the world's best conditions for solar and wind with our large-scale renewable energy project, a 280 MW Cultana Solar Farm. They'll supply the green power for hydrogen and hydrogen-based iron and steel production.

#### Green Energy to drive us forward

The 280MW Cultana Solar Farm that is being developed in Whyalla will generate renewable electricity, that could either be used immediately or stored to assist with a reliable continuous supply of renewable energy to on-site electrolysers to produce green hydrogen.

Both hydrogen and oxygen will be generated by onsite electrolysers and stored for later use. Working together these energy resources will supply our new green steelmaking technologies 24/7.

Our energy assets will be scalable and designed to grow as steel production increases requiring increased energy. The business is developing additional renewable energy solutions to meet the growing needs of the green steelmaking process.

LIBERTY Whyalla also has access to alternate green energy from the grid and new hydrogen projects in the region.



#### **Green Hydrogen**

Hydrogen, as part of water, is the most abundant universal element in nature, but generally doesn't appear in its elemental molecules.

It requires energy to separate the hydrogen and oxygen molecules, through the process of electrolysis. The good news is it can be done using renewable energy to reduce greenhouse emissions to zero. Here's how it works.

In alkaline electrolysis, a strong electrical current, from renewable energy sources such as wind and solar, is passed through a tank of alkaline water solution to split the water molecules into two constituent elements.

Hydrogen atoms (H+) form hydrogen molecules (H2), while oxygen atoms (O-) form oxygen gas molecules (O2). Each element can then be stored.

#### Government activities

Both the Australian and South Australian governments have prioritised hydrogen as a major opportunity for growth and the environment.

The South Australian Government is set to become a world-class hydrogen supplier with a commitment to a AUD\$593 million hydrogen power plant in Whyalla as one of its many initiatives. This facility plans to include a 250MW hydrogen electrolyser and 200MW hydrogenfuelled power station. South Australia also aims to have 100 per cent renewable electricity by 2030. The Australian Government has also made commitments in the region including AUD\$70 million awarded to the South Australian Government under the Clean Hydrogen Industrial Hubs Program, for the Port Bonython Hydrogen Hub.

#### **Cultana Solar Farm**

Renewable energy generated by the 280MW Cultana Solar Farm is critical to our ambition to create green hydrogen, green iron and GREENSTEEL.

The solar farm is situated to the north of the Whyalla Steelworks and is set to house 630,000 solar panels capable of generating 700GWh of energy generation per year to support LIBERTY Steel's forward-thinking approach to new green energy generation.

Cultana Solar Farm will be a primary source of green energy to produce green hydrogen that will feed the Whyalla Steelworks including the DRI shaft furnace, hybrid arc furnace and the rolling mill furnace.

#### Wind

Wind studies have been done in the Middleback Ranges and found to be good to support wind generation. Initial 80MW wind farm project is currently being investigated.

Cultana Solar Farm and the hydrogen electrolyser and storage will be integrated into a scalable portfolio designed to manage the energy of the LIBERTY Whyalla's steelmaking operations and play a key role in delivering our ambition of carbon neutrality by 2030.





# **IRON & STEEL**

## LIBERTY is embarking on an ambitious program to move further and faster to deliver new green technologies for a carbon neutral future by 2030.

Our new technologically advanced steelmaking operations will run 24 hours a day, seven days a week, with quality feed from our mining operations, powered by a scalable combination of hydrogen and renewables set to take advantage of the region's favourable conditions for both solar and wind.

In 2025 we plan to start one of the first global-scale commercial Hydrogen Direct Reduced Iron (DRI) production plants and a state-of-the-art electric arc furnace to complement our transition to GREENSTEEL by 2030. Gas will be used in the new direct reduced process as a transitional reductant fuel before green hydrogen becomes available at scale and replaces gas as the reductant fuel. Gas will reduce  $CO_2$  emissions by 60 per cent compared with the current blast furnace operation at Whyalla. Once green hydrogen is introduced  $CO_2$ emission will be reduced by a further 30 per cent. Leading the Charge: A Roadmap for Whyalla GREENSTEEL | 31 August, 2023



## Direct Reduced Iron – $CO_2$ to $H_2O$

The Direct Reduced Iron (DRI) process using green hydrogen is the most effective technology steel producers can use to reduce their carbon emissions and rapidly transition to decarbonised green steel.

While incremental improvements are being made in old steelmaking technologies, experts agree that they will not achieve the radical reductions needed to reach the goals of the Paris Agreement.

Iron making is a core competency at LIBERTY Whyalla and along with our many advantages we are well placed to take charge, lead the transition to green iron and provide transport ready green product to our steelworks in Europe and open new market opportunities that will help accelerate the decarbonisation of the global steel industry.

#### How will the DRI process work?

The entire process involves two ingredients - gas and iron ore.

The process to produce DRI starts with high quality DR pellets made from magnetite concentrate in our new technologically advanced pellet plant.

Using a shaft furnace, the objective is to remove the oxygen from the iron ore to create metallised iron, without melting it. This is achieved using a reductant to remove the oxygen in the ore. We will use gas as the reducing agent before transitioning to green hydrogen to produce DRI. This approach results in water instead of CO<sub>2</sub> emissions. This process produces a low emissions DRI which can then be used to make steel. The DRI can also be made into a lower carbon hot briquetted iron product making it suitable for transporting.

#### **Benefits of the DRI Process**

The DRI process is both effective and flexible. The technology has a broad range of benefits that includes:

- The process allows producers to use various hydrocarbon sources and off gases making it an ideal technology to support the staged transition to hydrogen
- It is proven to consistently produce highquality metallised products
- Any combination of products can be produced simultaneously such as hot or cold DRI, and Hot Briquetted Iron (HBI)
- The process is very tolerant of fluctuations
- The plant can be idled over short or long periods.



#### Direct Iron Reduction Process

#### Green HBI and new market opportunities

Hot Briquetted Iron (HBI) is a premium and compacted form of DRI and global demand for HBI is on the rise with analysts pointing to its many benefits which are often not well understood.

HBI is a predictable quality product that can be used as feed material to make most steel grades. It can be used to supplement scrap in electric arc furnaces and can also be used to reduce the consumption of coke in blast furnaces and increase productivity.

Due to its compacted form, HBI overcomes many of the problems associated with the handling and transportation of DRI. It's much less porous and reactive, meaning HBI can be shipped and stored in open environments.

Using green hydrogen in the DRI process has the added bonus of making the HBI a greener material.

Green HBI opens new market opportunities for the Whyalla steelworks both domestically and internationally.

With access to quality magnetite iron ore and steel scrap supply becoming a greater challenge for some producers, green HBI is the ideal solution for steelmakers to complement existing feeds and provides the flexibility to scale up or down as required without being likely to affect the quality of the steel.

As a transport-ready environmentally friendly material Green HBI will help customers to make cleaner, and more sustainable steel which we hope will ultimately contribute to greener communities and a better future.

#### **Benefits of Green HBI**

- Carbon neutral Fe source
- More predictable quality suitable for most steel grades
- Low residual element supplement for scrap in electric arc furnaces
- Reduces CO<sub>2</sub> emissions and consumption of coke in blast furnaces
- Suitable for transport
- It can be shipped and stored in open environments

#### **Electric Arc Furnace**

LIBERTY Whyalla will install a 160th state-of-the-art Electric Arc Furnace (EAF) that takes advantage of the latest innovations in safety, energy efficiency, productivity, and flexibility in the melting process to enable many types of ferrous charge mixes.

An EAF is a greener solution, generating at least 2/3 fewer emissions than the traditional blast furnace. The raw materials and energy supply varies considerably between the two processes. An EAF uses electricity and typically recycled steel scrap or DRI to make steel while a blast furnace relies on a constant supply of coking coal to melt the iron ore producing large amounts of CO<sub>2</sub>.

Whyalla's EAF will have the option to use green feed from recycled steel scrap, either hot or cold direct reduced iron (DRI) or green hot briquetted iron (HBI). The ambition is to power it with renewables to produce GREENSTEEL. The new furnace could be powered by a digital power system via a DC link between the Cultana Solar Farm and the EAF.

As an EAF primary steel producer, our product range remains the same, at the highest standards. We will continue to produce slabs, billets, hot-rolled structural steel and rail products. This will support our current position as the only Australian manufacturer of special grade billet and steel long products, producing semi-finished steel billet and custom-made hot-rolled structural, rail and sleeper products to internal and external customers. The new EAF is expected to be operational in 2025.



Direct Reduction (DR) pellet (small test) batch made from DR magnetite concentrate (<2 per cent Silica) produced from Duchess South Drill core using MEP2 technologies.

#### Three stages of Expansion for Hydrogen Iron and the Pellet Plant





# Environment & Community

We strive to make a positive impact in the communities in which we operate and seek to improve business sustainability by valuing environmental, social and economic considerations in our decision making.

Our key values of Change, Family and Sustainability guide how we think about our role in the community, how we can enable change and how we can achieve a sustainable future.

Our approach is to share information on our operations, opportunities, and challenges, and to treat our community stakeholders as valued partners.

We engage with the local community in several ways through presentations, forums and briefings to groups, "community chat" days, personal visits and face-to-face conversations.

We work hard to minimise our impact, consistent with a continuous improvement philosophy. We adopt a scientific and risk-based approach to environmental management, by understanding and minimising the effect of our operations on the environment. We seek continual improvement of environmental performance to address this, the efficient use of resources, and the minimisation or prevention of pollution.

We undertake regular flora and fauna surveys and assessments around our operations and report on these against baseline and control sites. Our sites operate under consents issued by the South Australian Government and regulated by the Environment Protection Authority and/ or Department for Energy and Mining.

#### **Environment Consultation Group**

The Whyalla-based Environment Consultation Group (ECG) is a valued community reference group made up of members representing the community, local businesses, Whyalla City Council, the Environmental Protection Authority (EPA), Natural Resources Management, and currently chaired by state MP Mr Eddie Hughes. The group meets quarterly and is a long standing and mature group that provides open and honest feedback to the operators of the Whyalla Steelworks and mining in the Middleback Ranges. We facilitate the group but other industries in the region are also able to provide information to the group or seek feedback.

#### Indigenous relationships

Indigenous peoples are recognised and respected as important partners and stakeholders, and part of GFG's extended family. GFG seeks to create opportunities for Aboriginal people to engage, develop and build a shared, sustainable future.

#### Indigenous Land Use Agreement (ILUA)

We acknowledge the Barngarla people as traditional custodians of our land and give thanks for its use. Our formal engagement with the Barngarla Determination Aboriginal Corporation (BDAC) is underpinned by an agreed ILUA which guides the way the development of mining is undertaken in the Middleback Ranges. We keep the BDAC Board informed of planned development to ensure awareness and understanding of GFG's activities and future direction are well understood.

#### **Cultural Heritage**

The protection of Aboriginal heritage is an important aspect of land stewardship which we take very seriously. LIBERTY has established protocols in place with the Traditional Owners of the land on which we operate, and before development occurs heritage surveys are conducted and documented. If work needs to take place near identified sites of significance, then in addition to internal controls and procedures, experienced monitors – appropriately authorised by Traditional Owners – are asked to be present during such works as an additional safeguard.

Our operations are certified to the ISO14001 quality standard for Environmental Management and are audited annually by an independent third-party. LIBERTY holds approximately 300 mining tenements and has a duty to manage its custodianship of land responsibly and with care. One of the ways we seek to achieve this in the Middleback Ranges is through the Middleback Alliance, a long running partnership between landholders.

#### Middleback Alliance

The Middleback Alliance is a cooperative framework for sustainable land management across the southern Middleback Range and surrounding areas. The Alliance is directed by three major landholders in the region (Ecological Horizons, Landscaping SA Eyre Peninsula and SIMEC Mining). Other landholders also participate by sharing resources and cooperatively delivering a works program across land boundaries. The Middleback Alliance delivers improved and sustainable land management outcomes. To date, 12 properties have participated over an area of more than 250,000 hectares.

LIBERTY also provides a range of sponsorships, mentoring and in-kind support to sporting clubs, cultural and community events.

Our community program has been operating for over 20 years and over that time has established a number of long-term partnerships and funding arrangements resulting in meaningful outcomes in our communities. Some examples of these partnerships include Foodbank SA, The Smith Family and Whyalla Christmas Pageant and Carols events.

Through the GFG Foundation, which launched in Whyalla in 2019, our team mentor young people to support them to reach their potential and set them up to seek, gain and remain in employment by encouraging them to enter and engage in education and training and providing opportunities for skills development.







.

# Building a sustainable future together

With the right partners, Whyalla's innovative transformation can lead to the decarbonisation of the global steel industry and spawn the Australian green hydrogen economy.

## • Mining

- 1. Raw materials
- 2. Quality magnetite

# **2**. Energy

- 1. Renewable energy
- 2. Hydrogen

## **J** . Iron and Steel

- 1. Direct reduced process
- 2. Hybrid electric arc furnace

Our bold plan to decarbonise steelmaking and apply advanced technology to transform iron and steel manufacturing provides a rare opportunity for partners motivated to contribute to long-term and meaningful economic, social and environmental sustainability.

Simply put, our plan makes sense, and the benefits are clear. And we know we can move further and faster by working together with like-minded partners.

We expect the Vision to spark further conversation and welcome potential partners to further explore this innovative project and collaborative opportunity and join us in leading the charge.



#### Contact: whyallaCN30@gfgalliance.com

#### Disclaimer

- The material in this brochure (the Brochure) has been prepared by the Gupta Family Group Alliance (GFG), an international group of companies comprising LIBERTY Steel Group of Companies, ALVANCE Aluminium Group of Companies, SIMEC Group of Companies, JAHAMA Group of Companies and Wyelands Bank and any information about GFG should only be regarded as background information at the date of the publication of the Brochure and not as investment advice.
- The information contained in the Brochure is in summary form and should not be regarded as complete.
- Any information contained in the Brochure, including any forecasted information, should not be considered as advice or a recommendation and has not been considered or taken into account for any objectives you might have, or your situation or individual requirements.
- If you choose to act on any information contained in the Brochure, you do so at your own risk and with no reliance
  on GFG Alliance and you should consider the appropriateness of the information and seek independent advice.
- All investments, including securities and financial products or instruments involve risk, including but not limited to the risk of adverse or unanticipated markets, adverse financial or political developments and foreign exchange risk.
- The Brochure may contain forward-looking statements including statements regarding an intent, belief or current expectation with respect to GFG's businesses and operations, market conditions, results of operation and financial condition, capital adequacy, specific provisions and risk management practices. You are cautioned not to place reliance on any statements.
- The GFG Alliance does not undertake any obligation to release the result of any revisions to any statements contained in the Brochure.
- Whilst reasonable care has been used in the preparation of any forecast information contained in the Brochure, actual results may vary in a materially positive or negative manner.
- Any forecast and hypothetical examples contained in the Brochure are subject to uncertainty and contingencies.

This brochure has been printed on sustainable paper stock.