

Element Zero Raises US\$10M Seed Funding Led by Playground Global to Scale up Green Materials Platform, Decarbonize Iron and Other Critical Metals Production

- Transformative process fundamentally changes the economics of steel production making green steel as affordable as grey steel
- Scaling up from 100 kg of iron per day prototype to pilot plant that can process one tonne per day
- Operational by second half of 2024 and millions of tonnes by the end of the decade

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PERTH, Australia--(BUSINESS WIRE)--Element Zero, a green materials platform company, announced today that it has raised US\$10 million in seed funding led by Playground Global. The company has developed a novel approach to cost-effectively convert metal ores, such as iron, nickel, and other future-facing materials, to pure metals with zero carbon emissions. The low energy consumption and the ability to operate using intermittent renewable energy underpins the company's capability to reduce carbon emissions on a global scale. Element Zero will use the funding to grow R&D, engineering, and project development teams and scale the development of a pilot iron plant. Peter Barrett, Co-Founder and General Partner at Playground Global, has joined the company's board of directors.

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“Element Zero will help transform Western Australia from the world's mine into the world's foundry, dramatically reducing carbon emissions in the process,” said Playground Global's Peter Barrett. “Australia is poised to become a leader in resilient and sustainable global prosperity – its natural wealth in minerals and renewable energy blended with innovation in electrochemistry and new materials will cement its leadership in the energy transformation. Element Zero is a major catalyst in this shift and the Pilbara region in the north of Western Australia stands as the premier location globally to showcase the company's

potential.”

Initial Focus on Converting Iron Ore to Iron with Novel Processing Platform

Element Zero has created a low-temperature mineral processing platform that utilizes renewable energy to convert iron ore to iron. This non-aqueous electrochemical process allows Element Zero to process the full spectrum of iron ores; this includes the core 95% of Australian and Brazilian global trade in iron ore. Currently, lower grade iron ore cannot be processed using hydrogen-fed direct iron reduction or other lower carbon processing technologies. The technology has been tested successfully on iron ore, nickel, and other future facing metals. The lower temperature also allows Element Zero to run this process on intermittent renewables like wind, solar, and hydropower.

The current Element Zero prototype is capable of producing 100 kg of zero-carbon iron per day while offering superior product purity – a testimony of the team's capabilities and the simplicity and scalability of the process itself. Most notably, Element Zero:

- Achieved this milestone in 18 months, while proponents of other electrochemical technologies spent nearly a decade reaching a similar scale.
- Completed a detailed engineering design for one metric ton per day and is in the midst of a procurement and manufacturing process while a 100 kg per day prototype is being tested and optimized using iron ore feed from major iron ore producers.
- Aims for the next scale-up to be completed and commissioned by end of 2024.

Addressing Urgent Need for Global Decarbonization

The production of iron, steel, and other metals is an energy and carbon-intensive process, with steel production accounting for over 30% of carbon emissions from materials and more than 8% of global carbon emissions alone. With demand for these materials expected to double by 2050, there is a clear and urgent need to decarbonize. However, current approaches in this sector are energy-intensive and can only use very high-grade iron ore in their process; they cannot use renewable energy sources to power their plants due to the high temperature required. Element Zero's platform will also serve as a cost-effective approach for decarbonizing heavy metals. As the price of high-grade iron ore continues to rise, Element Zero will be able to process low-grade iron ore, which is widely accessible.

“Our processing platform will, for the first time, allow cost-effective and scalable production of carbon-free metals crucial to the iron and steel and critical metals industries,” said Michael Masterman, Founder and CEO of Element Zero. “We are excited to have Playground Global join our journey to tackle the decarbonization of hard-to-abate sectors. Support from Playground Global goes way beyond financial investment, and we are already in deep discussions about developing green iron and green silicon value chains in the U.S. We are also working with major iron ore miners and iron and steel companies globally.”

Based in Perth and the north of Western Australia, adjacent to the largest iron ore ports in the world responsible for exporting nearly 55% of the world's seaborne iron ore supply, Element Zero plans to develop five million tonnes per year of iron ore feed, producing around 2.7 million tonnes of high purity iron.

A World-Class Team of Energy, Materials, and Financial Experts

The Element Zero team comprises experienced leaders in the energy and materials industries with electrochemistry, engineering, metallurgy, project deployment, and fundraising expertise: <https://elementzero.green/>

- Co-founder and Chief Executive Officer **Michael Masterman** previously served as Executive Chairman of Squadron Energy, Australia's largest renewable energy company. Prior to that, he was the Chief Financial Officer and Chief Investment Officer of Fortescue Future Industries, driving the company's evolution from startup to global expansion and scale. He is a founding shareholder in several multi-billion dollar startups.
- Fellow co-founder and Chief Technology Officer **Bart Kolodziejczyk** served as Director of Hydrogen and Clean Technologies at Boston Consulting Group and Chief Scientist at Fortescue Metals Group.

About Element Zero

Element Zero is a green materials platform company working towards zero-carbon iron and steel and other future-facing metal production. Headquartered in Australia, the company has developed a cost-effective and efficient pathway to convert iron ore and other minerals into their pure metal form with zero carbon emissions. The modular approach of the Element Zero process aims to address 8% of global carbon dioxide emissions from iron and steelmaking. Element Zero is developing a portfolio of projects to accelerate market adoption, the first of which will be located in the north of Western Australia, the world's largest source and holder of iron ore reserves. Learn more at elementzero.green.

About Playground Global

Playground Global is an early-stage venture capital firm investing in entrepreneurs who have developed breakthroughs in frontier technologies that will transform existing industries and create entirely new verticals. Founded in 2015 and headquartered in Palo Alto, CA, and with over \$1.2 billion of AUM, Playground invests across deep tech and science, including automation, infrastructure, engineered biology, and decarbonization – all underpinned by the next generation of compute. Playground's bench of technical and operational experts supports founders in developing their deep tech technical breakthroughs into transformational businesses. Playground has been an early – and frequently the first investor – in companies like d-Matrix, Ideon, MosaicML, PsiQuantum, Relativity Space, Strand Therapeutics, Ultima Genomics, and Universal Hydrogen. Learn more at playground.vc.

Contacts

Media:

Element Zero

media@elementzero.green

Playground Global

Katja Gagen, Operating Partner, Marketing and Communications
+1 415.690.6689
katja@playground.global

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Contacts

Media:

Element Zero

media@elementzero.green

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Katja Gagen, Operating Partner, Marketing and Communications
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katja@playground.global