



# Fueling the Metals Industry

While reducing global emissions

Pyrochar ®



# PROBLEM

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## IN METAL PRODUCTION

### CARBON EMISSIONS

10% of global emissions come from metal production, 7% Steel, and 3% from Iron & other ferroalloys in the form of **coal**.

### ESG

Huge pressure to reduce, from **shareholders**, Paris Agreement, **carbon credit**, and safeguard mechanisms.

### PRODUCTION COSTS

Metal production is increasing **6% CAGR**.

The cost of coal has **doubled** in the last 4 years due to an increase in demand and **shortage** (no new coal mines are opening).



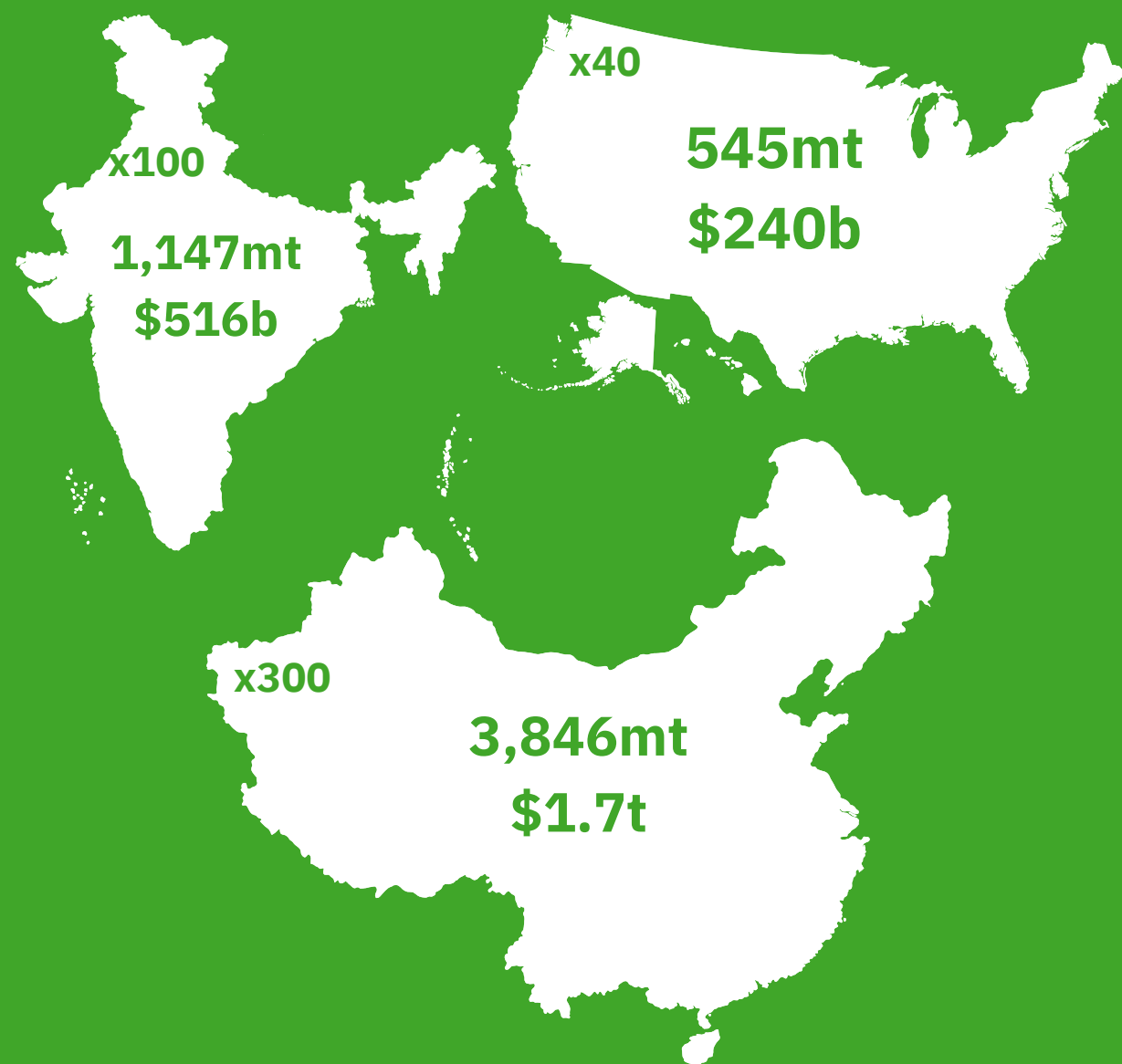
# PROBLEM SIZE

## COAL/COKE USED IN METAL PRODUCTION

**12.3 million tonnes  
pa of coal/coke**

**\$5.5 Billion annual  
spend**

*Data from the DISER Resources and Energy Quarterly - September 2021, Australian Steel institute and ARENA.*



*Data from the World Steel Association (WSA), International Iron and Steel Institute (IISI), European Steel Association*



## SOLUTION

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# METCHAR(BIOCHAR) IS THE ONLY SOLUTION

*'Man-made green coal'*

- Steel companies are generally aware of its net zero emissions
- It works - used in Brazil for centuries
- Generally, 2x the price of coal



# SOLUTION

## METALLURGIC CHAR



### New technology developed by CSIRO

- Cost to produce 50%
- 3 patents held
- Custom Char



*"Instead of modifying the steelmaking process to make 'green steel', we have modified the fuel source through bioenergy"*



### ESG

A 100% carbon-zero fuel source to replace coal-fueled metal production



### PRICE

The cost to produce is in parity or below the market price of coal/coke



### ADOPTION

'One for one' substitute for coal in current infrastructure - No modifications

*Bioenergy, a less know renewable form of energy that is 5 times larger than solar & wind combined.  
- International energy agency, ARENA*





**KATHERINE KENNEDY-WHITE**

CHAIRPERSON

Katherine brings over two decades of corporate consulting experience to some of the world's largest mining, construction, infrastructure and logistics companies with expertise in project management, strategic and government relations, and work winning which saw her build distributed high-performing teams and manage bids and tenders ranging from \$1m to \$4.6b. More recently she turned her corporate and government experience to scale tech startups as Managing Director of Venture Catalyst company DivisionX Global in Singapore. Katherine maintains a number of strategic advisory roles for startups, VCs and accelerators. Katherine holds a Masters in International Relations.



**Shilow Shaffier**

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 board positions focused on transformation and restructure for acquisition. He is currently the Director of Commercialisation and Asset Management for Raven Corporate Management.



**RUSSELL SMYTH**

BOARD MEMBER

Mr Russell Smyth serves as a Managing Director at Accenture ANZ with over 35 years of experience working with clients across multiple industries and geographies with a particular focus on technology transformations in the Communications, Media and Technology sectors. Russell is currently the CO for the Strategy and Consulting group in Growth Markets, and prior to that he was the CO for the CMT operating group in the AAPAC region covering Japan, China, India, SEA, Africa, ME and ANZ. Russell has worked with many different clients across the region, helping them execute technology transformations including Telstra, Optus, NBNco, Singtel, Korea Telecom, Tabcorp, News Corp, Boeing, Google, ByteDance, Rakuten, Etisalat, Airtel, Vodacom and MTN. Russell also served as a Director on the board of the Accenture Foundation.



**Clayton Cross**

BOARD MEMBER

An executive with a background in corporate and mining law. He secured his first tenement as a student in the early 1990s. He holds a Bachelor of Economics and Bachelor of Laws, is the principal corporate advisor and administration at Cross Consult Corporate, and has extensive experience in equity capital, corporate finance, structuring, asset acquisition, corporate governance and external stakeholder relations.





# MANAGEMENT TEAM



**Jason Donnelly**

CTO

Jason Donnelly is a uniquely skilled professional in the Minerals R&D and process scale-up domain having worked in the industry for over 27 years. He has custom designed, fabricated, and managed the operation of multiple laboratory scale processing systems through to commercialisation.

Using his extensive engineering and high-temperature experimental expertise, he has actively contributed to the development of new and novel metallurgical processing including MagSonic, LithSonic, CSIRO Dry Slag Granulation and our SSP Pyrolysis technologies.



**GRAEME ELGIE**

Commercial Lead

Founder and CEO of iSolutions which designed, developed and distributed the AMT asset management software for the earthmoving and mining industries. With over 75 staff & offices in Sydney, Brisbane, Adelaide, Santiago, Johannesburg and Denver it was recognised as the leading asset management software with +70% of the worlds large mining equipment being managed or tracked in it.

Graeme sold the business in 2016 to RPG Global and is now focused on emerging industry shifting companies and their operational go to market strategies.



**CAMERON BELL**

CEO

Originally from Perth with a background in 5+ coal & iron ore mine sites. Currently completing his Masters in Finance, Cameron has started and operated several companies in the sectors of renewable energy, SAAS, & Investments. Cameron moved to Melbourne over 15 years ago, setting up one of the first renewable energy broking platforms which he ran as founder & CEO for 7 years before being acquired in a trade purchase. During that time the company won start-up of the year & Cameron was awarded finalist for entrepreneur of the year. For the past 3-4 years Cameron has been involved in the Venture Capital sector in Australia. In particular, addressing climate challenges and Venture building solutions into Climate & infrastructure companies.

Cameron is a firm believer that not only is climate the single biggest challenge facing our world today, but that the biggest business opportunities of this generation will be the emerging green energy & decarbonisation solutions.



**JAYANT SATHAYE**

Technical Metal Expert

Jayant Sathaye has held some of the most senior & technical roles in India's colossal steel industry including Executive Director of JSW Steel (second largest steel producer in India), Jayaswal Neco and Sunflag Iron & Steel Co. CTO of steel making at Tata Steel & VP at Kalyani Steel. As a technical engineer by trade, he has been instrumental in introducing new technologies that have made India into the steel powerhouse it is today.



**CHARLIE DOWSETT**

CFO

Charlie Dowsett CFO has over 25 years of investment banking experience both domestically and internationally has 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 specializing 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, a Master of Mining Engineering and a Master of Applied Finance and is a Fellow of The Australian Institute of Mining and Metallurgy.



**Dr Michael Southcott**

CHIEF ENGINEER

Dr Michael Southcott, FIEAust, CPEng, EngExec, NER, APEC Engineer, IntPE(Aus), PhD, MBA, GAICD, B.E.(Hons), B.Sc.(Ma.Sc.) is a chartered professional engineer and experienced engineering executive with an extensive career that includes R&D, successful delivery of several multi-billion-dollar advanced technology projects, and leading development of Industry 4.0 machines for export markets.

He holds a PhD, Bachelor of Engineering and Science from the University of Adelaide, and an MBA from UniSA. He is a graduate of the Australian Institute of Company Directors.

# TIMELINE

< 2022

- ✓ Over \$20m invested into R&D of Pyrochar's 'Green Steelmaking' technology
- ✓ **3 patents held for continuous exothermal production technology**
- ✓ Pyrochar established to commercialise CSIRO's proven technology

Jan 2023

- ✓ 30 year exclusive global technology license with CSIRO
- ✓ **20 Year offtake agreement Magnium Australia for 30kt (\$15m) pa**

Feb 2023

- ✓ MOU entered into to convert 10m pa tonnes Australian biomass to Met Char - Pilbara
- ✓ MOU entered into to convert .5m pa tonnes Australian biomass to Met Char - Cobar, NSW

March 2023

- ✓ **MOU with Arya, Indian steel producer, 100kt PA**
- ✓ BlueScope is currently running industrial trials | Infrabuild awaiting trial samples



## TIMELINE

2023



**Primary focus is on Australian steel requirements**

2025



**India & USA steel & iron requirements**

2030



**Chinese steel & iron requirements**

2050



**REDUCE GLOBAL EMISSIONS BY 1%**

# THANK YOU



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