Media Release

Embargoed Thursday, 25th May 2023, 12.01pm (AEST)

Pyrochar and CSIRO collaborate to decarbonise steelmaking

- Pyrochar secures a 30-year exclusive global license agreement with CSIRO for technology that produces net-zero emission char as a replacement for coal in the primary metals industry.
- The technology can produce metallurgical-grade, custom biochar (MetChar) from sustainable forestry or agricultural waste.
- Pyrochar's MetChar product has the potential to be a 100% net-zero carbon dioxide alternative for coal in iron and steel production.

Melbourne-based Pyrochar has announced the successful acquisition of an exclusive global license agreement with CSIRO, Australia's national science agency, for an innovative technology that has the potential to decarbonise the steel production industry.

The novel technology produces a metallurgical grade of biochar that is a net-zero emissions fuel source and a partial or full replacement for coal or coke in blast furnaces and Electric Arc furnaces. When the biochar used in steel production is from sustainably managed sources, it has net-zero carbon emissions. Making it a highly promising solution to the global focus on low-emissions steelmaking.

The technology uses an auto-thermal slow pyrolysis process. This means that material in the reactor is heated only by the heat of pyrolysis reactions and does not require additional heat in any form. It works in larger reactors and can use a wide range of biomass feedstocks (including forestry and agricultural wastes), which help to lower production costs. Pyrochar's high-grade MetChar product can be customised to uniquely meet customer specifications.

Biochar provides a solution to the ESG issue in metal production by producing net-zero carbon emission alternative while keeping production costs lower than coal.

Pyrochar CEO Cameron Bell stated, "Our collaboration with CSIRO enables us to deliver this ground-breaking technology on a global scale, and we are committed to promoting sustainable steel production across the industry."

CSIRO's Adrien Guiraud, Principal Research Consultant - Processing, said: "Being able to efficiently produce large quantities of metallurgical grade biochar from sustainable biomass sources is a big step forward in the global effort to reduce greenhouse gas emissions in steelmaking. And a reinforcement of Australia's role in the steel supply chain globally."

This critical work is supporting Australia's hardest to abate sectors to halve their emissions by 2035, and forms part of CSIRO's Towards Net Zero Mission.

Pyrochar has already established Memorandums of Understanding (MOUs) and off-take agreements for biochar production, and plans are underway to construct several plants to meet the requirements of these agreements.

The company has now initiated a capital raise for wholesale investors to meet the demands of these contracts.

Available for interview:

Cameron Bell, CEO Pyrochar

Adrien Guiraud, Principal Research Consultant - Processing, CSIRO

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About Pyrochar Pty Ltd

Pyrochar is a cutting-edge biochar manufacturer that is committed to revolutionising the manufacture of steel, iron and critical metals. The company is pioneering the commercialisation of the CSIRO-developed technology. The company's next-gen technology, which has been in development by the CSIRO since 2003, can produce custom biochar and metallurgical char (metchar) with less energy and lower cost requirements than traditional manufacturing methods.

CSIRO

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency and innovation catalyst, whose goal is to solve the greatest challenges through innovative science and technology. Researchers within CSIRO’s Mineral Resources business unit developed the patented Self-Sustaining Pyrolysis technology which has the capability to significantly reduce net CO2 emissions and promote the widespread use of renewable carbon in metallurgical processes. CSIRO has established an exclusive partnership and license with Pyrochar Pty Ltd to continue progressing the technical development and to commercialise the technology.