Our Story - Magnium Australia

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Our Story

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Our story

Our vision

The Magnium team has set itself at the crossroads of decarbonization in critical mineral processing.

COVID-19 has accelerated the transformation of select aspects of critical minerals in a “once in a generation” seismic shift. The exclusive global carbothermic patented technology which we hold and the team’s collaboration with our national science agency is accelerating an outcome to reduce reliance upon iron ore exports to power growth and to onshore and decarbonise mineral processing.

Our goal is to enable the development of Australia's critical minerals sector, including downstream processing and advanced manufacturing opportunities. This will lead to 1000’s of advanced high-paying jobs in regional Australia. Magnium has secured significant geological reserves of magnesium ore, a mineral deemed critical by other nations, and Magnium is best placed globally to process that ore with our global competitive advantage in technology, resources, and renewable energy.

Climate change is driving global demand for green metals most of which are necessary for the economic wellbeing of the world’s major and emerging economies. The importance of rare earth elements and other critical minerals stems from their unique catalytic, metallurgical, lightweight, nuclear, electrical, magnetic, and luminescent properties. The growing significance of these minerals is demonstrated through their use in the manufacture of mobile phones and computers, flat-screen monitors, wind turbines, electric cars, solar panels, rechargeable batteries, defence industry technology and products, and many other high-tech applications. As demand for critical minerals grows, and our ability to globally lead in green critical mineral processing of magnesium, lithium, and titanium there are significant economic opportunities for Australia that the Magnium team will support.

Michelle Ash

Chairperson

Michelle Ash, CEO of Dassault Systèmes GEOVIA, has made significant contributions to the mining sector with a focus on innovation strategy, technology and digital transformation.

Highly passionate about mining and the natural resources industry, Michelle remains focused on helping mining to evolve through digital transformation and the 3DEXPERIENCE platform, to help deliver sustainable solutions to the sector.

Michelle is also the Chair of the Global Mining Guidelines Group and has contributed to developing best practices and guidelines for the implementation of technology and socially enabled changes in the mining industry.

Previously she was Chief Innovation Officer at Barrick Gold Corporation, where she oversaw the company's innovation program, looking both at how innovation can drive productivity in the existing business as well as how it can be harnessed to deliver alternative business models.

Michelle was named to the 2016 list of "100 Global Inspirational Women in Mining" by Women in Mining UK and won the Technology Innovator of the Year Award by Mines and Technology in 2019. She holds a degree in Civil Engineering and an Executive MBA from the Melbourne Business School, as well as a degree in Psychology from Deakin University.

Shilow Shaffier

CEO & Board Member

Originally from the coal mining town of Moranbah, Queensland, Shilow Shaffier specialises in technology and commercialisation.

With over 20 years' experience in the technology, services, and finance sector, he's worked for some of the world's largest technology companies including HP, Fujitsu and DELL EMC and has held CEO positions focused on transformation and restructure for acquisition.

He is currently the Director of Commercialisation and Asset Management for Raven Corporate Management.

Charlie Dowsett

Chief Financial Officer

Charlie Dowsett CFO has over 25 years investment banking experience both domestically and internationally having been the Global Head of Precious Metals and Head of APAC commodities for RBS and ABNAMRO. He has also worked for NM Rothschilds & Sons and Citibank specialising in financial solutions for the resources & Energy industry.

Charlie has extensive Government experience having worked as a Deputy secretary and a Deputy Director General in the NSW Department of Industry, both as a regulator of industry and in business development and investment attraction.

He holds a Bachelor of Agricultural Economics, Master of Mining Engineering and a Master of Applied Finance and is a Fellow of The Australian Institute of Mining and Metallurgy.

Michellle Wearing Smith

Head of Strategic Communcations

Michelle brings extensive experience across private and public-listed companies, government, NFPs and start-ups to her role as Head of Strategic Communications at Magnum Australia. With a

background spanning business and brand strategy, marketing, digital, product development, customer experience and sales, she combines commercial insight with creative strategy to deliver meaningful results. Michelle is passionate about helping organisations and individuals realise their full potential and is committed to aligning every initiative with purpose and long-term business objectives.

Mortaza Gholizadeh

Senior Chemical Engineer

Dr. Gholizadeh has worked for many years as a process engineer and R&D researcher in the refinery and biorefinery. He obtained his PhD from Curtin University of Technology in the field of biomass pyrolysis and upgrading the bio-oil through hydrodeoxygenation in a continuous catalytic packed-bed reactor.

Then, he continued his studies as a postdoctoral researcher in the same topic at Curtin University of Technology. Later, he worked in Middle East, Europe and Australia as senior engineer and researcher to develop the pyrolysis technology for the conversion of municipal waste to liquid and solid fuels.

His main working interest includes the pyrolysis of different municipal wastes and upgrading the pyrolysis oil via hydrotreatment and scale up of these processes.

Shokri Teshnizi

Senior Mechanical Engineer

Dr. Shokri Teshnizi completed his Mechanical Engineering degree in 2006 and has worked as a Project Engineer and key Researcher in several collaborative projects within Australia, Asia, and the Middle East.

His doctoral research, completed in 2014, investigated the manufacturing and mechanical properties of composite materials.

He has had successful research and tutoring collaborations with Victoria University and the University of Melbourne. The outcomes of his research works have been published in several high-quality journals.

Prior to joining Magnium Australia, he worked with Costa Group, as a ‘Project Engineer’, where he made a significant contribution to optimising the production line and process improvement through the design and installation of new machinery.

Shokri brings a substantial knowledge base and practical skills in Solid and Structural Mechanics, Advanced Material Analysis, Manufacturing, Engineering Development Life Cycle, Composite Structures, and Smart Materials.

Sal (Saleheddin) Shams

Senior Mechanical Engineer

Saleheddin is a highly skilled Senior Mechanical Engineer with over 16 years of experience across the oil & gas, and heavy manufacturing industries. He has led the design, development, and implementation of complex engineering systems. Throughout his career, Sal has been involved in mega oil and gas projects both nationally and internationally, particularly in the Middle East, where he contributed to large-scale infrastructure developments.

Previously, Sal held senior positions at SMARDT Chiller Group, Global leader in Oil-free chillers, and Butane Industrial Group, The 3rd largest manufacturer of gas water heaters in the World.

Sal holds a BSc. in Mechanical Engineering and is a Chartered Professional Engineer (CPEng). He is a registered member of Engineers Australia (MIEAust), the Board of Professional Engineers of Queensland (RPEQ), the American Society of Mechanical Engineers (MASME), and is recognised as an APEC Engineer and International Professional Engineer (IntPE[Aus]).

Indigenous Engagement Strategy

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