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ZEN ENERGY RAMPS UP ITS GREEN IRON INITIATIVE

ZEN Energy has announced its intent to make Green Iron and Green Iron co-product manufacturing real in Australia. ZEN's Green Iron Initiative will enable a successful, commercial scale green iron plant in Australia, with an initial focus on South Australia, on an early timetable.

"ZEN's team is identifying the best green iron process solutions for Australia. We are seeking, through targeted partnerships, to help supply the renewable electricity, green hydrogen, materials, process and site requirements for the earliest successful green iron plant development", said ZEN CEO, Anthony Garnaut. "Preferred sites in South Australia and in Western Australia have been identified, with access to renewable power at globally competitive rates, as well as transport, utilities and feed materials".

Last year, the global steel industry produced close to 2 billion tonnes of steel, releasing over 3.5 billion tonnes of carbon dioxide emissions, about 9 percent of global emissions. Most of these emissions are released during the ironmaking stage.

Australia contributes approximately 28% of the iron ore and 6% of the metallurgical coal used in world steel production. Most major steel producers have committed to net zero carbon emissions by 2050 or sooner. "Within this changing landscape, Australia is well placed to be a leading producer of green iron at the scale needed to support a globally competitive, low emission business ecosystem", added Garnaut.

The critical, immediate requirement to enable the production of green iron and co-products is the reliable supply of substantial amounts of renewable electricity, which is used to create green hydrogen as the primary reduction agent in place of fossil fuel sourced agents, as well as for direct use in the process. ZEN has the expertise to develop staged solutions for firm renewable energy supply that meets the requirements and timelines for this project.

"We have established networks with operating renewable assets, as well as critical stakeholders across the globe needed for renewable asset development. ZEN has already executed innovative agreements, enabling us to optimise renewable assets performance within Australia".

ZEN is actively exploring many potential approaches as part of the Green Iron Initiative. These include process options at different levels of technology readiness, that vary in the absolute through-process carbon mitigation potential. These options differ also in the inputs and feed material types and grades, as well as the process efficiency, output rate and form of products made.

While the Green Iron Initiative is technology agnostic - it is not yet clear what are the most efficient pathways to produce green iron at scale - ZEN is currently evaluating a novel green iron process route, incorporating renewable electricity and green hydrogen in an electric smelting furnace step, using a variety of potential Australian sourced ferrous feeds. Theoretical process design calculations have been performed and are being validated through pilot scale test work and an intellectual property application has been lodged. This work is being undertaken by ZEN and builds on a collaboration between Mr. Wang Jun (with more than 40 years steelmaking experience) and Mr. John Tsalapatis (General Manager of ZEN's Green Iron Initiative, who has over 35 years of ironmaking experience), and metallurgical research conducted by a pre-eminent research institution.

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About ZEN Energy

ZEN stands for Zero Emissions Now, our call to action. We believe that by turning towards low-cost, renewable energy, our communities will become more sustainable and prosper accordingly. Our purpose is to lead communities into a zero-carbon world.

ZEN is accelerating Australia's path to becoming a renewable energy Superpower and is Australia's first electricity retailer to have a near-term science-based emissions reduction target in line with limiting global warming by 1.5°C. In the 6 years since we obtained our electricity retail license, ZEN has brought together a community of sustainability-driven customers (governments, businesses, industries, and residents), renewable energy suppliers and capital partners. Some of our key customers include the South Australian Government, CSIRO's sites in New South Wales, Victoria, and the Australian Capital Territory and the Southern Sydney Regional Organisation of Councils (SSROC) which comprises twenty-five local councils in New South Wales, four of them in the top ten by size.

Having grown our portfolio of power purchase agreements including over 20 solar and wind farms, ZEN is now developing its own utility-scale projects which include the Templers Battery Project and the Solar River Solar and Battery Project, both are expected to commence construction in 2023.

Working in partnership with our customers, stakeholders, capital partners and the Australian community, ZEN is now delivering on its purpose to lead communities into the zero-carbon world.

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