



23 June 2022

Cape Flattery Silica Sand Project Update

Highlights

- Definitive Feasibility Study (DFS) commenced
 - Detailed DFS planning presented to Board of Directors
 - DFS planned for completion in 2nd Quarter 2023
 - Metallurgical studies have continued on from the Pre-Feasibility work to assist in earliest completion of the DFS
- All key work streams to advance Cape Flattery Silica Sand Project progressing rapidly
- Multiple permit applications close to submission
 - Environmental studies for the sand recovery, processing and marine operations are completed and permit applications advancing with goal to submit to Qld Government in 3rd Quarter 2022
 - Development Application for purpose-built jetty expected to be finalised in 3rd Quarter 2022
 - Application for approval to access ground water for sand recovery and processing anticipated to be submitted in 2nd Quarter 2022
- Negotiations with Traditional Landowners continuing in a productive manner
- Multiple potential offtake partners with established international silica sand markets continue to engage with the Company
- First Silica Sand production from the project is forecast to be in the first half of 2025

Metallica Minerals Limited (**Metallica**, ASX: MLM, Company) is pleased to provide an update on the progress towards development of its 100% owned Cape Flattery Silica (CFS) sand project.

Metallica Minerals Executive Chairman, Theo Psaros said, “We are currently advancing through numerous studies, approval processes and stakeholder engagement activities that all are key components of our project’s development.”

“The Company is finalising several applications having recently completed environmental studies. We are also continuing negotiations with the traditional landowners the Dingaal and Nguurruumungu clans. These have continued in the extremely positive and constructive manner shown by all parties throughout our discussions to date.”

Environmental Studies

The Company, along with our external environmental consultants, have completed an array of environmental studies at the CFS project. These studies have included soil sampling, ecological studies and water monitoring.

It is expected that the Environmental Application will be lodged in early Q3 of this year to the Queensland Department of Environment & Science (DES).

In Q3 of 2022, the Company also plans to lodge a Progressive Rehabilitation and Closure Plan (PRCP) with DES. The PRCP will outline how rehabilitation will be undertaken progressively throughout the life of the project and what work will be undertaken when the project is completed. There will be a communication process undertaken with key stakeholders to inform them of the PRCP and seek feedback accordingly.

Purpose-built Jetty Development Application

A Development Application (DA) to the Queensland Government is being finalised for approval for the construction of a purpose-built jetty for the CFS Project.

The planned jetty is located within the Cape Flattery Port limit (see Figure 1 below). The Cape Flattery Port is already in operation, loading silica sand onto ships for export and is an area with existing approval for marine operations such as being contemplated by the Company.

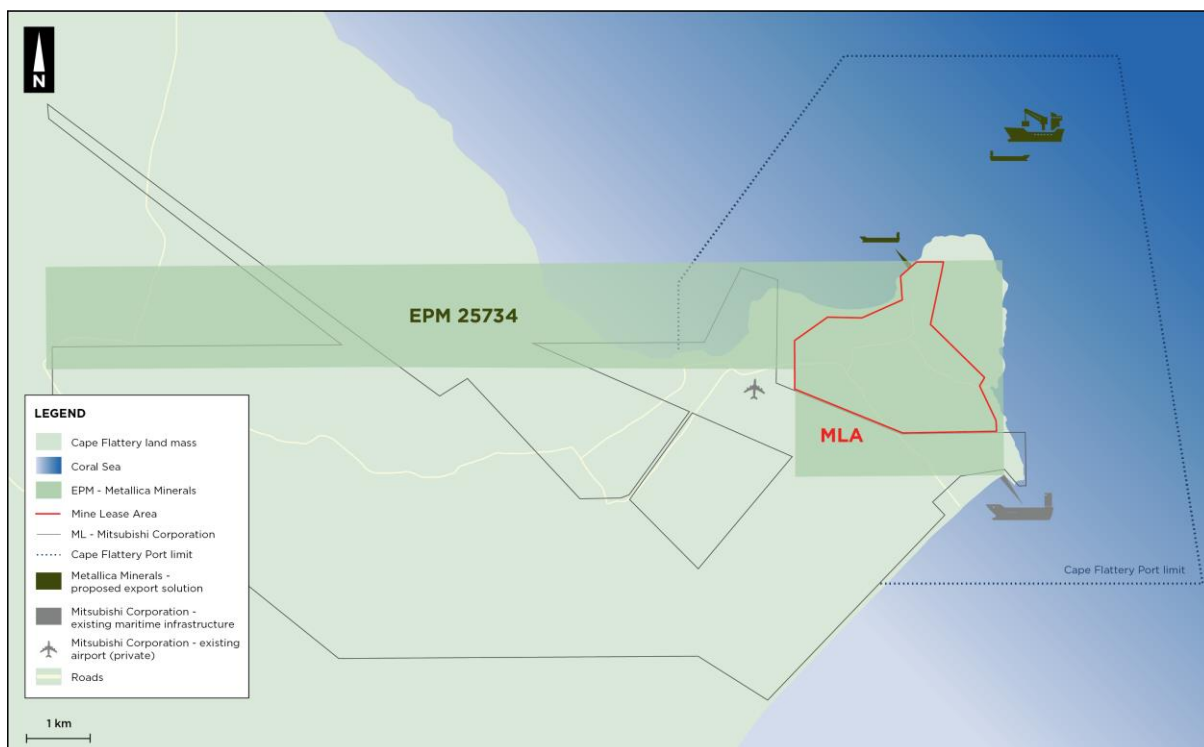


Figure 1: Metallica Minerals' CFS EPM 25734 & MLA location adjacent to the Cape Flattery Port Limit and proximity of MLA area to the planned purpose-built jetty

The Jetty Development Application process has required engagement with a number of Queensland Government departments as well as the Hope Vale Aboriginal Shire Council and Cook Shire Council. The DA is expected to be lodged in Q3 of this year.

Traditional Landowner Negotiations

To date, four meetings have been held with the Negotiation representatives of the clans who are the traditional landowners of the planned Mining Lease Application (MLA) area. The Company has met with the Dingaal and Nguurruumungu representatives and their respective legal advisors and the negotiations are continuing. Negotiations have been delayed somewhat over recent months due to impacts of a number of Covid cases amongst the both the CFS team and residents of Hope Vale.

Importantly, the negotiations have been held in a professional and respectful manner with significant information on the project being shared with the negotiating parties from each clan.



Metallica Minerals Executive Chairman, Theo Psaros, CFS General Manager Nicholas Villa with Dingaal representatives, Kenneth McLean (Walmbaar Aboriginal Corporation Chairman) and Stanton Thompson (Walmbaar Aboriginal Corporation Director) during recent site visit to TLO land areas

Potential Offtake partners

The Company continues to receive interest in the future production from the silica sand operation. A number of potential buyers with existing large international silica sand markets have contacted the Company to investigate possibilities to procure our planned production. Within these discussions they are seeking to understand the project development timelines and the planned quality of the silica sand product. They have also advised the silica sand specifications they are seeking. Silica sand product samples produced from our recent metallurgical testing programme are currently being prepared for transport to potential offtake partners.

In June, CFS hosted a potential offtake partner on a site visit to Cape Flattery. One of the highlights of the site visit was the interaction with the traditional landowners who welcomed the visitors to country and participated in the tour of the project area.

Metallurgical testing

The next phase of metallurgical studies has commenced and will concentrate on the iron variability and final product specifications. Variability studies on a range of Fe_2O_3 samples at 100ppm intervals from within the Measured Resource area (see map below) will help optimise the sand recovery sequence and is an important part of the early DFS work.

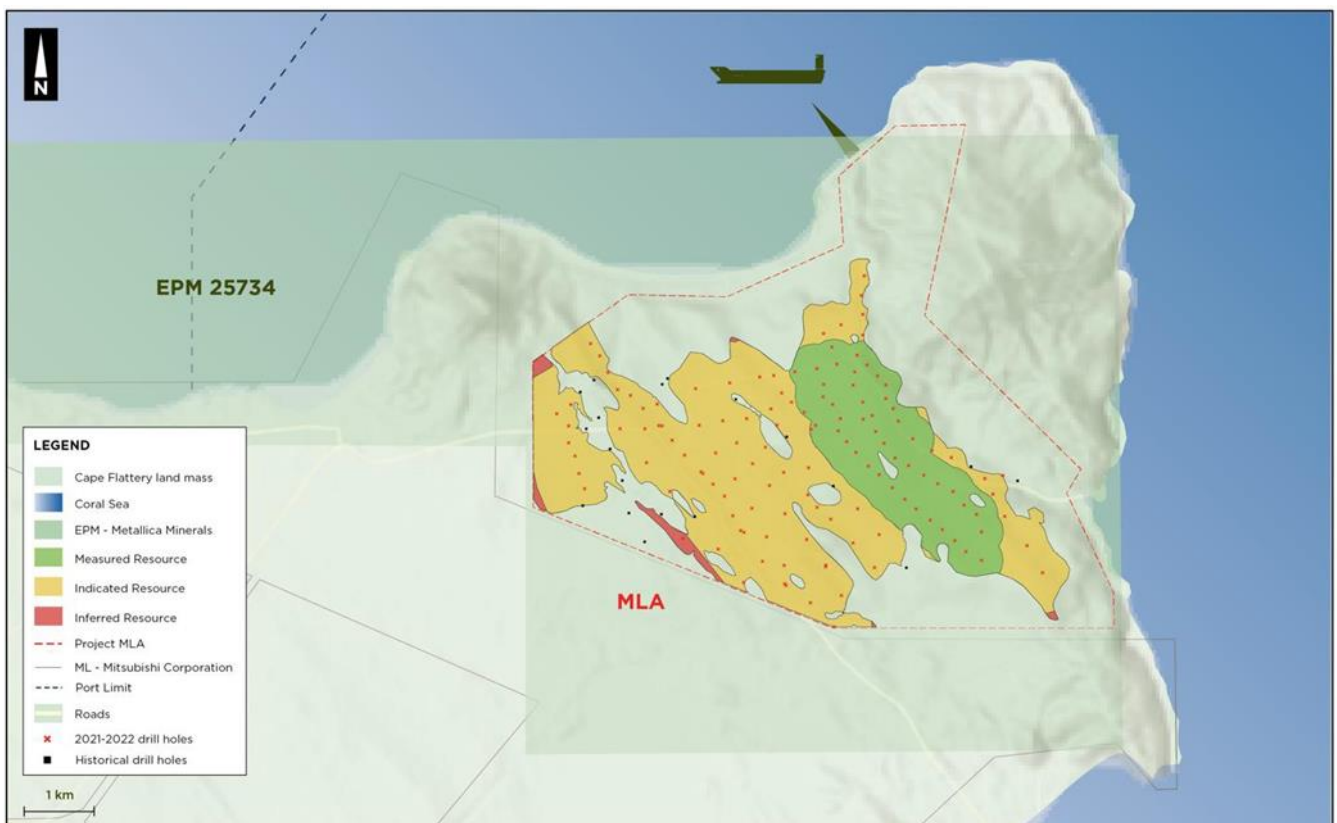


Figure 2: Cape Flattery Silica Project – Distribution of the various Resource categories (see Resource table on page 4 below)

Definitive Feasibility Study underway

The Definitive Feasibility Study (DFS) is underway and is planned for completion in 2nd Quarter 2023.

Detailed planning for the DFS has been presented to the Board of Metallica and work on multiple work streams has commenced.

A Request for Proposal (RFP) has been sent to nine (9) potential transshipping service providers with appropriate capability and who have indicated interest in participating in the DFS.

Water Application

Following the CFS Project being designated a Project of Regional Significance by Queensland's Department of Regional Development, Manufacturing & Water (DRDMW), further work is underway for the formal application to extract ground water for the planned sand recovery and processing operations from the Cape York unallocated strategic reserve. (see ASX release 24 February 2022: Cape Flattery Silica granted Project of Regional Significance Status).

About the Cape Flattery Silica (CFS) Project

Metallica's 100% owned Cape Flattery Silica Sands (CFS) project is adjacent to the world class Cape Flattery Silica Sand mining and shipping operation owned by Mitsubishi. Exploration drilling to date has now confirmed that the sand dunes within EPM 25734 contain high purity silica sands with an in-situ quality which is understood to be comparable to Mitsubishi's Cape Flattery Silica Mine. On 15 June 2021 the Company announced that it had lodged a Mine Lease Application (MLA) for the project (see ASX Release: 15 June 2021 MLA Lodged for Cape Flattery Silica), Figure 1.

On 21 March 2022 the Company released the Pre-feasibility Study (PFS) for the CFS Project (see ASX Release 21 March 2022: "Cape Flattery Silica PFS Confirms Excellent Economics and Maiden Ore Reserve").

The key highlights of the PFS Report are as follows:

- Cape Flattery Silica Sand Project's (CFS) Pre-Feasibility Study (PFS) confirms the Project can be a long-life silica sand project producing high-quality silica sand for the booming Asia-Pacific glass manufacturing markets supplying the solar panel industry.
- The PFS returns pre-tax Net Present Value (NPV⁸) of A\$290 million (M), Internal Rate of Return (IRR) of 34.9% and life of Project cash revenue of A\$2,127M. This compares with the Updated Scoping Study (10 November 2021) which had an NPV⁸ of A\$253M.
- The Capital Cost of CFS is estimated to be \$79M (including a 15% contingency of \$10M) with a payback period from commencement of production of 3.9 years. All production is based on the Maiden Ore Reserve (refer table 2 – Ore reserves).

- The Maiden Ore Reserve of 46 million tonnes @ 99.18% SiO₂ (refer to table 2 below) is exploited over a 25-year Project life producing saleable product of 1.35Mt per annum.
- Sensitivity and scenario analysis demonstrate the Project is financially robust and can maintain a positive Net Present Value (NPV) through stress-testing of the various scenarios.
- Both the sand extraction area and the industry standard processing facility will have a small footprint and low environmental impact.
- A purpose-built jetty is planned to be constructed (subject to Development Approval (DA)) to allow barge loading and transhipping operations. This infrastructure, importantly, is located within the Port Limit of Cape Flattery.
- Development of CFS will deliver employment, apprenticeship and training opportunities to the Hope Vale and Cooktown communities, particularly the local indigenous communities.
- CFS will contribute to delivery of the Queensland Government's commitment to the development of new economy minerals in Far North Queensland.
- The results from the PFS demonstrate a strong financial case and the Company's Board has approved commencement of a Definitive Feasibility Study (DFS) in Q2 2022.

The Company released an upgrade of the Mineral Resources for the CFS Project (see ASX Release 7 April 2022: "Significant Increase in Measured and Indicated Resources at Cape Flattery Silica Project")

Table 1 –Cape Flattery Silica Project Mineral Resources

Resource Classification	Silica Sand (Mt)	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	TiO ₂ %	LOI %	Silica Sand (Mm ³)	Density (t/m ³)
Measured	16.7	99.26	0.10	0.08	0.13	0.17	10.4	1.6
Indicated	35.2	99.14	0.13	0.13	0.14	0.19	22.0	1.6
Inferred	0.3	99.06	0.14	0.16	0.12	0.23	0.20	1.6
Total	52.2	99.18	0.12	0.11	0.14	0.18	32.60	1.6

The Resource has been prepared in accordance with the JORC Code 2012 – A cut-off grade 98.5% has been defined based on the surrounding data. These results show there is potential to produce a premium grade silica product using standard processing techniques.

Table 2 –Cape Flattery Silica Project Reserve

Ore Reserve Category	Silica Sand (Mt)	SiO₂ %	Fe₂O₃ %	Al₂O₃ %	TiO₂ %	LOI %	Silica Sand (Mm³)	Waste Mt
Probable Reserve	46	99.18	0.12	0.11	0.14	0.19	28.76	2.6

This announcement has been approved in accordance with the Company's published continuous disclosure policy and has been approved by the Board.

For further information, please contact:

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Competent Person Statement Cape Flattery Silica Sand Resource

The information in this report that relates to the Cape Flattery Silica Project – Eastern Resource Area is based on information and modelling carried out by Chris Ainslie, Project Engineer, who is a full-time employee of Ausrocks Pty Ltd and a Member of the Australasian Institute of Mining & Metallurgy. The work was supervised by Mr Carl Morandy, Mining Engineer who is Managing Director of Ausrocks Pty Ltd and a Member of the Australasian Institute of Mining & Metallurgy and also by Mr Brice Mutton who is a Senior Associate Geologist for Ausrocks Pty Ltd. Mr Mutton is a Fellow of the Australasian Institute of Mining & Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Morandy and Mr Ainslie and Mr Mutton are employed by Ausrocks Pty Ltd who have been engaged by Metallica Minerals Ltd to prepare this independent report, there is no conflict of interest between the parties. Mr Morandy, Mr Ainslie and Mutton consent to the disclosure of information in the form and context in which it appears in this report.

The overall resource work for the Cape Flattery Silica Project – Eastern Resource Area is based on the direction and supervision of Mr Mutton who has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves".

Cape Flattery Silica Sand Exploration Results

The information in this report that relates to the Exploration Sampling and Exploration Results is based on information compiled by Mr Patrick Smith, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy.

Mr Smith is the owner and sole Director of PSGS Pty Ltd and is contracted to Metallica Minerals as their Exploration Manager. Mr Smith confirms there is no potential for a conflict of interest in acting as the Competent Person. Mr Smith has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Smith consents to the inclusion of this information in the form and context in which it appears in this release/report.

Reference to Previous Releases

PFS and reserve figures of this announcement have been previously reported to the market in the report dated 21 March 2022.

Drilling, resource estimates and metallurgical results referred to in this announcement have been previously announced to the market in reports dated; 7 April 2022, 12 August 2021, 15 June 2021, 22 June 2021, and 2 March 2021 and are available to view and download from the Company’s website: [ASX Announcements — Metallica Minerals Limited](#)

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. MLM confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

Forward-looking statements

Forward-looking statements are based on assumptions regarding Metallica, business strategies, plans and objectives of the Company for future operations and development and the environment in which Metallica may operate.

Forward-looking statements are based on current views, expectations and beliefs as at the date they are expressed and which are subject to various risks and uncertainties. Actual results, performance or achievements of Metallica could be materially different from those expressed in, or implied by, these forward-looking statements. The forward-looking statements contained in this presentation are not guarantees or assurances of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Metallica, which may cause the actual results, performance or achievements of Metallica to differ materially from those expressed or implied by the forward-looking statements. For example, the factors that are likely to affect the results of Metallica include general economic conditions in Australia and globally; ability for Metallica to fund its activities; exchange rates; production levels or rates; demand for Metallica’s products, competition in the markets in which Metallica does and will operate; and the inherent regulatory risks in the businesses of Metallica. Given these uncertainties, readers are cautioned to not place undue reliance on such forward-looking statements.