Vanessa Torres – Chief Technical Officer

Diggers and Dealers 2021

Ladies and Gentlemen – good afternoon.

I would like to acknowledge the traditional custodians of this land, the Wongutha (***Wong-Ga-Tha***) People, and pay my respect to their elders past, present and emerging.

I would also like to acknowledge the organisers of Diggers and Dealers, all of you here, and those joining us online.

Before we begin, I'll draw your attention to the important notices on the screen.

Those of us here in the room are fortunate to be able to gather here today. Many of our colleagues around the world continue to face challenges and restrictions from the ongoing impacts of COVID-19 and my thoughts are with those who cannot be here in person.

My name is Vanessa Torres and I am the Chief Technical Officer at South32. It's a pleasure to be here and to share some insights into our strategy, particularly in relation to our portfolio transformation, our work to reduce our emissions, and how technology and innovation are helping us achieve our objectives.

I'll begin by sharing a little bit about my background and how that has shaped my approach to my role.

My journey started when I was five years old, growing up in Brazil. I was inspired by my grandfather – an engineering professor – and decided I was going to be an engineer who would travel the world and work in different places. Fast forward to today, and I have been an engineer for almost 30 years and in leadership roles for 20 of those years. The mining industry took me around the globe, and the footprint of my career is similar to the footprint of the mining industry – from Brazil and other countries in South America to Canada, and then Australia.

When I think about the highlights of my career, I don't focus on the technical aspects of the projects I have led, or the performance of the operations I ran. These are all important, but my personal highlight is the diverse range of people I have met across the globe – in my workplaces and the local communities that surround them. Engaging with different cultures and learning to think in different ways has helped me to innovate.

I have spent half of my career in operational roles with a focus on what we deliver today, and half of my career in strategic roles where we think about how we re-invent for tomorrow. In my role as Chief Technical Officer at South32, I have the privilege of doing both.

Now, I'd like to share a little bit about who we are. South32 is a globally diversified mining and metals company.

We produce bauxite, alumina, aluminium, metallurgical coal, manganese, nickel, silver, lead and zinc at our operations in Australia, Southern Africa and South America.

Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We are trusted by our owners and partners to realise the potential of their resources.

This purpose is underpinned by a simple strategy, focused on optimising the performance of our operations, unlocking their potential and identifying new opportunities to create value for all our stakeholders.

As I'm sure is the case for many of you, the past 18 months have been challenging as we continue to respond to the COVID-19 pandemic.

From the start, our response to COVID-19 has been aligned with our purpose and focused on three areas: keeping our people safe and well, maintaining safe and reliable operations and supporting our communities.

We continue to follow the advice of governments, their agencies and our own experts wherever we operate. We see technology as an enabler in protecting the health and safety of our people and we have used it to support our pandemic response, including thermal cameras, pre-screening apps and real-time contact tracing.

We are supporting vaccination programs led by governments and health authorities to provide fair access to vaccines. Our GEMCO operation worked closely with the Northern Territory Health Department to establish a vaccination centre where more than 1,500 people have been fully vaccinated, including our residential and FIFO employees, members of the local communities and Traditional Owners.

In Colombia, our contribution to the national COVID-19 vaccination program includes purchasing vaccines and vaccinating our employees and contractors.

In coordination with the government in Mozambique, our Mozal operation recently launched its vaccination program for employees and contractors, which also provides for members of their households to be vaccinated.

The 2021 financial year was pivotal for South32. We completed the divestment of South Africa Energy Coal, a significant step in the transformation of our portfolio and the delivery of our strategy. We were pleased to fulfil our vision for the divestment by putting the business on a pathway to becoming sustainable, for the benefit of its employees, customers and local communities, and transferring ownership to a black-owned and operated company, consistent with South Africa's transformation imperative. In the last year we also divested our TEMCO manganese alloy business in Tasmania. The divestments of South Africa Energy Coal and TEMCO significantly simplify and improve our portfolio, reducing our capital intensity and improving our underlying operating margins.

In the 2021 financial year, we achieved our first short-term emissions reduction target of keeping our scope one emissions below our 2015 baseline. We are proud of this achievement, but we also know there is more work to be done to reach the goal we set in 2015 of net zero emissions by 2050.

Our approach to climate change is aligned with our purpose and fully integrated with our strategy and capital allocation priorities, and focuses on two key objectives:

1) decarbonising our existing business; and
2) adding growth options to focus our portfolio on the base metals needed for a low-carbon future.

To achieve the first objective, we have set a medium-term target to halve our operational emissions by 2035 compared to a 2021 baseline, which would be a major step towards meeting our net zero goal.

We will deliver this target by decarbonising our operations, securing green energy, and designing our growth projects to be carbon neutral. We are investing in efficiency projects, shifting to low carbon energy sources, applying low-carbon design principles and evaluating new technologies. I will talk more about this in a moment.

To achieve the second objective, we are reshaping our business to increase our exposure to base metals.

The Hermosa project in Arizona is one of the most exciting projects in the industry and has three elements, the Taylor zinc, lead and silver deposit, the Clark zinc, silver and manganese deposit, and the broader land package. Our team is progressing a pre-feasibility study for the Taylor deposit and we recently released an updated Mineral Resource estimate of 138 million tonnes, with higher zinc, lead and silver grades. Study work to date has confirmed a preference to pursue a dual shaft development configuration, that prioritises early access to higher grade ore.

A scoping study for the Clark deposit is evaluating the potential to produce a manganese product used in electric vehicle batteries. A further 15 regional prospects have been identified across the large, mineralised land package and testing of the highest priority targets is underway.

The Ambler Metals joint venture in Alaska, where we have a 50 per cent shareholding, is progressing a prefeasibility study for the high-grade Arctic copper deposit. There are also several regional targets that are being tested in the 2021 exploration program.

Beyond Hermosa and Ambler Metals, we are working to build our pipeline of options by investing through the drill bit. We currently have more than 20 greenfield exploration partnerships and projects targeting base metals in the Americas, Australia and Europe.

When we think about our development options, our focus is not only on providing the commodities needed for a low carbon future but also looking at how we can develop them to be carbon neutral mines.

We view Hermosa as a potential 'next generation mine', presenting an opportunity to redefine the way we operate to deliver transformational safety and productivity outcomes and redefining the relationship between mining and the environment. We are looking at renewable energy, electric vehicles and other measures that can contribute to carbon neutrality.

Because Hermosa is a development project, we can set it up from the beginning in the way we think will best serve our long-term objectives. This is a great opportunity, and one I am very excited about.

As we stand here today, there is no "best pathway" to achieving net-zero emissions in our industry – innovation and collaboration are required.

The role of innovation is important, as some of the solutions we will need to decarbonise may not yet exist. Our approach to innovation is underpinned by Innovate32, a process which focuses our efforts on where we can add sustainable value. Innovate32 is based on a set of strategic missions to guide our focus in line with our business strategy: Low Footprint, Securing Future Resources, Market to Resource optimisation and Future of Work. These all shape our vision for the Next Generation Mine, which would deliver transformational safety and productivity outcomes.

Our priority innovation mission is "Low Footprint" and at our existing operations, we are studying initiatives that will help us reduce our Scope 1 and Scope 2 emissions. We are progressing decarbonisation studies, with a focus on our most carbon-intensive operations where we can make the most material difference.

At Worsley Alumina, here in Western Australia, we will deliver short term emissions reduction through efficiency measures, including our mud-washing project which is expected to reduce energy and water consumption. We have successfully used biomass in place of energy coal in the multi-fuel co-generation facility since 2018 and further studies of low-carbon energy sources are underway.

Working together will be critical, so we can share knowledge, experience and apply economies of scale to investment and trials. We are already working with partners across the industry to overcome obstacles towards decarbonisation and share learnings.

We are a founding member of the Electric Mine Consortium, a group of mining and services companies with the ambition to accelerate progress towards fully electrified zero carbon and zero particulates mines.

Mines powered fully by electricity will help reduce emissions, improve the quality of the working environment through the elimination of diesel particulates, and reduce heat, noise and vibration.

The work of the Consortium is aligned to our decarbonisation objectives and we support the acceleration of electrification through collaboration and partnership. The consortium facilitates the sharing of data, which enables all members to benefit from the insights and analysis from trials of new technology or machinery.

The challenges the consortium is looking at include:

- **Mine Design -** Rethinking asset design to enable the realisation of the full benefits of mine electrification.

- **Energy Storage -** Mine scale energy storage technologies that are operationally and economically robust.
- **Light & Utility Vehicles -** Light vehicles and ancillary equipment that can be deployed at scale on site.
- **Underground, Surface & Long Haulage -** Large-scale, zero carbon haulage equipment that is technically viable and commercially available at global scale.
- **Electrical Infrastructure -** Developing an understanding on the supporting infrastructure requirements for all electric equipment and vehicles.

We are leading research on light battery electric vehicles which will help address the need for interoperable and commercially available battery technology suitable for light vehicles and utility equipment in the industry. We are currently investigating charging and electrical infrastructure and how to optimise the power demand of an electric mine.

These are not easy challenges to overcome, but solving them will unlock new ways of working, with lower emissions, as well as safety and cost benefits.

We are also core partners in the Heavy Industry Low Carbon Transition Cooperative Research Centre (HILT CRC), a collaborative venture between industry, government and research organisations, that has been formed to develop and accelerate technologies for heavy industry to transition to net zero. It enables collaboration and knowledge sharing with industry partners and lowers the cost of trialling new technology.

The CRC was recently awarded A$39 million from the Australian Government over ten years which is backed by an additional A$176 million of funding and in-kind support from industry, government and research institutions to help accelerate decarbonisation across heavy industry.

In closing, we live in a rapidly changing world and our industry is constantly adapting. Recently, the COVID-19 pandemic has challenged our people and our business in ways we couldn't have imagined. But together we have innovated. In many cases, new ways of working have been better than they were before.

This spirit of innovation and adaptation will serve us well as we prepare our industry for the future. At South32 we are preparing our operations and positioning our company for a greener future and, while this will undoubtedly present challenges along the way, we are excited by the possibilities that lie ahead.

As I have outlined, the resources industry will need strong partnerships to realise its full potential in a low carbon world. I am heartened by the collaboration we have enjoyed to date across our sector and I look forward to working with many of you in the future.

Thank you.