

Cape Flattery Silica

Brisbane Mining Conference – 23 March 2022



**CAPE
FLATTERY
SILICA**

Metallica Minerals Limited (ASX: MLM)
A new economy minerals company

ersonal use only



**Metallica Minerals
is an Australian
development
company focussed on
delivering high purity
silica sand to a
diversified global
customer-base.**



**CAPE
FLATTERY
SILICA**

ersonal use only

Disclaimer



This presentation has been prepared by Metallica Minerals Limited (ASX:MLM) (Company/Metallica) This document contains background information about Metallica current at the date of this presentation. The presentation is in summary form and does not purport to be all-inclusive or complete. Recipients should conduct their own investigations into the completeness of the information, statements and opinions contained in this presentation and perform their own analysis in order to satisfy themselves as to the accuracy of this information.

This presentation is for information purposes only. Neither this presentation nor the information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sales of shares or other securities in any jurisdiction. This presentation is not a prospectus, product disclosure statement or other offering document under Australian law (and will not be lodged with the Australian Securities and Investments Commission (ASIC)) or any other law. This presentation and the announcement to which it is attached does not and will not form any part of any contract or commitment for the acquisition of Metallica securities.

This presentation does not constitute investment or financial product advice (nor tax, accounting or legal advice) and has been prepared without taking into account the recipient's investment objectives, financial circumstances or particular needs and the opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities involve risks which include (among others) the risk of adverse or unanticipated market, financial or political developments. The information contained in this presentation and related market announcements should not be considered to be comprehensive or to comprise all the information which a shareholder or potential investor in Metallica may require in order to determine whether to deal in Metallica securities or otherwise participate in any offer to acquire or sell securities, nor does it contain all the information which would be required in a prospectus, product disclosure statement or other offer document prepared in accordance with the Corporations Act 2001 (Cth).

To the fullest extent permitted by law, Metallica, its officers, employees, agents and advisors do not make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of any information, statements, opinions, estimates, forecasts or other representations contained in this presentation. No responsibility for any errors or omissions from this presentation arising out of negligence or otherwise are accepted. To the maximum extent permitted by law, Metallica and its directors, officers and employees exclude and disclaim all liability, including without limitation for negligence or for any expenses, losses, damages or costs incurred by you as a result of your participation in any offer or dealing in Metallica securities or the information in this presentation and market announcements to which it is related being inaccurate or incomplete in any way for any reason, whether by negligence or otherwise.

This presentation may include forward-looking statements. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Metallica. Actual values, results or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements. Any forward-looking statements in this presentation speak only at the date of issue of this presentation. Subject to any continuing obligations under applicable law, Metallica does not undertake any obligation to update or revise any information or any of the forward-looking statements in this presentation or any changes in events, conditions, or circumstances on which any such forward-looking statement is based.

Listing Rule Statements and Competent Person Statement



ASX Announcements cited

The following ASX Announcements are cited in this presentation

1. See ASX Release 21 October 2021 “Revised 40% Increase of the Cape Flattery Silica Sand Resource to 53.5Mt”
2. See ASX Release 15 June 2021 “Mining Lease Application lodged for Cape Flattery Silica”
3. See ASX Release 21 March 2022 “Cape Flattery Silica Pre Feasibility Study”
4. See ASX Release 22 June 2021 “Excellent Metallurgical Test results on Cape Flattery Silica Sand”
5. See ASX Release 10 November 2021 “Cape Flattery Silica Sand Project Production Target”

The statements in this presentation concerning Mineral Resource Estimates at the CFS Project are derived from ASX announcements 1, 3 and 5 above.

Listing Rule 5.23: The Company confirms that it is not aware of any new information or data that materially affects the information included in these original market announcements and, in the case of estimates of mineral resources or ore reserves and production forecasts and forecast financial information, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Statements concerning production targets and related financial information are derived from ASX announcements 3 and 5 above.

Listing Rule 5.19.2: The Company confirms that all material assumptions underpinning the production target and corresponding financial information continue to apply and have not materially changed.

Competent Person Statement

The information in this presentation relating to mineral resource estimates or ore reserves is based on information compiled and reviewed by Mr Carl Morandy, who is a Member of the Australian Institute of Mining & Metallurgy. Carl is a fulltime employee of Ausrocks Pty Ltd and has sufficient experience that is relevant to the styles of mineralisation under consideration and to the activity which he is undertaking 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”. Carl consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

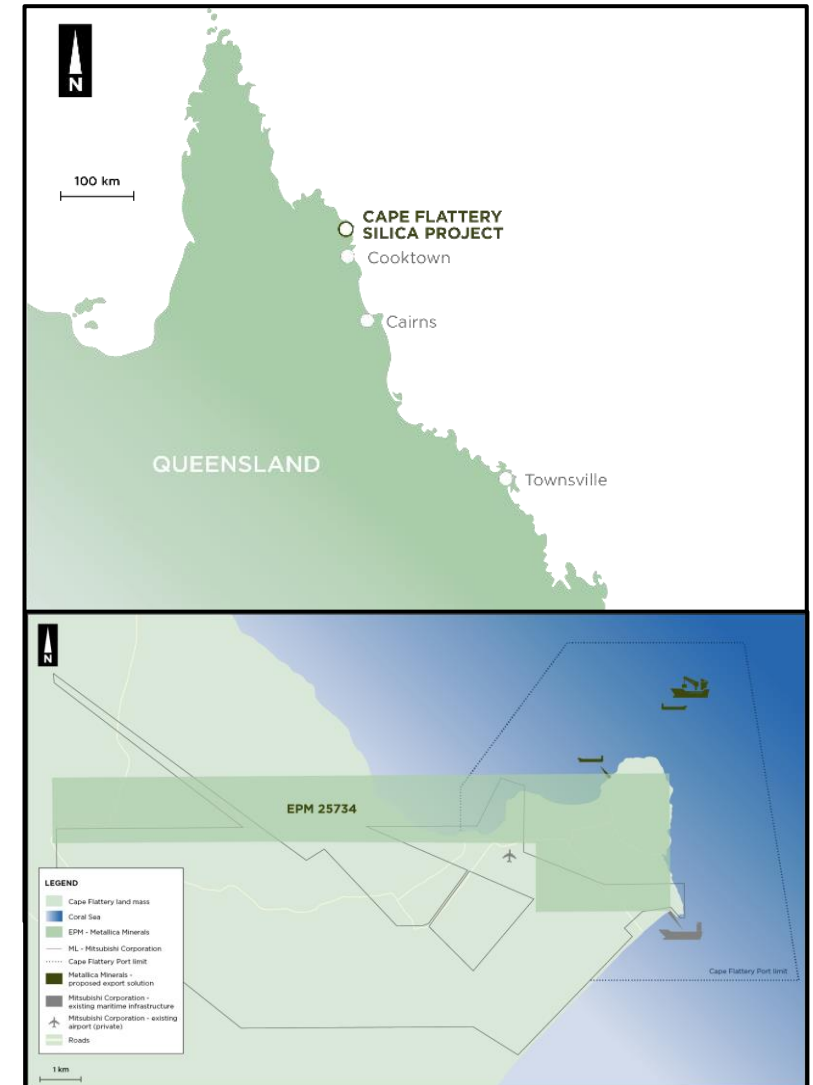
Cape Flattery Silica*



The project is in FNQ adjacent to the world's largest high purity silica sand mine at Cape Flattery (Mitsubishi-owned), operating for more than 30 years

- > Strong demand from Asia for premium quality, low iron silica sand used in surging solar PV market and high quality glass applications
- > High purity silica resource identified (53.5Mt)₁ and maiden Ore Reserve estimated (46 Mt)
- > Pre-Feasibility Study shows positive investment fundamentals – NPV of A\$290M, IRR 34.9%, payback 3.9 years and life of Project cash revenue of A\$2.127B
- > A purpose-built jetty is planned (subject to Development Approval) and located within the port limit of Cape Flattery
- > Low capex project, with short time horizon to cashflow with production targeted at Q3 2024 (subject to environmental approval process).

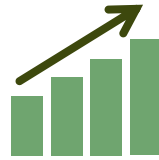
* See ASX Release 21 March 2022 "Cape Flattery Silica PFS – confirms excellent economics"



Company Highlights



Cape Flattery Silica is **100% owned** by Metallica Minerals



Demand for Silica Sands expected to **grow for solar panel production**



46Mt Reserve high purity Silica Sand resource₁



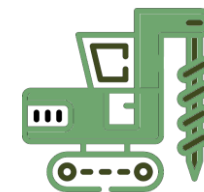
Mining Lease Application lodged₂



Cape Flattery Silica is adjacent to the **current port boundary**



Strong financial results from Pre-Feasibility Study₃



Major drilling programs completed



Excellent Metallurgical test results received₄

1. See ASX Release 21 October 2021 "Revised 40% Increase to the Cape Flattery Silica Sand Resource to 53.5Mt", 2. See ASX Release 15 June 2021 "Mining Lease Lodged for Cape Flattery Silica"
3. See ASX Release 21 March 2022 "Cape Flattery Silica PFS – confirms excellent economics, 4. See ASX Results See ASX Release 22 June 2021 "Excellent Metallurgical Test results on Cape Flattery Silica Sand"

Project of Regional Significance



Cairns Post

My News Local Queensland National World Opinion Business Entertainment Lifestyle Sport

News > Cape York

Cape poised for silica mine boom as project gets 'significant' status

An emerging Cape York silica miner could be granted a major water allocation after being deemed a state significant project by Queensland's Department of Regional Development.

Peter Carruthers [Follow](#)

@petercarruther1 2 min read March 9, 2022 - 6:00AM The Cairns Post



Quarry

Environmental News, Industry News, News

Metallica turns the tap on Cape Flattery silica sand project

HENRY BALLARD
25/02/2022, 12:27 pm 75

[Facebook](#) [Twitter](#)

STOCKHEAD

Mining • Silica



Mining

The world's gone silica and this sands player is hitting all the right notes with its new project

March 16, 2022 | Special Report

AUSTRALIA'S MINING MONTHLY

24 February 2022

Water for Metallica



METALLICA Minerals can tap into a 25,000 megalitre unallocated water reserve at Cape York in Queensland's Far North following the listing of the Cape Flattery silica sand project as a project of regional significance by the Department of Regional Development, Manufacturing and Water.

Corporate snapshot



Share Price

3.2c

(as at 21 March 2022)

Ordinary Shares

665.9m

Options

172.3m

\$0.06

Market Cap

\$21.3m

Cash

\$7.2m

(as at 31 December 2021)

Debt

Nil

Top 20
shareholders
hold **55%**
of Register

Metallica Board

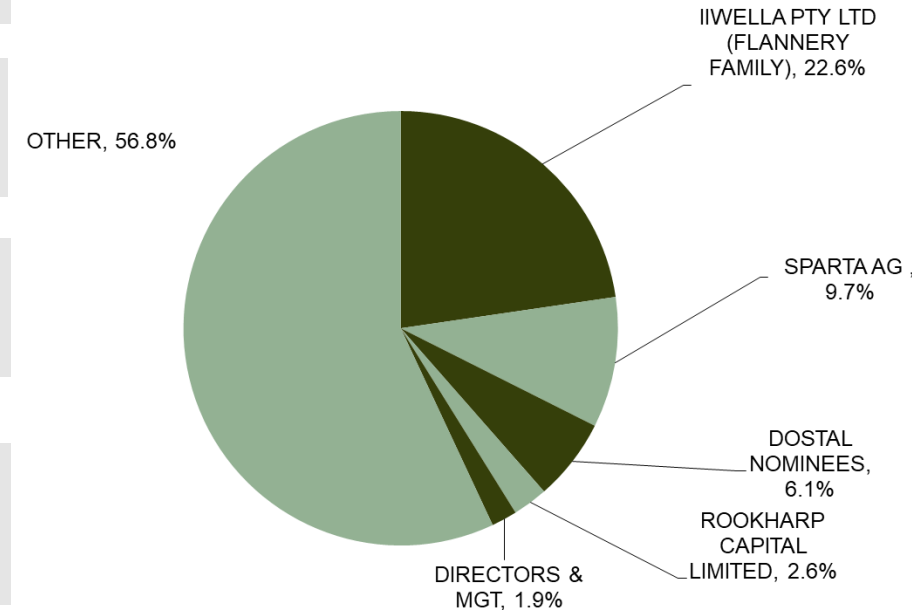
Theo Psaros,
Executive Chairman

Brad Sampson,
Non-Executive Director

Mark Bojanjac,
Non-Executive Director

Scott Waddell,
CFO and Company
Secretary

Nicholas Villa,
General Manager,
Cape Flattery Silica



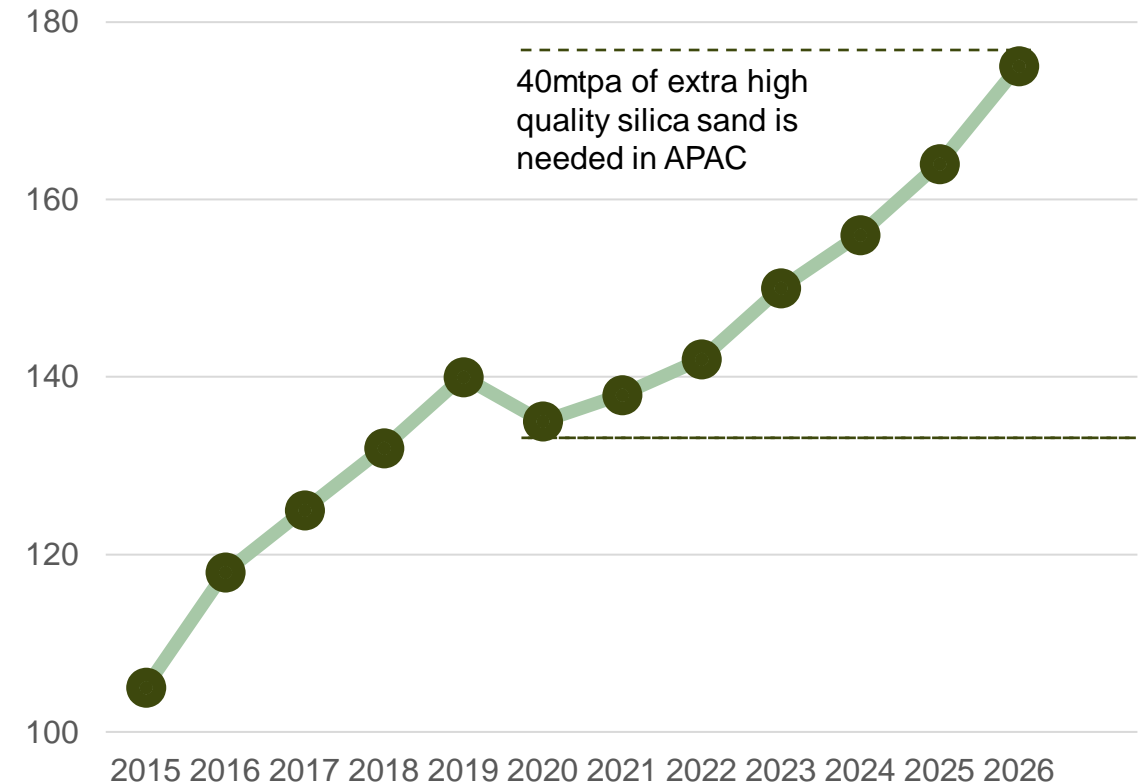
Demand for Silica Sand



- > China and Asia's demand has been growing strongly.
- > Increasing demand for high-grade silica sand is underpinned by global population growth, accelerating electrification, carbon neutrality objectives and Government policy, and the structural transition from fossil fuels to greener technologies, in particular solar energy.
- > IMARC estimates the global silica sand market could grow from US\$8 billion in 2019 to US\$20 billion in 2024*.

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

APAC Sales Volume (mtpa)

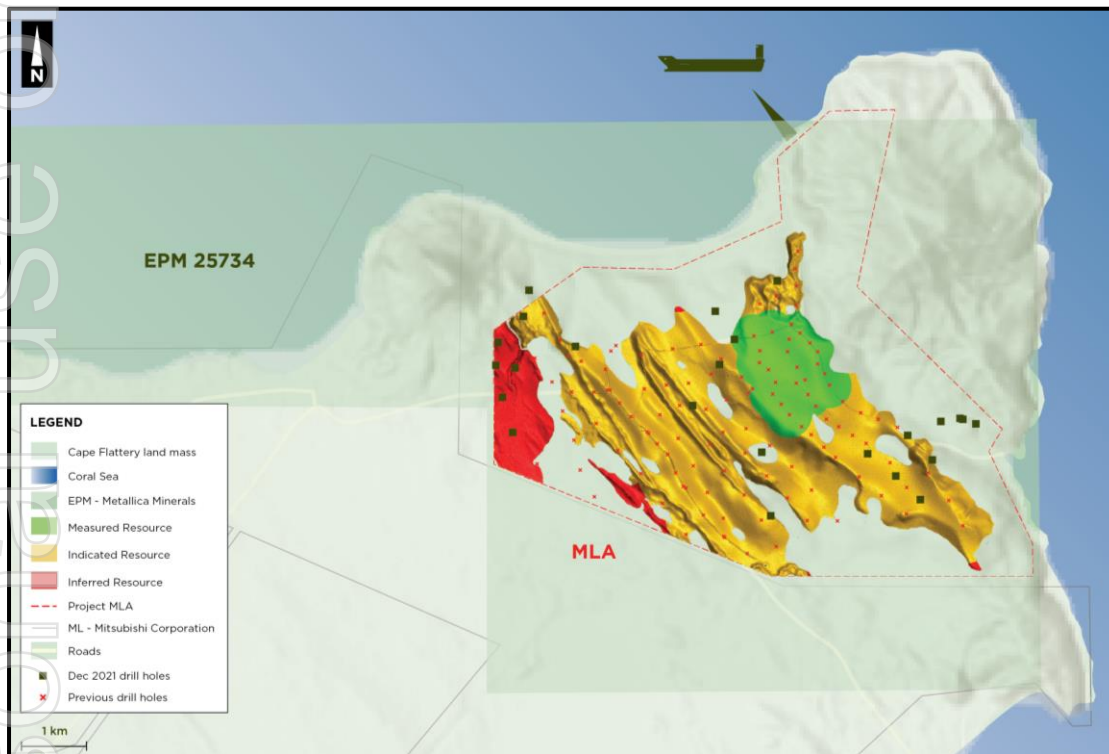


Source: IMARC Group, Report Title: "Asia Pacific Silica Sand Market: Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026," February 2021

JORC Resource₁



Ore Reserve Category	Tonnage Mt	SiO ₂ %	Fe ₂ O ₃ %	TiO ₂ %	Al ₂ O ₃	LOI%	Waste Mt	Silica Sand Mm ³
Probable Reserve	46	99.18	0.12	0.14	0.11	0.19	2.6	28.76



CFS Project – Eastern Resource Area with Mining Lease boundary and completed Drill holes

- > High purity silica sand resource of 53.5Mt @ 99.2% SiO₂
- > 144 Drill holes completed
- > In-situ SiO₂ averages 99.2% at an 98.5% cut-off grade
- > Mining Lease application lodged over the Resource area

Resource Category	Measured	Indicated	Inferred	Total
Silica Sand (Mt)	9.6	38.2	5.7	53.5
SiO ₂ (%)	99.29	99.15	99.26	99.19
Fe ₂ O ₃ (%)	0.10	0.13	0.11	0.12
TiO ₂ (%)	0.13	0.14	0.11	0.14
LOI (%)	0.18	0.19	0.18	0.19
Al ₂ O ₃ (%)	0.08	0.12	0.16	0.12
Density (t/m ³)	1.6	1.6	1.6	1.6
Silica Sand (Mm ³)	5.97	23.91	3.54	33.41

See ASX Release on 21 October 2021 "Revised: 40% increase of the Cape Flattery Silica Resource to 53.5Mt".

Pre-Feasibility Study outcomes₃



3. See ASX Release 21 March 2022 "Cape Flattery Silica PFS - confirms excellent economics"

* The price assumption is for a 'low iron' silica sand product suitable for solar PV cover glass manufacturing (FOB-Cape Flattery Port)

+Capital development costs include a 15% contingency (\$9.6m)

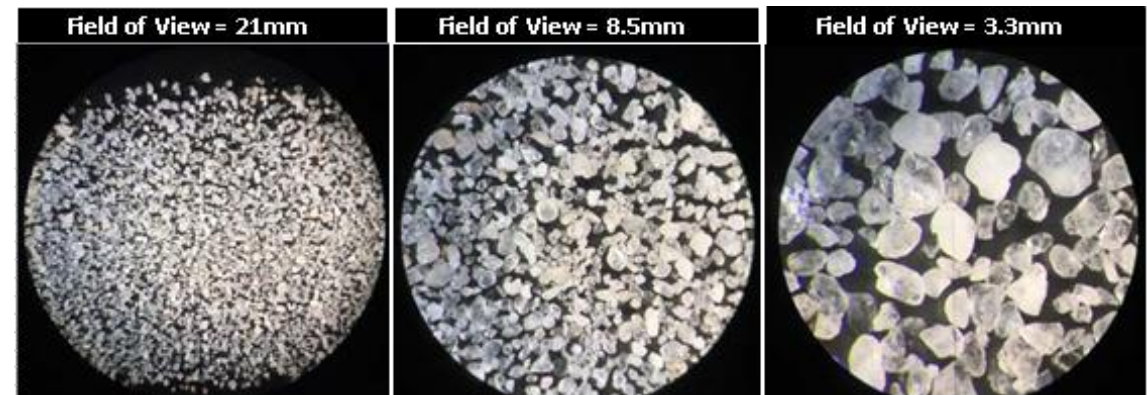
Personal use only

Metallurgical Test work₄



- > Bulk sample metallurgical testing confirms high quality silica sand product
- > The test work confirmed a product with 99.9% SiO₂, 160ppm Fe₂O₃ and 330ppm Al₂O₃
- > Further work included a successful HAL test to reduce Fe₂O₃ from 160ppm to 50ppm Fe₂O₃. (note HAL will not be conducted at Cape Flattery)
- > Previous test work demonstrated a relatively low contaminant product with an attractive narrow particle size distribution and a high-moderate yield

PFS Feed and product samples					
	SiO ₂ %	Al ₂ O ₃ ppm	Fe ₂ O ₃ ppm	TiO ₂ ppm	LOI 1000 %
Prepared feed	99.7	560	450	680	0.06
Non-magnetic product process	99.9	330	160	210	0.06
Hot Acid Leaching product	99.9	270	50	160	0.4



4. See ASX Release 22 June 2021 "Excellent Metallurgical Test results on Cape Flattery Silica Sand"

Site Layout



Location of the Mine Infrastructure Area (plant, stockpile and accommodation)

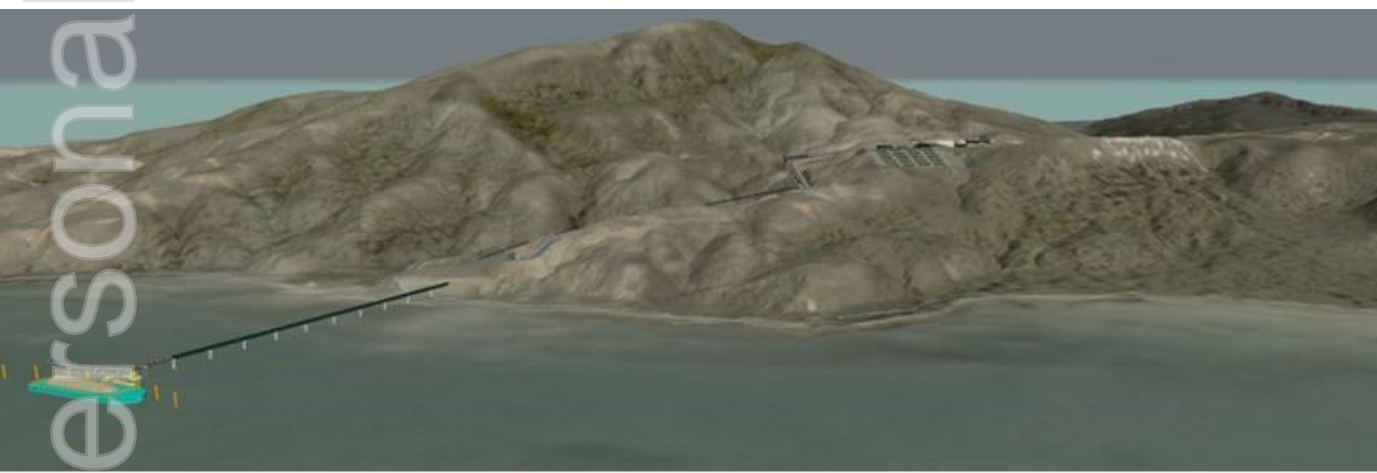
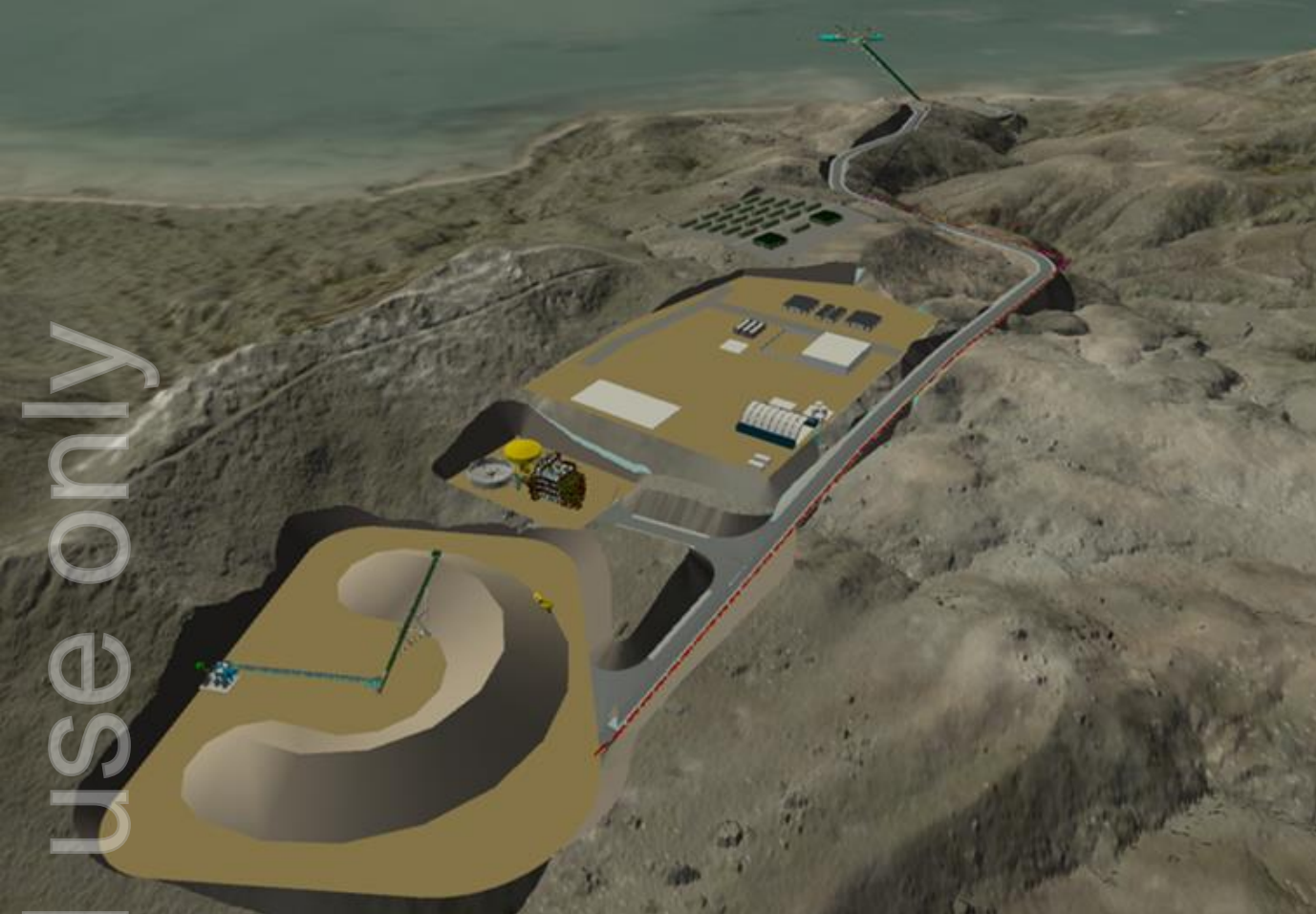
Source see ASX Release 21 March 2022 "Cape Flattery Silica PFS confirms excellent economics"



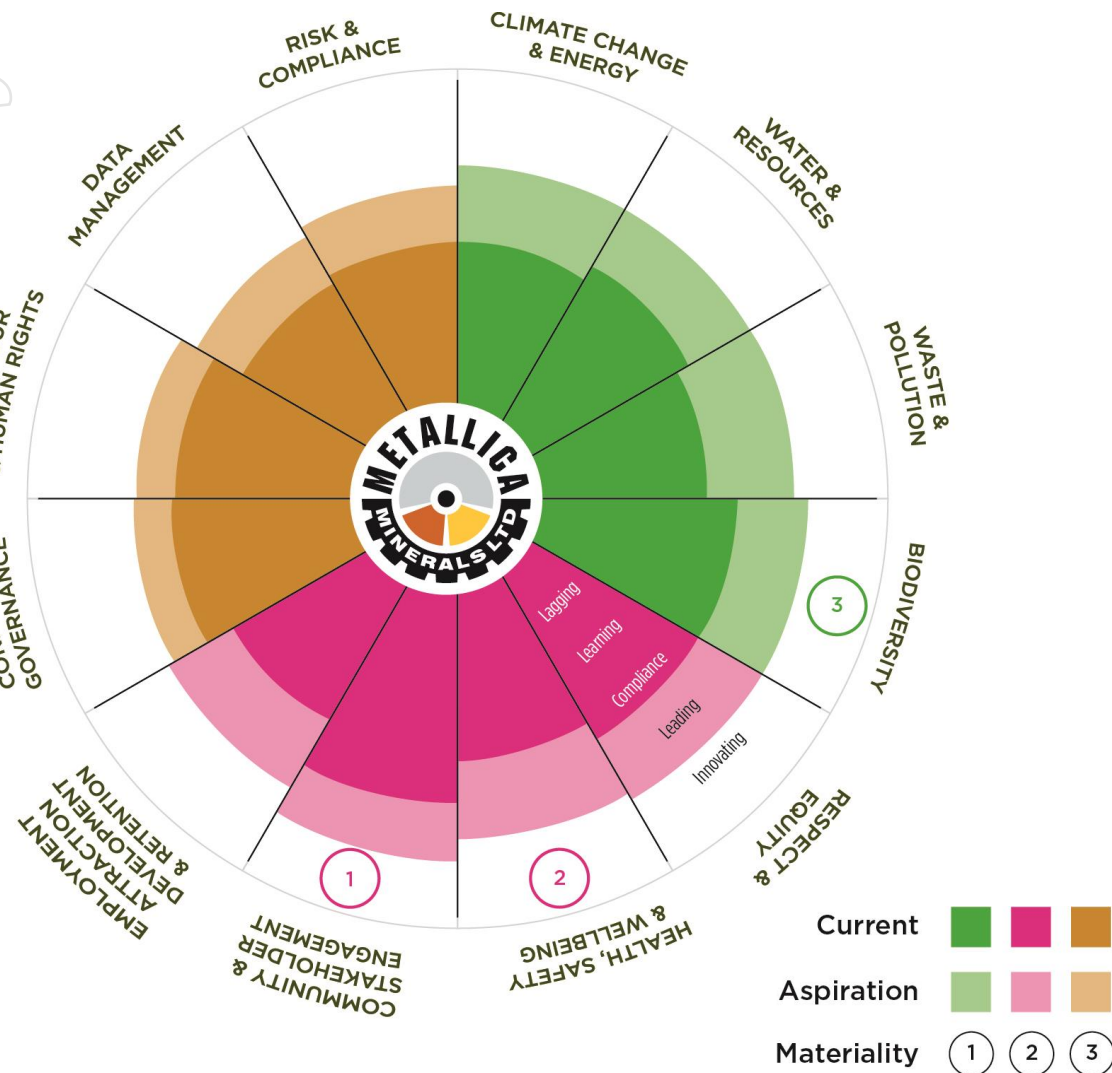
Planned project operations

Key site infrastructure includes:

- Product stockpile
- Processing plant & pad
- Conveyor
- Jetty Infrastructure facility
- Purpose built accommodation facility



Environmental, Social & Governance (ESG) benefits and principles



We engaged a series of stakeholders to understand which ESG themes are of material importance to the Project.

Feedback and shared perception across the CFS internal and external stakeholders surveyed was highly complementary regarding CFS's consultative approach to addressing environmental and social aspects of the proposed project.

Delivering future value for our shareholders



- > Commence DFS planning
- > Further Metallurgical test work underway
- > Finalise Environmental studies including PRCP
- > Environmental Application to be lodged Q2 2022
- > Traditional Landholder Agreements negotiation underway
- > Jetty Development Application to be lodged Q2 2022
- > Continuing discussions with potential Off-Take buyers
- > Continued community engagement
- > Progress Project of Regional Significance Water Application



Cape Flattery drilling July/August 2021



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



CAPE
FLATTERY
SILICA



ersonal use only