

OSS COMMENCES R&D PROGRAM INVESTIGATING SARGASSUM ALGINATE TECHNOLOGY TO TARGET PRECIOUS METAL RECOVERY FROM RETIRED DATA CENTRE HARDWARE

Highlights

- **Ocean Sciences Ltd (ASX: OSS) to commence a R&D program investigating the use of Sargassum-derived alginate to recover precious metals and rare earth elements from retired data centre hardware and other electronic waste.**
- **Gold and silver the initial focus of the selective capture and recovery from decommissioned printed circuit boards and other electronic components, with the program also investigating the potential recovery of rare earth elements.**
- **Rapid expansion of data centre infrastructure is expected to generate increasing volumes of electronic waste containing recoverable precious metals and potentially valuable rare earth elements.**
- **The well-characterised composition of data centre hardware categories allows precious metal content to be estimated, with actual content confirmed by sampling and assay.**
- **The initiative builds on published scientific research demonstrating the ability of alginate-based materials to capture valuable metals from electronic waste processing solutions.**
- **The Company aims to develop a proprietary, seaweed-based metal recovery solution for potential application by commercial electronic waste recyclers and precious metal refiners.**
- **The Company's Board has approved the R&D program and authorised an initial funding allocation of A\$100,000 to support its implementation.**
- **The approved R&D program is anticipated to run for at least 12 months, with progress to be reported as key technical milestones are achieved.**

Ocean Sciences Ltd (**ASX: OSS**) (**OSS, Ocean Sciences** or **Company**) a commercial seaweed supply, research and development company, is pleased to announce a new research and development (R&D) initiative investigating the use of alginate extracted from *Sargassum*, a naturally occurring brown seaweed, for the recovery of precious metals from retired data centre equipment and other electronic waste. The Company's Board has approved the R&D program and an initial funding allocation of A\$100,000 towards its implementation.

Strategic Rationale

The initiative represents a further expansion of the Company's seaweed research and commercialisation strategy, targeting the development of higher-value industrial applications for seaweed-derived materials.

The program will initially focus on the recovery of gold and silver from printed circuit boards and other electronic components, while also investigating the potential recovery of rare earth elements from relevant hardware components. Target materials include those recovered from servers and related equipment retired during periodic data centre hardware replacement cycles. The rapid expansion of data centre infrastructure, particularly in response to increasing demand for artificial intelligence and cloud computing services, is creating a growing market for the recycling and recovery of valuable materials from retired hardware.

Data centre hardware is subject to regular replacement cycles, typically ranging from three to seven years depending on equipment type and operational requirements which generate a recurring supply of electronic waste containing recoverable precious metals, including gold and silver, as well as certain rare earth elements. Importantly, the composition of electronic components is relatively well characterised, enabling the valuable metal and mineral content of particular categories of hardware to be estimated and quantified. This provides a more predictable source of target metals and minerals for the development and optimisation of selective recovery technologies.

Proposed Technology and R&D Program

Alginate is a naturally occurring compound extracted from brown seaweed, including *Sargassum*. Its chemical properties enable it to bind certain dissolved metal ions, providing a potential basis for the selective capture and recovery of valuable metals. The proposed approach builds on peer-reviewed scientific research demonstrating the potential of alginate-based materials to capture precious metals under laboratory conditions. The R&D program will also investigate whether these properties can be adapted for the selective recovery of rare earth elements.

The Board has approved the commencement of the R&D program and authorised an initial funding allocation of A\$100,000 to support the proposed research activities. The research program, anticipated to be at least 12 months, will investigate a three-stage process:"

1. **Extraction:** Extracting and preparing alginate from Indonesian *Sargassum* seaweed for use in metal recovery applications.
2. **Capture:** Developing an alginate-based material capable of selectively binding gold and silver, and potentially rare earth elements, from solutions derived from processed electronic waste.
3. **Recovery:** Developing methods to release and recover the captured metals and elements and, where technically feasible, reuse the alginate-based material.

Subject to successful laboratory results, the Company intends to explore pilot-scale testing and potential collaboration with commercial electronic waste processors.

Commercial Potential

Published research has shown that under laboratory conditions, alginate-based materials can capture gold with high selectivity and produce high-purity metal. The Company's objective is to develop a seaweed-based recovery process that builds on this selectivity, with the potential to reduce energy and reagent use compared with conventional methods. These potential benefits will be assessed during the R&D program.

The Company's strategic objectives include:

- **Data centre market:** Targeting the growing volume of retired data centre hardware containing identifiable and recoverable quantities of gold and silver, together with potential opportunities to recover rare earth elements from relevant components.
- **Commercialisation:** Subject to successful research outcomes, developing a proprietary alginate-based metal recovery solution for commercial electronic waste recyclers and metal refiners.
- **Industry collaboration:** Exploring partnerships with data centre operators, electronic waste recyclers and metal refiners to support development and commercialisation.
- **Existing capabilities:** Leveraging the Company's Indonesian seaweed sourcing network and its Seaweed Innovation and Application Centre in Takalar Regency, South Sulawesi.
- **Research collaboration:** Progressing preliminary discussions with Indonesia's National Research and Innovation Agency (BRIN) regarding *Sargassum* alginate extraction and exploring other research partnerships.

Intellectual Property and Next Steps

Ocean Sciences intends to pursue intellectual property protection for proprietary developments arising from the research program, including the formulation of the alginate-based recovery material and associated metal capture and recovery processes. The Company proposes to lodge an initial patent application in Singapore, subject to appropriate intellectual property and patentability assessments.

The Company will provide further updates as the R&D program progresses and material technical milestones are achieved.

Commenting on the initiative, Ocean Sciences Chairman Frank Cannavo said:

"Having spent much of my career in the mining industry, I recognise the significance of developing new technologies to recover valuable metals and minerals from alternative sources. The rapid growth of the data centre industry, together with the regular replacement of its hardware, presents an emerging opportunity to recover gold, silver and potentially rare earth elements from electronic waste.

"This initiative brings together the Company's seaweed expertise and the principles of mineral recovery in a new industrial application. While the technology is at an early research stage, we believe it offers an exciting opportunity to develop a commercially valuable and more sustainable recovery process, while further diversifying the applications for our seaweed resources."

The initiative remains at an early research and development stage, and there can be no assurance that the proposed technology will achieve the technical performance, commercial scalability or economic viability necessary for commercial deployment.

Forward looking statements

This announcement contains forward-looking statements, including statements regarding the proposed R&D program, its timing and budget, potential technical outcomes, intellectual property protection, collaboration and commercialisation. These statements are based on the Company's current expectations and assumptions, including that the program is funded and that laboratory research progresses as planned. They are subject to known and unknown risks and uncertainties, many of which are beyond the Company's control, including research outcomes, funding, regulatory matters and the ability to secure partners or intellectual property protection.

Actual results may differ materially. Investors should not place undue reliance on forward-looking statements. Subject to its continuous disclosure obligation, the Company does not undertake to update any forward-looking statements.

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