

Cape Flattery Silica

Annual General Meeting – 17 November 2022



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Metallica Minerals Limited (ASX: MLM)
A critical minerals company

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Listing Rule & Competent Person Statements



ASX Announcements cited

The following ASX Announcements are cited in this presentation

1. See ASX Release 7 April 2022 “Significant Increase in Measured & Indicated Resources at Cape Flattery Silica Project”
2. See ASX Results 28 April 2022 “Positive Metallurgical test work results achieved at CFS”
3. See ASX Release 15 June 2021 “Mining Lease Application lodged for Cape Flattery Silica”
4. See ASX Release 21 March 2022 “Cape Flattery Silica Pre Feasibility Study”
5. See ASX Release 30 August 2022 “MOU signed to explore off-take arrangements on CFS Project”
6. 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, 4 and 6 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 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 is appears in this release/report.



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

LEGEND

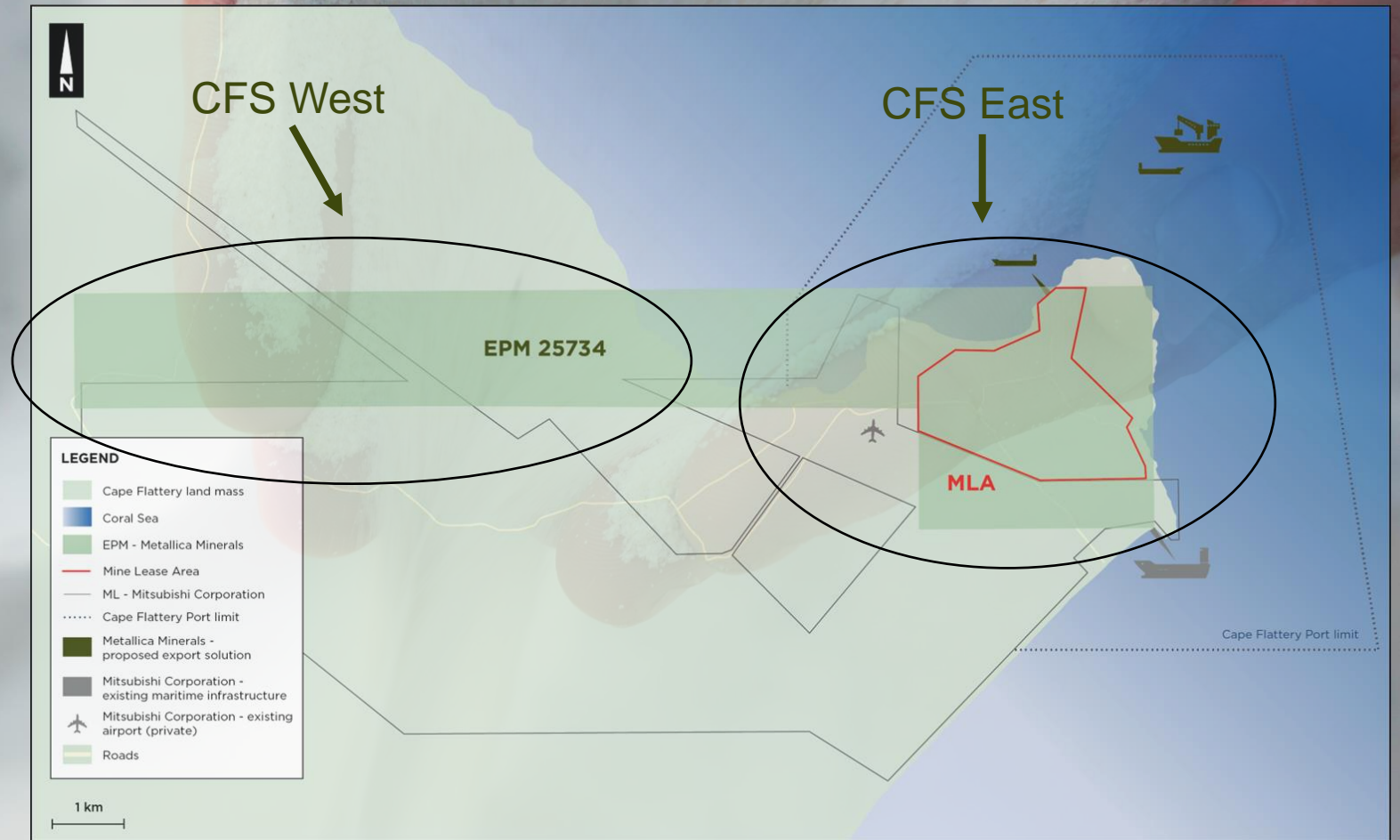
- Cape Flattery land mass
- Coral Sea
- Cape Flattery EPM 25734
- Cape Flattery MLA 100284
- Cape Flattery Port limit
- Mitsubishi ML
- Diatreme MLA
- Diatreme infrastructure (road)
- Roads

17.5 km



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THE PROJECT AREAS



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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

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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.

Company Highlights



Cape Flattery Silica (CFS) is **100% owned** by Metallica Minerals and deemed a project of Regional Significance



46Mt Reserve high purity Silica Sand resource₁



Excellent internal Metallurgical test results received – potential customer acceptance underway₂



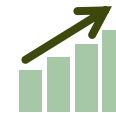
Mining Lease Application lodged₃



CFS project has a **transport solution** – located within Port Limit of Cape Flattery



PFS highlights strong positive, low Capex, low Opex and Reserve for 25 years production₄



Booming production of Solar panels stimulates significant demand for high purity silica sand



MoU executed with Mitsui ₅

1. See ASX Release 7 April 2022 "Significant Increase in Measured & Indicated Resources at Cape Flattery Silica Project", 2. See ASX Results 28 April 2022 "Positive Metallurgical test work results achieved at CFS" 3. See ASX Release 15 June 2021 "Mining Lease Lodged for Cape Flattery Silica" 4. See ASX Release 21 March 2022 "Cape Flattery Silica PFS – confirms excellent economics, 5. See ASX Release 30 August 2022 "MOU signed to explore off-take arrangements on CFS Project".

Corporate snapshot



Share Price

3.5c

(as at 15 November 2022)

Cash

\$3.6m

(as at 30 September 2022)

Ordinary Shares

670.7m

Debt

Nil

Listed Options

179.6m

\$0.06

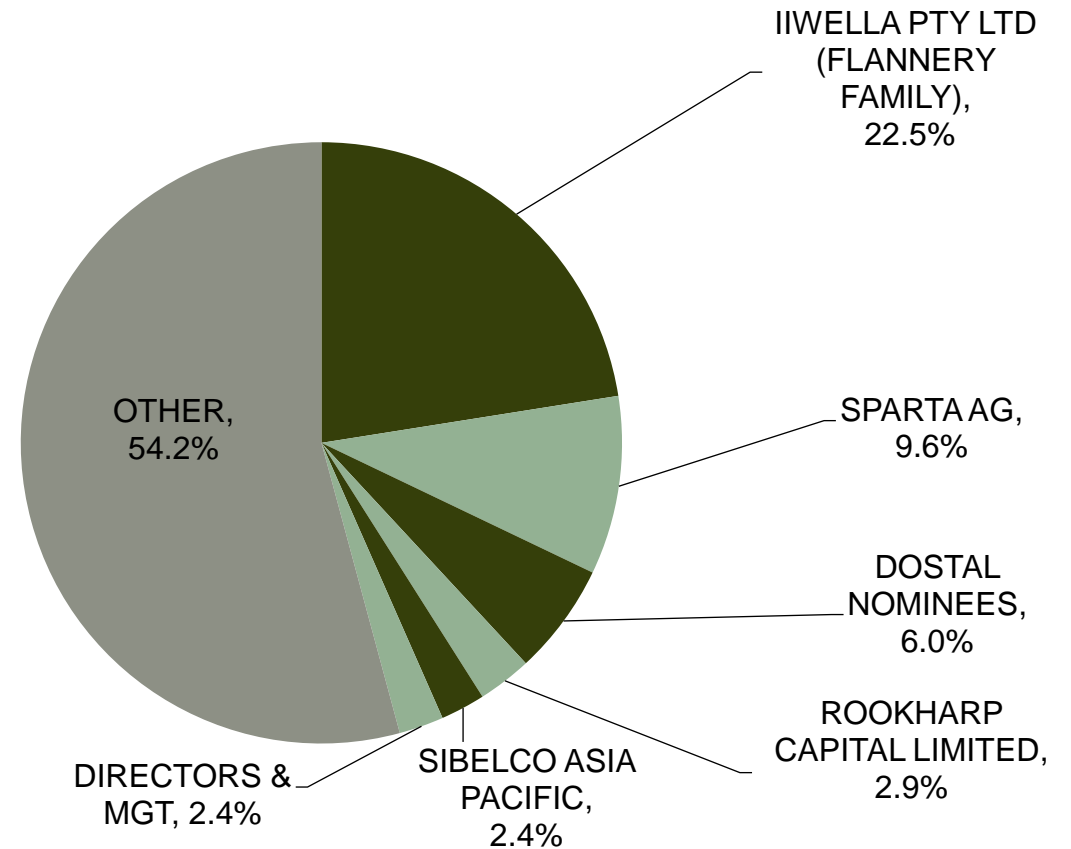
Unlisted Options

21.7m

Market Cap

\$23.5m

Top 20
shareholders
hold **58%**
of Register



Board of Directors



Theo Psaros
Non-Executive Chairman

Appointed 1 February 2019

Mr Psaros is an experienced Company Director and Executive. He has over 30 years of diverse global and local commercial experience in a number of business sectors and industries within multi-million dollar publically listed company, private companies and government departments.

Mr Psaros resource industry experience included a number of years as CFO and COO of MetroCoal Limited, Chairman of the Surat Basin Coal Alliance and a member of the industry group that assisted the Queensland Government Department of Natural Resources and Mines to prepare the 30 year strategic plan for the resources industry in Queensland (ResourcesQ).

Mr Psaros is a Chartered Accountant having previously worked for PwC and has worked in the regulatory industry in London. He is a Graduate of the AICD and has significant experience with capital raising and infrastructure development.



Brad Sampson
Non-Executive Director

Appointed 13 May 2021

Brad Sampson is a Brisbane based internationally experienced business leader, Director and mining professional with more than 30 years resources industry experience. He brings significant mine development and operating experience to the Metallica Board along with listed company governance experience across multiple international jurisdictions. Brad has experienced all aspects of mining operations, having worked in leadership roles through the entire cycle of exploration, development, operations and closure.



Mark Bojanjac
Non-Executive Director

Appointed 13 May 2021

Mark is a Perth based company Director with more than 20 years significant experience in ASX resource companies including those that have taken exploration projects into production. He is currently Executive Chairman of PolarX Limited (ASX: PXX), Non-executive Director of Kula Gold Limited (ASX: KGD). He was previously Non-executive Director and later Managing Director of Adamus Resources leading the transition of the company to a gold producer.

Management



Scott Waddell
CFO and Company Secretary
Appointed 1 February 2019

- > More than 28 years' resources experience gained through positions with Metro Mining Limited, Cape Alumina Limited, Anglo Coal and Rio Tinto Alcan.



Nicholas Villa
GM, Cape Flattery
Appointed 14 June 2021

- > More than 20 years' mining industry experience
- > Experience in Queensland resource project approvals processes including Environmental Studies and Native Title negotiations
- > Project Manager which delivered Metro Mining's Bauxite Hills mine in Northern Cape York to full production.



Sam Fisher
GM Commercial
Appointed 17 October 2022

- > Over 25 years' experience in dry bulk commodities marketing, infrastructure and logistics from strategy through to execution
- > 10 years' focused on Asian markets with strong focus on business development
- > Held leadership positions with New Hope Corporation and BHP



Pat Smith
Geologist
Appointed 1 February 2021

- > Geologist with 30 years' experience
- > Experience in silica sands, copper, gold, nickel, tin and tantalum
- > Worked as Exploration or Country Manager in Australia, Middle East, Africa and Kazakhstan and PNG



Hamish Manzi
Environmental Consultant
Appointed 1 February 2022

- > More than 20 years' experience in environmental, approvals, stakeholder engagement and sustainability services and solutions



Jeff Brown
Metallurgy Consultant
Appointed 1 February 2022

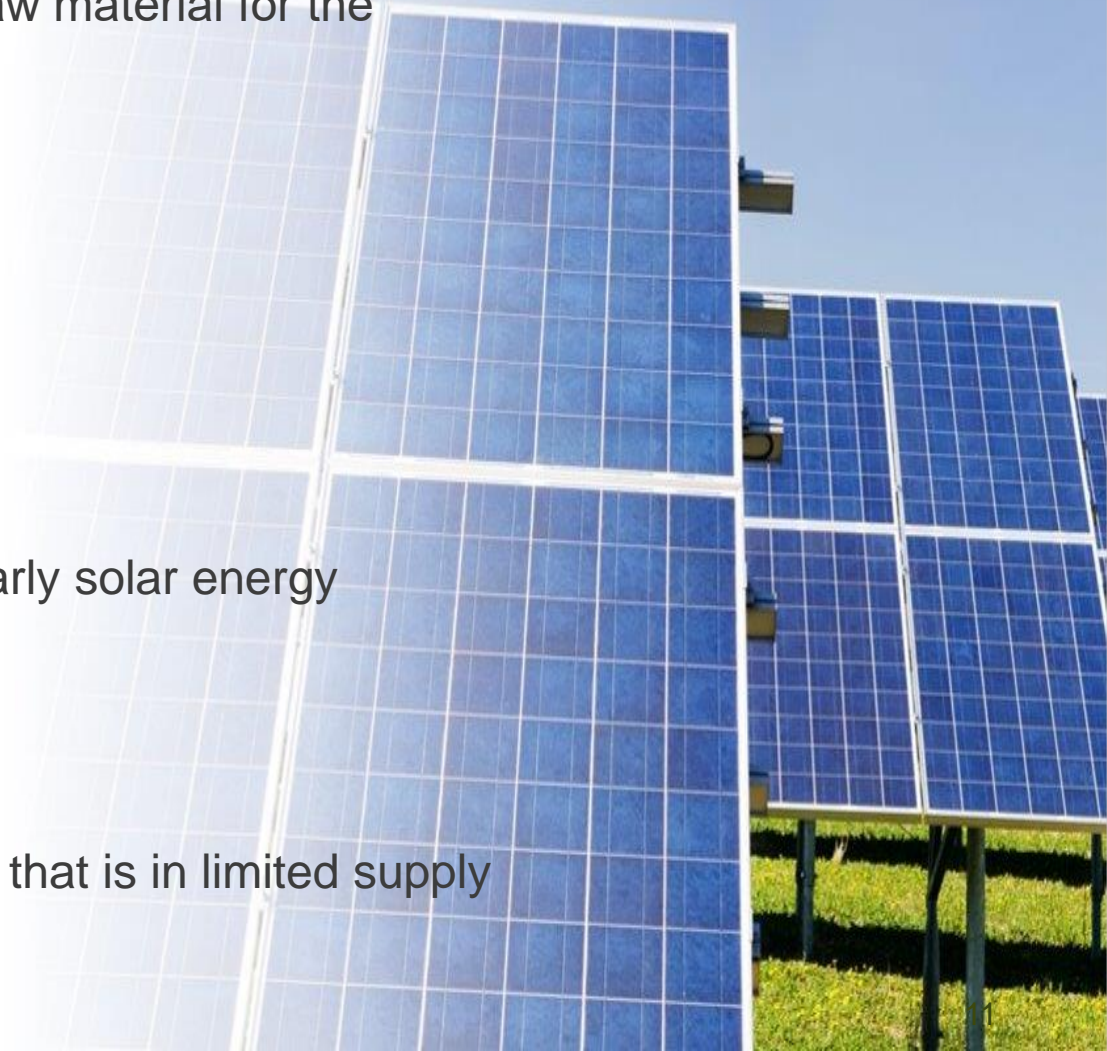
- > Over 25 years' experience in Mineral Sand mining and processing
- > Senior Metallurgist roles with Iluka and Sibelco

Cape Flattery Silica Market drivers

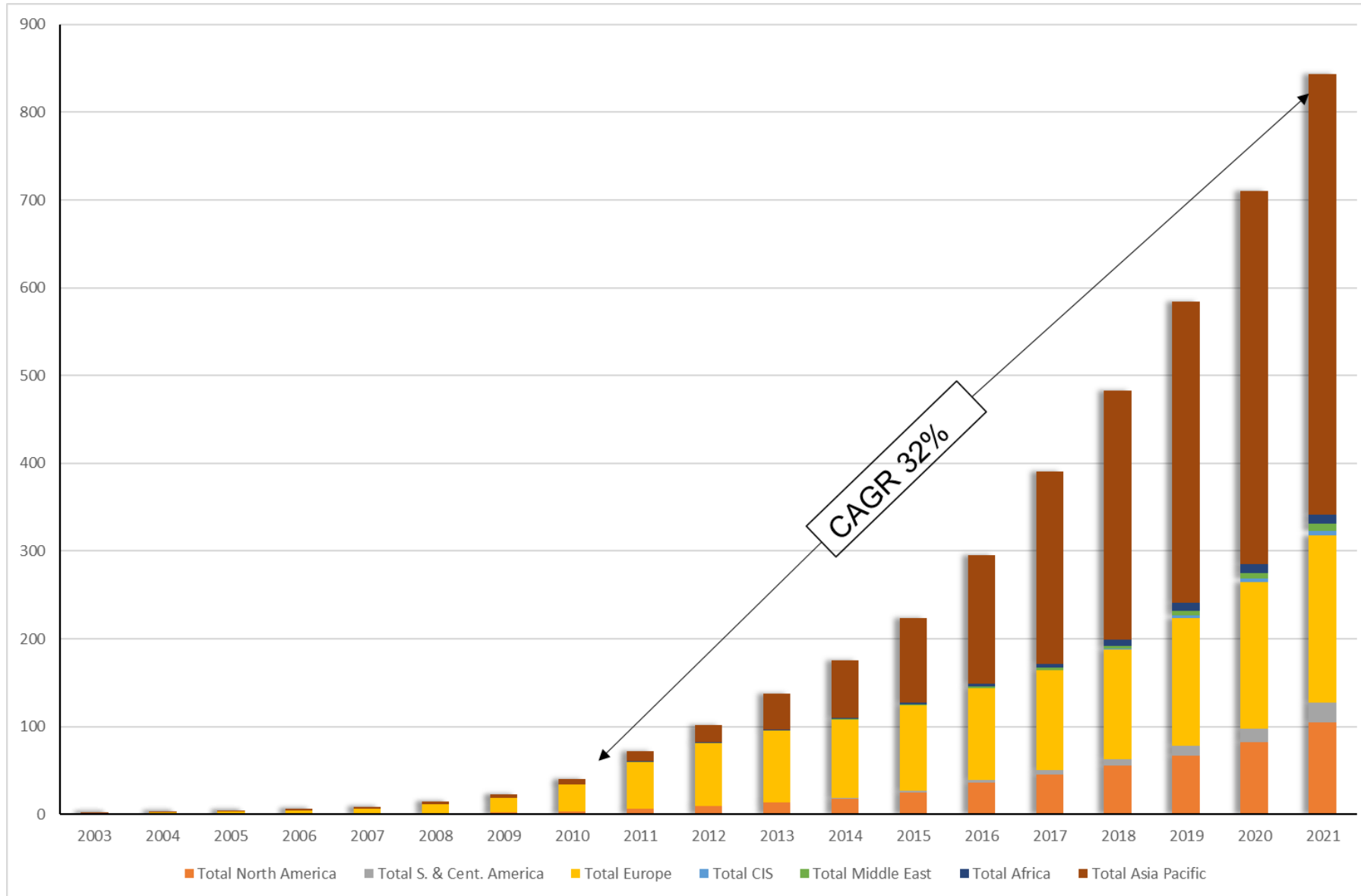


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- > Silica sand is the key ingredient in glassmaking
- > High-quality silica sand such as CFS's silica, is an essential raw material for the production of hi-tech glass
 - Solar panels
 - Smartphones
 - Fibre optics
 - Tablets
 - LED lighting
- > Increasing demand for high-grade silica sand underpinned by:
 - transition from fossil fuels to greener technologies, particularly solar energy
 - global net zero objectives
 - population growth and adoption of “screen” devices
 - accelerating electrification
- > Readily accessible high quality Silica Sand is a finite resource that is in limited supply

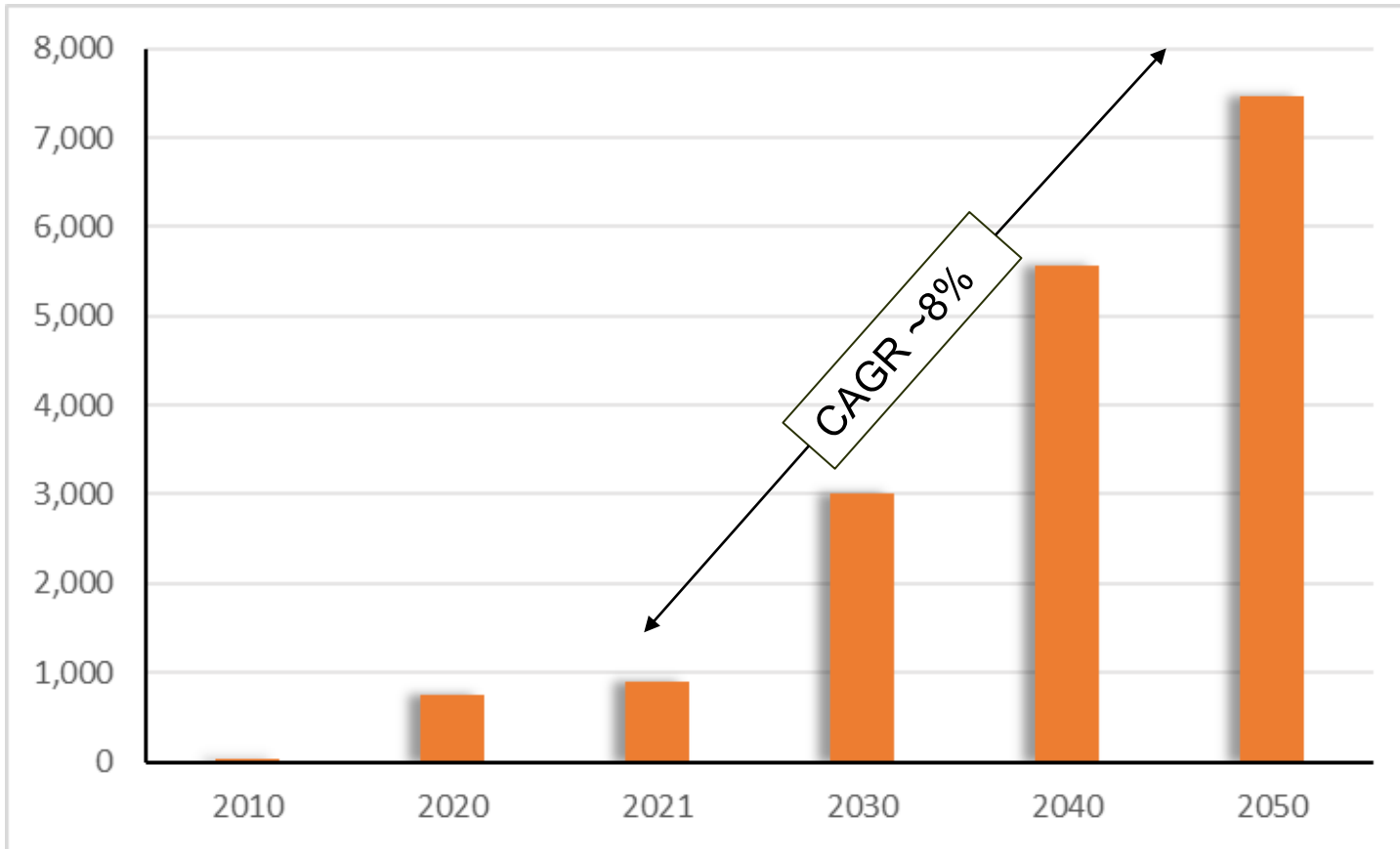


Solar PV installed capacity history (GW) - Global



**Source: IRENA (2022),
Renewable Energy
Statistics 2022**

Global solar PV growth (GW) *STEPS scenario



- Equivalent to installing the capacity of Australia's NEM 100 times
- The vast majority of these panels will be manufactured and installed in Asia
- Glass for solar panels is one of the key markets for high purity silica sand (HPSS)
- Growth in Asian demand for HPSS from this application only, is estimated to be on average ~#2.7MT per annum

Source: IEA World Energy Outlook 2022 Table A.3a Electricity sector

*STEPS (Stated Policies Scenario) – one of three scenarios explored by IEA

derived from IRENA (2022), Renewable Energy Statistics 2022 & IEA World Energy Outlook 2022 Table A.3a Electricity sector

ESG

- > Adopting a low-impact approach to silica sand mining to minimise environmental impact
- > Environmental management at the Cape Flattery Silica project will be comprehensive
- > Key objectives include:
 - minimising the operation’s footprint
 - protecting biodiversity
 - responsible water use
 - rehabilitating disturbed areas after disturbance
- > No chemicals will be used in production
- > Minimal dust will be produced during mining activities
- > Adopting progressive rehabilitation
- > Appropriate buffers, tree protection zones and offsets will be established
- > Additional seeding with preferred species will be undertaken.



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



Traditional Landowner Relationships



- > Early engagement on project planning
- > Agreements signed to allow exploration
- > Representatives already employed on programs
- > Negotiations underway for approval to develop the project
- > Significant recognition by Queensland Government for MLM's relationship with the two clans whose country the project is located



Traditional Landowner Negotiations



> Three groups:

- Hopevale Congress Aboriginal Corporation (Trustee Landowner)
- Walmbaar Aboriginal Corporation (as agent for Dingaal clan – Traditional landowner)
- Nguurruumungu clan – Traditional landowner

> Negotiations have been held in respectful and friendly manner

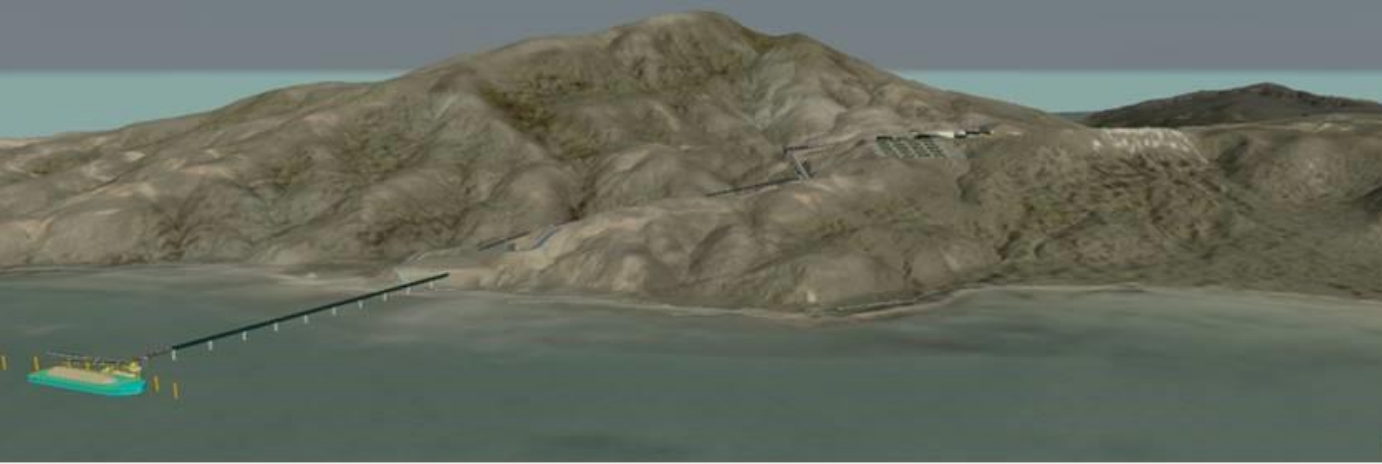
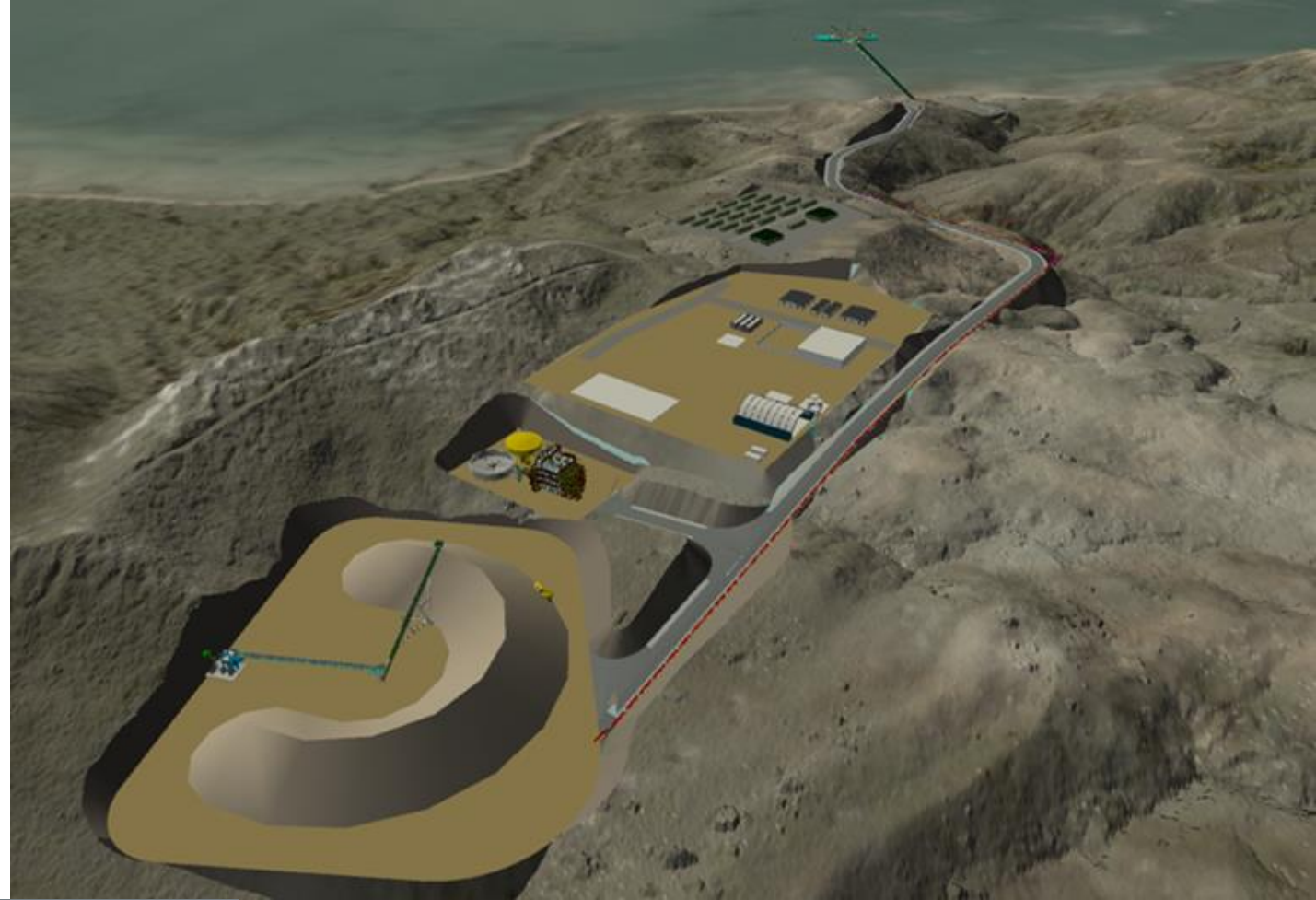
> TLOs planning employment, training, apprenticeships and new business opportunities



Planned project operations

Key site infrastructure includes:

- > Product stockpile
- > Processing plant and pad
- > Conveyor
- > Jetty infrastructure facility
- > Purpose-built accommodation facility.

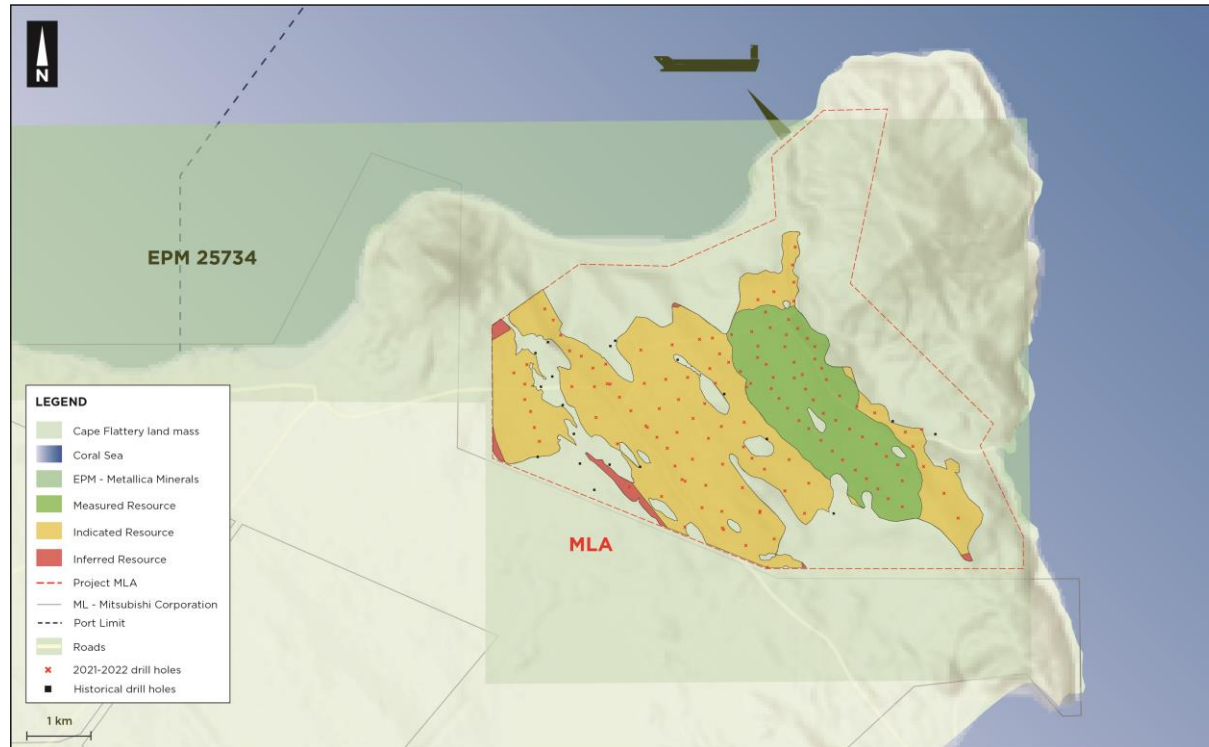


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JORC Resource₁ & Ore Reserve



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



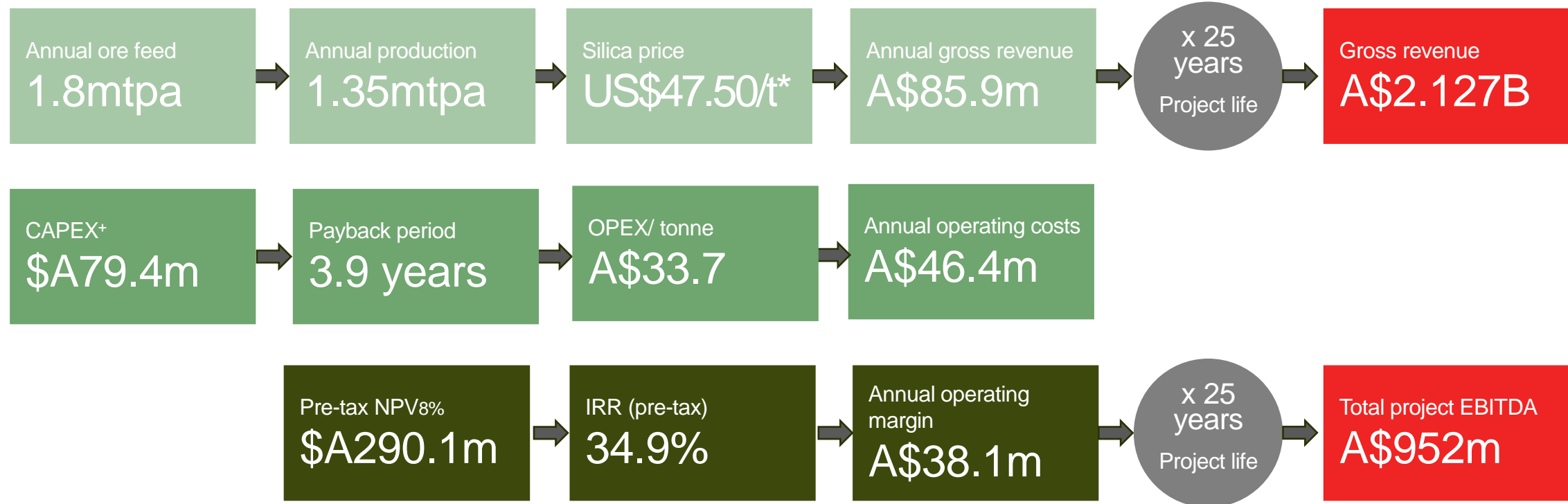
- > High purity silica sand resource of 52.2Mt @ 99.18% SiO₂
- > 144 Drill holes completed
- > In-situ SiO₂ averages 99.2% at an 98.5% cut-off grade

Resource Category	Measured	Indicated	Inferred	Total
Silica Sand (Mt)	16.7	35.2	0.3	52.2
SiO ₂ (%)	99.29	99.15	99.26	99.18
Fe ₂ O ₃ (%)	0.10	0.13	0.14	0.12
TiO ₂ (%)	0.13	0.14	0.12	0.14
LOI (%)	0.17	0.19	0.23	0.18
Al ₂ O ₃ (%)	0.08	0.13	0.16	0.11
Density (t/m ³)	1.6	1.6	1.6	1.6
Silica Sand (Mm ³)	10.40	22.00	0.2	32.60

CFS Project – Distribution of the various Resource categories

See ASX Release 7 April 2022 “Significant Increase in Measured & Indicated Resources at Cape Flattery Silica Project”

Pre-Feasibility Study outcomes₃



* 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)

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

Listing Rule 5.23

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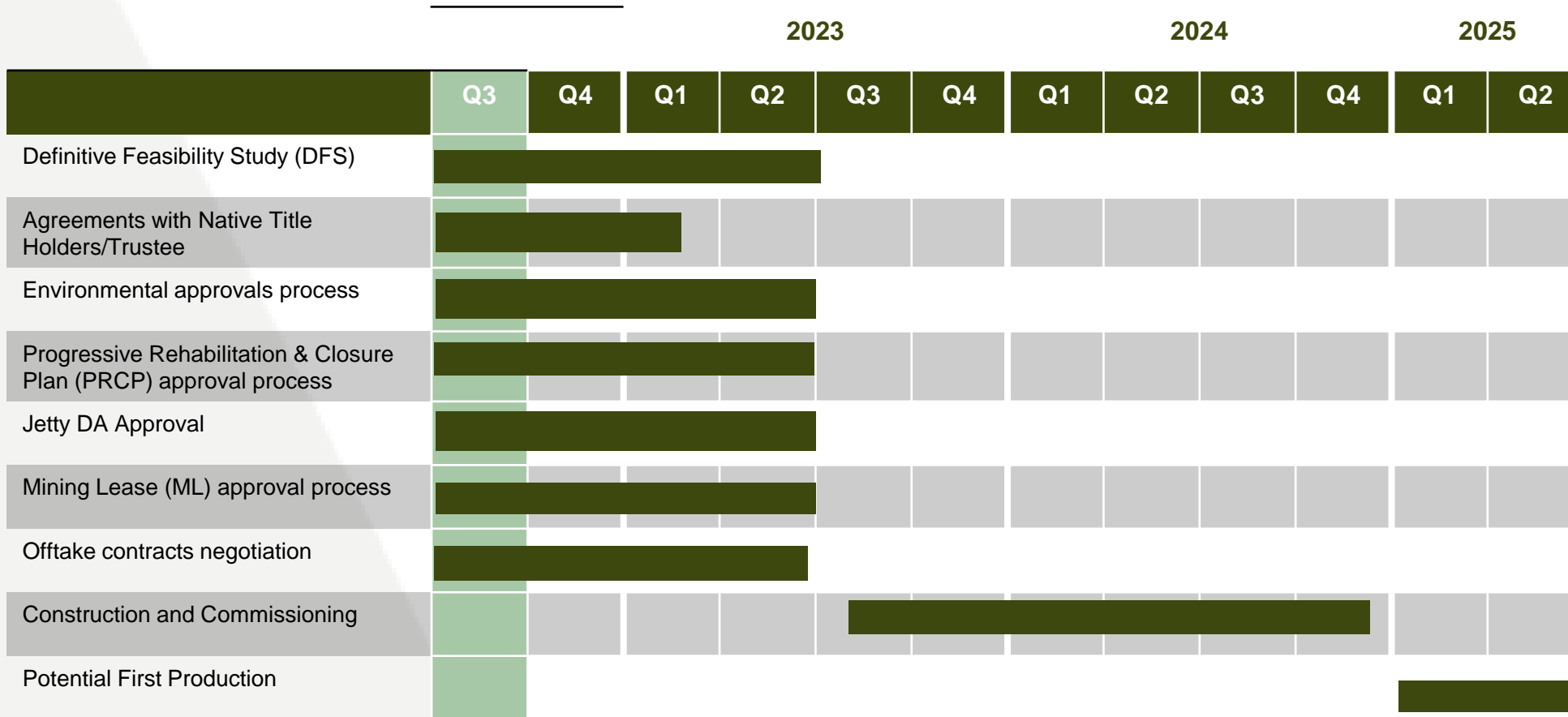
Statements concerning production targets and related financial information are derived from ASX announcement above and ASX Release 10 November 2021 "Cape Flattery Silica Sand Project Production Target"

Cape Flattery Silica West

- > 25 hole hand auger program to a depth of 5m completed in August covering 13.6km² of tenure
- > Assay results for 16 of the 25-hole hand auger program intersected zones of very high purity silica sand grading over 99.0% SiO₂ and with low iron (< 500 ppm Fe₂O₃)
- > Inferred Resource planning underway



Indicative Development Timeframe*



- > *Timing expectations are based on current best estimates and are subject to change depending upon exploration and metallurgical success, government and third party approvals, market conditions and funding availability.
- > Based on granting of Environmental Authority (EA), with no Environmental Impact Statement (EIS) required.

What is going to drive value for MLM?



- > CFS silica sand product is expected to be highly sought after by the strategically located Asian market
- > Silica is a 'critical' mineral and the Asian high quality silica sand market is expected to grow significantly
- > The project has low capex, very positive NPV and the payback period is short
- > ***Recognition that the project has a transport solution that is located within the Port Limit of Cape Flattery.***
- > The proximity of the project to its proposed 100% owned transport solution will minimise opex compared to other nearby projects,
- > Low capex project (A\$79.4m), very positive NPV (A\$290m) and the payback period is short (3.9 years)
- > Recent corporate activity in the Cape Flattery region highlights the growing interest in new projects that will deliver high quality silica sand to the booming Asian markets
- > Completion of key agreements with Traditional Land Owners.
- > Near-term value catalysts include:
 - » Offtake agreement (Q2 CY23)
 - » Environmental & Mining lease approvals (Q2 CY23)*
 - » Definitive Feasibility Study (Q2 CY23)*
 - » First Production (Q1 CY25)*



“I’d put my money on the sun and solar energy. What a source of power! I hope we don’t have to wait until oil and coal run out before we tackle that.” — Thomas Edison, 1931.



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