

Metallica Minerals Ltd (ASX: MLM)

A Silica Sand Development Company



March 2021



Company Highlights



100% owned Cape Flattery Project is adjacent to the world's largest Silica Sand Mine



First shipment of Silica Sands planned for 2023



38Mt High Purity Silica Sands Resource¹



Cape Flattery Project is within the current Port boundary

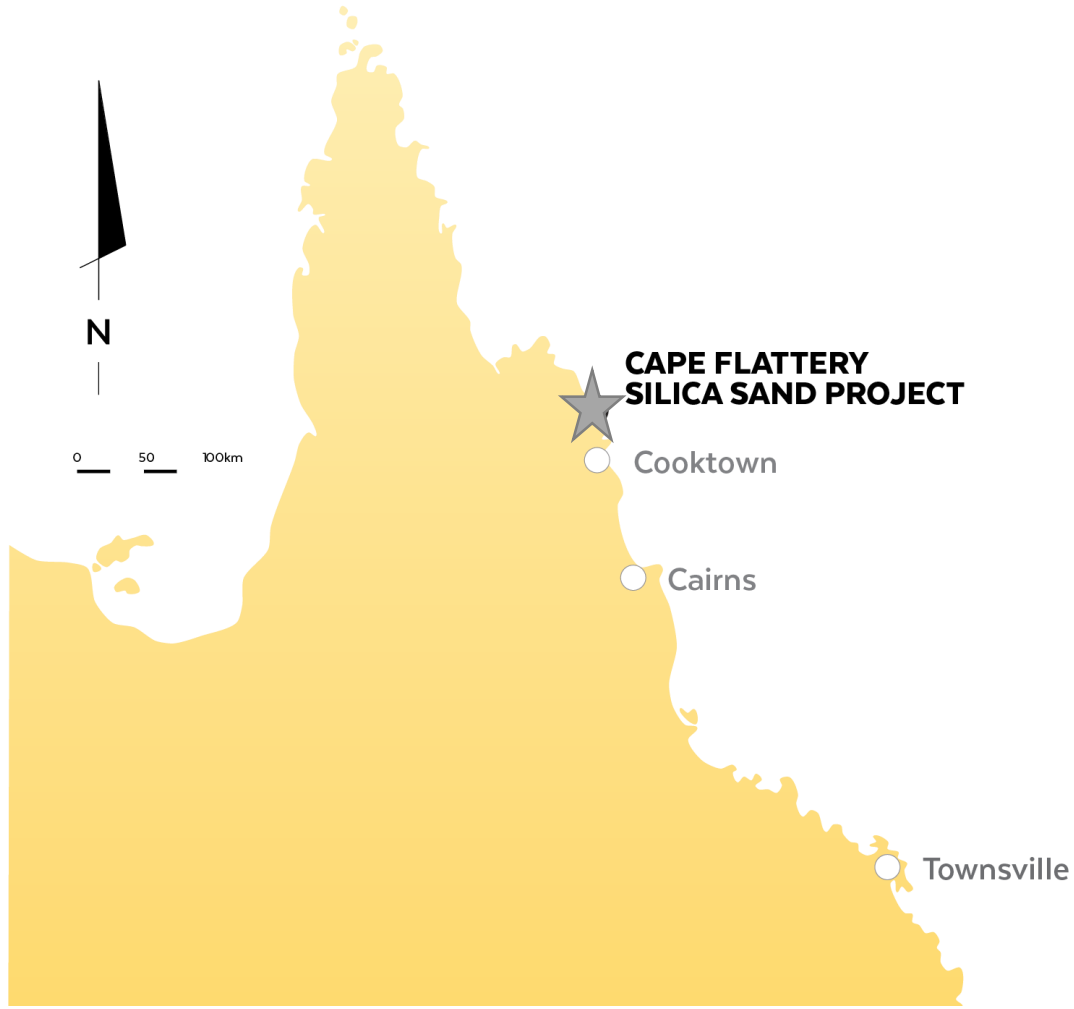


Cash Balance
\$2.4m as at
31 December 2020 ²
No Debt



Shares on Issue
324,377,408

Project Overview



Cape Flattery Silica Sands Project (100% owned)

Metallica is focused on becoming a Silica Sand producer.

The Company remains committed to advancing its existing project portfolio toward development and continuing to identify and pursue opportunities.

Metallica Minerals (MLM) – focused on becoming a mining company



The Board has formulated a strategy to deliver these outcomes on or before 2025:

- MLM is exporting silica sand to the market from Cape Flattery
- A pipeline of other projects and the infrastructure to identify these projects is well established

What needs to be achieved before June 2021 to work towards delivery of the strategy:

Silica Sands – resource defined, key agreements for mining progressing with TLOs, Environmental studies underway, Mining Lease application lodged, offtake partners identified



Cape Flattery Silica Sands Project (100% owned)



- Located adjacent to Mitsubishi’s Cape Flattery mine, the world’s single largest silica sand mine that has been producing since 1967
- Project is located within the Cape Flattery Port area
- Exploration target* of 20-100Mt³ across 3 identified areas
- Assay results confirm high purity silica sands – greater than 99% silica sand (SiO₂)



* The potential quality and grade of the Cape Flattery Silica Sand deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.



LEGEND

- EPM Granted (Cape Flattery Silica Pty Ltd - Metallika Minerals Ltd subsidiary)
- ML's Cape Flattery Silica Mines Pty Ltd (Mitsubishi)
- Exploration Areas
- Target #1



Cape Flattery Silica Pty Ltd			
EPM25734		Cape Flattery	
Tenement Location and Exploration Target			
COMPILED BY	S. Hagan	DATE	05/18
DRAWN BY	A. Davies	DATE	01/18
SCALE	1:100,000	FIGURE	20/18

Cape Flattery Silica Sands Project - JORC Resource

- High purity silica sand resource increased to 38.3Mt @ 99.0% SiO₂
- 22 Drill hole program completed in December 2020
- Resource has scope for significant expansion with additional drilling
- In-situ SiO₂ averages 99% at an 98.5% cut-off grade



CFS Project – Eastern Resource Area – Surface Dune Boundary (green line)

Cape Flattery Silica Sand Classification	Silica Sand (mt)	Silica Sand (Mm ³)	Density (t/m ³)	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	TiO ₂ %	LOI %
Indicated Resource	5.4	3.4	1.6	99.1	0.04	0.09	0.13	0.13
Inferred Resource	32.9	20.5	1.6	99.0	0.07	0.12	0.15	0.11
TOTAL	38.3	23.9	1.6	99.0	0.06	0.12	0.15	0.12

See ASX Release 3 March 2021 "Revised 38 Mt of High Purity Silica Sand Resource"

Cape Flattery Silica Sands Project - Planned Infrastructure



- A key advantage is the project being located in the designated Cape Flattery Port Area
- Queensland Government legislation does not allow for new ports being built outside the designated port areas
- Trucking our product less than 1km to our own jetty for barging operations provides significant commercial advantages
- Close to deep water suitable for barge loading
- Ports North has identified swing basin areas for ships (up to Panamax size vessels) close to this site
- Support from Traditional Land Owners is expected for this location



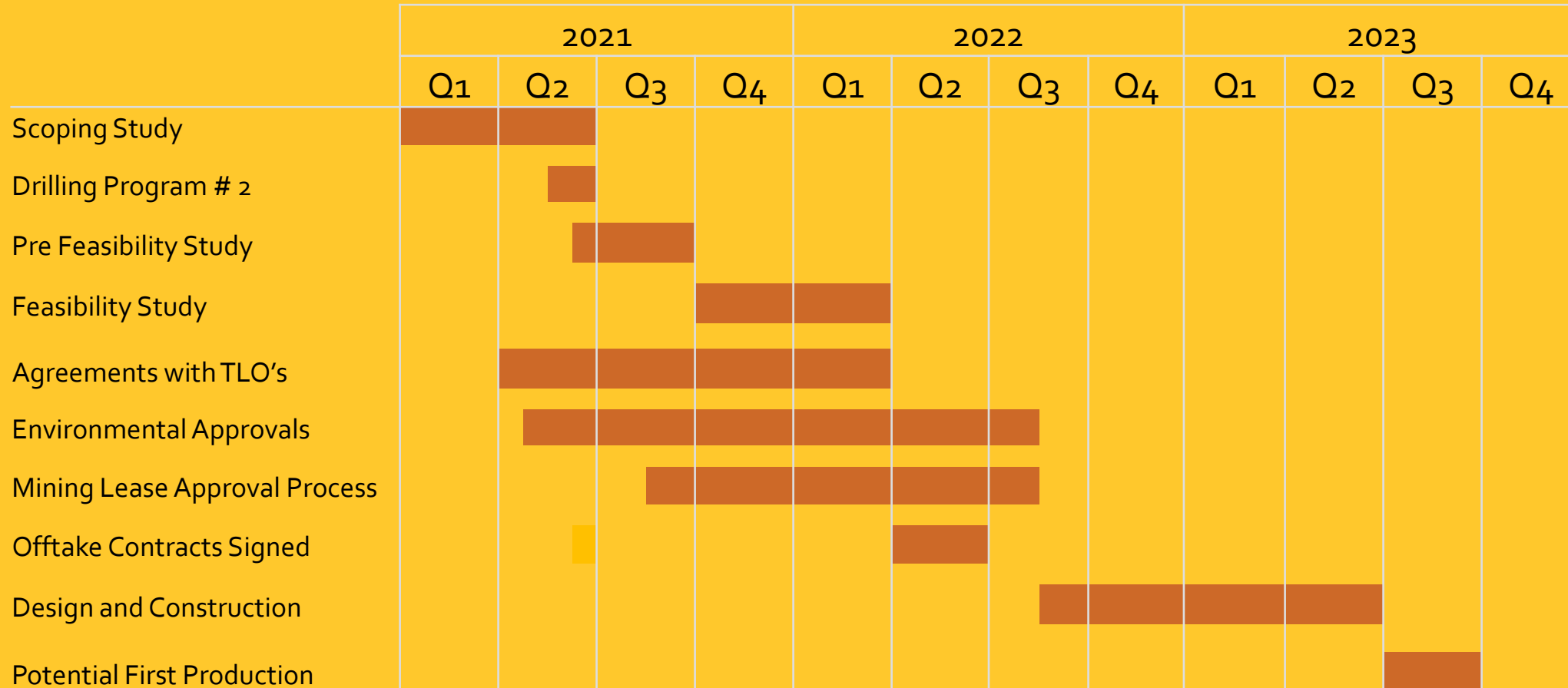
Cape Flattery headland – potential jetty and barge loading area

Cape Flattery Silica Sands Project - next six months

- Metallurgical testwork underway to produce premium product
- Continue Environmental studies
- Water monitoring bores installed
- Scoping Study results to be announced
- Follow up drilling program to further define the resources
- Continued community engagement
- Mining Lease Application to be submitted
- Cultural Heritage Agreements to be progressed
- Appointment of Marketing Consultant (completed)
- Preliminary discussions with Off-Take Partners
- Further investigation of infrastructure options
- PFS underway



Cape Flattery Silica Sands Project - Development Timeframe*



* Timing expectations are based on current best estimates and will be subject to change and subject to approvals received and funding availability

* Based on granting of Environmental Authority (EA), with no Environmental Impact Statement (EIS) required

Silica Sand is in demand – Globally



WORLD POLITICS

A sand shortage? The world is running out of a crucial — but under-appreciated — commodity

PUBLISHED FRI, MAR 5 2021 1:14 AM EST
UPDATED FRI, MAR 5 2021 10:20 AM EST

Sam Meredith
@SMEREDITH19

SHARE



Australia can now join the silica sands race thanks to a global supply crisis

Mining

June 7, 2019 | Angela East

Up until now Australia hasn't been a contender in the silica sands industry, but the tightening supply crunch has made an opening for potential players.

While silica sand is the most abundant mineral on the planet, it is still a finite resource. It's also – apparently – the most used commodity after air and water.

Most supply is used to make concrete for construction, but it is also used to make glass for buildings, solar panels and electronics like mobile phones and TVs, as well as to make car parts.

FINANCIAL REVIEW

Why sand shortage is a big problem

The Lex Columnn

Aug 9, 2020 – 8.11pm



Green

Glass Shortage Threatens Solar Panels Needed for Climate Fix

Bloomberg News
5 November 2020, 14:46 GMT+10 Updated on 6 November 2020, 12:00 GMT+10

- ▶ PV glass output seen 20%-30% short of demand next year
- ▶ Price have risen 71% since July, hurting solar power economics

Bloomberg

Glass Shortage Threatens Solar Panels Needed for Climate Fix

Bloomberg News · 6 days ago



(Bloomberg) -- The world's biggest solar power company says a shortage of glass is raising costs and delaying production of new panels, throwing a wrench into China's plans to accelerate its shift to clean power.

Silica Sand demand – growing stronger and stronger

- According to industry research firm IMARC Group, high-purity silica sands are becoming more sought after, with the global market growing at a compound annual growth rate (CAGR) of around 6% between 2010 and 2017. In 2017, a total of 188 Mt of silica sand was produced globally and in 2019 the size of the market was US\$8 Billion*.
- **IMARC also estimated the global silica sand market could grow from US\$8 billion to US\$20 billion in 2024*.**
- Demand will be driven by the construction market, rising automotive production and sales, mounting per capita income, and technological advancements. Besides this, emerging trends such as increasing usage of hybrid guide plate, solar control glazing for automotive and building glasses, lightweight glazing glass, and advanced nanotechnology in flat glass are also contributing towards the growth of the glass industry, consequently, boosting the demand for silica sand*.
- **Post COVID many countries will embark on infrastructure projects to stimulate their economies. This will also increase the demand for silica sand.**
- Primary Uses of Silica Sands; Manufacturing glass (36%), Foundry use (33%), Hydraulic Fracturing (16%), Filtration (7%) and Abrasives and other uses (8%).

* <https://www.imarcgroup.com/silica-sand-manufacturing-plant>



Silica Sand peer comparisons



Company Name	ASX Code	Market Cap**	Shares on Issue	JORC Resource
Metallica Minerals	MLM	\$12M	324M	38.3Mt @ 99% silica oxide. (5.4Mt Indicated and 32.9 Mt Inferred)
Diatreme Resources <small>Refer to DRX Presentation dated 11 November 2020 and Appendix 2A 12 November 2020</small>	DRX	\$59M	2,572M	47.5Mt @ 99% silica oxide Measured 31mt/Indicated 6mt/Inferred 10.5mt
VRX Silica <small>Refer to VRX Presentation dated 25 August 2020 and Appendix 2A on 2 February 2021</small>	VRX	\$129M	504M	1,056 Mt @ 99.6% to 99.9% silica oxide Inferred & Indicated inc 261mt Probable Ore Reserve
Perpetual Resources <small>Refer to PEC presentation August 2020 and Appendix 2A 18 January 2021</small>	PEC	\$41M	450m	111.3Mt @ 98.6% silica oxide

- The potential quality and grade of the Cape Flattery Silica Sand deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.
- ** Based on share prices at 09/03/2021

Our project is located in the world class Cape Flattery Dune field





Disclaimer & Competent Person Statement

Statements & material contained in this presentation, particularly those regarding possible or assumed future performance, production levels or rates, metal prices, metal markets, resources or potential growth of Metallica Minerals Ltd, industry growth or other trend projections are, or may be, Forward Looking Statements. Such statements relate to future events & expectations as such, involve known & unknown risks & uncertainties.

The Esmeralda Graphite and the Cape Flattery Silica Sands Projects are at the exploration, advanced evaluation & feasibility stage & although reasonable care has been taken to ensure that the facts stated in this presentation are accurate & or that the opinions expressed are fair & reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness.

Actual results & developments of projects and market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors.

Nothing in this presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell shares in any jurisdiction.

This material is used for a company summary presentation only, for more detailed information the reviewer should seek company information as provided in Metallica's ASX releases, Annual & Quarterly Reports.

Forward-looking statements are based on assumptions regarding Metallica Minerals Limited ("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.

Footnotes

1. See ASX Release 3 March 2021 "Revised 38 Mt of High Purity Silica Sand Resource"
2. See ASX Release 29 January 2021 "Quarterly Report for period ending 31 December 2020"
3. See ASX Release 9 February 2021 "Cape Flattery assay results confirm high purity silica sands"

Competent Person Statement

Cape Flattery Silica Sands

The information in this announcement that relates to the Cape Flattery Silica Project-Eastern Exploration Target and this Resource Estimation was based on results and data collected and compiled by Mr Neil Mackenzie-Forbes, who is a Member of the Institute of Geoscientists and is a Consulting Geologist employed by Sebrof Projects Pty Ltd and engaged by Metallica Resources Pty Ltd. Mr Mackenzie-Forbes has more than 20 years mining and exploration experience in Australia with major mining and junior exploration companies. Mr Neil Mackenzie-Forbes consents to the inclusion of this information in the form and context in which it appears in this release/report.

The information in this announcement that relates to the Cape Flattery Silica Project - Eastern Resource Area is based on information and modeling undertaken by Mr Chris Ainslie, Geotechnical 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 Mr Mutton consent to the disclosure of information in the form and context in which it appears in this release/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".

Exploration Target

The potential quality and grade of the Cape Flattery Silica Sand deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.