24 April 2024

Markets Announcement Office
ASX Limited
Exchange Centre
20 Bridge Street
SYDNEY NSW 2000

Release of Target's Statement – REJECT the Diatreme Offer

Metallica Minerals Limited ACN 076 696 092 (ASX: MLM) (**Metallica**) has today lodged with the Australian Securities and Investments Commission and sent to Diatreme Resources Limited ACN 061 267 061 (ASX: DRX) (**Diatreme**), a copy of its target's statement dated 24 April 2024 (**Target's Statement**) in response to the unsolicited, off-market takeover from Diatreme.

In accordance with item 14 of section 633(1) of the *Corporations Act 2001* (Cth) (**Corporations Act**), a copy of the Target's Statement is attached, together with communications provided to Metallica shareholders and option holders (**Shareholder Letter**). In accordance with section 110D of the Corporations Act, despatch of the Target's Statement will occur today by the following means:

1. Metallica shareholders who have nominated an email address to receive communications from Metallica will, unless they have validly elected to receive hard copies of shareholder communications, receive an email sent to their nominated email address, attaching an electronic copy of the Shareholder Letter which provides a link to an electronic copy of the Target's Statement; and
2. Metallica shareholders who have not nominated an email address to receive communications from Metallica, or who have validly elected to receive hard copies of shareholder communications, will receive a hard copy of the Shareholder Letter which will be sent to their registered postal address.

The Target's Statement sets out the reasons the Metallica directors unanimously recommend that Metallica shareholders **REJECT** the Offer which materially undervalues Metallica shares. The Target's Statement also includes an Independent Expert's Report in connection with the Offer which concludes that the Offer is **NOT FAIR and NOT REASONABLE** to Metallica shareholders.

Authorised for ASX release on behalf of the Board of Metallica.

For further information, please contact:

Mr Theo Psaros
Executive Chairman
+61 (7) 3249 3000

Mr Scott Waddell
CFO & Company Secretary
+61 (7) 3249 3000

Access the Target's Statement

24 April 2024

Dear Shareholder

As you will be aware, Diatreme Resources Ltd (Diatreme), is seeking to gain control of Metallica Minerals Limited (Metallica) via an unsolicited, all-scrip takeover offer to acquire all your Metallica shares for 1.3319 Diatreme securities for every one Metallica Share (Offer).

The purpose of this letter is to advise you that Metallica has today released a Target's Statement in response to the Offer, which has been approved by the Metallica Board. The Target's Statement is required by the Corporations Act 2001 (Cth), and importantly includes:

- the Board recommendation to **REJECT** the Offer;
- the reasons for that recommendation, including an Independent Expert's Report (in Annexure B of the Target's Statement) which concluded that the Offer is **NOT FAIR and NOT REASONABLE** to Metallica shareholders and provides the reasons for that conclusion; and
- other important information you should consider when deciding whether to accept or reject the Offer.

The Metallica Directors unanimously recommend you **REJECT** The Offer by **TAKING NO ACTION** and **IGNORING** all documents sent to you by Diatreme.

The Metallica Directors holding Metallica shares intend to **REJECT** the Offer in relation to all Metallica shares they own or control.

A copy of Metallica's Target's Statement has been released to the ASX and is available for shareholders to view at https://www.metallicaminerals.com.au/targetsstatement or by scanning the above QR code. The Metallica board will continue to keep you fully informed of key developments. ASX announcements in relation to the Offer can also be found on the same website or on the ASX Website at www.asx.com.au.

The Metallica Board encourages you to read the Target's Statement in its entirety (including the Independent Expert's Report at Annexure B of the Target's Statement) as it will assist you in making an informed decision with respect to the Offer.

You may also wish to seek independent legal, financial, taxation or other professional advice before making a decision in relation to your Metallica shares.

If you have any queries about the Offer or this Target's Statement Metallica shareholders should contact Metallica by email on admin@metallicaminerals.com.au.

Authorised for ASX release on behalf of the Board of Metallica.

For further information, please contact:

Mr Theo Psaros
Executive Chairman
+61 (7) 3249 3000

Mr Scott Waddell
CFO & Company Secretary
+61 (7) 3249 3000

Target's Statement

ISSUED BY

Metallica Minerals Limited

ACN: 076 696 092

IN RESPONSE TO THE TAKEOVER BID MADE BY DIATREME RESOURCES LIMITED FOR ALL OF THE ORDINARY SHARES IN METALLICA MINERALS LIMITED

The Directors unanimously recommend that Metallica Shareholders

REJECT THE OFFER

by taking **NO ACTION**

as it materially undervalues your Metallica Shares and has been held by the independent expert to be NOT FAIR and NOT REASONABLE

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION AND REQUIRES YOUR IMMEDIATE ATTENTION.

You should read this document in its entirety. If you are in any doubt as to how to deal with this document, you should consult your legal, financial or other professional advisers as soon as possible.

Information about this Target's Statement

This document is a Target's Statement dated 24 April 2024 and is issued by Metallica under Part 6.5 Division 3 of the Corporations Act. This Target's Statement sets out Metallica's formal response to the Offer made by Diatreme under its Bidder's Statement. A copy of this Target's Statement was lodged with ASIC and given to the ASX on 24 April 2024. Neither ASIC, ASX nor any of their respective officers take any responsibility for the content of this Target's Statement.

This Target's Statement does not take into account your investment objectives, financial situation or particular needs. It does not contain personal advice. Your Directors encourage you to seek independent advice before making a decision whether or not to accept the Offer.

FORWARD LOOKING STATEMENTS

Some statements in this Target's Statement are in the nature of forward-looking statements. You should be aware that these statements are predictions only and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to Metallica as well as general economic conditions and conditions in the financial markets, exchange rates, interest rates and the regulatory environment, many of which are outside the control of Metallica and its Directors. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement.

None of Metallica, any of its officers or any person named in this Target's Statement with their consent or anyone involved in the preparation of this Target's Statement makes any representation or warranty (either express or implied) as to the accuracy or likelihood of fulfilment of any forward looking statement or any events or results expressed or implied in any forward looking statement, except to the extent required by law. You are cautioned not to place undue reliance on those statements.

The forward-looking statements in this Target's Statement reflect views held only as at the date of this Target's Statement. Metallica has no obligation to disseminate any updates or revisions to any statements to reflect any change in expectations in relation to those statements or any change in events, conditions or circumstances on which any of those statements are based unless it is required to do so under Division 4 of Part 6.5 of the Corporations Act to update or correct this Target's Statement (i.e. for certain matters that are material from the point of view of a Shareholder) or under its continuous disclosure obligations under the Corporations Act and the ASX Listing Rules.

DISCLAIMER AS TO INFORMATION

The information on the Offer contained in this Target's Statement has been prepared by Metallica using publicly available information (including information contained in the Bidder's Statement) and has not been independently verified by Metallica. Accordingly, subject to the Corporations Act, Metallica does not make any representation or warranty (express or implied) as to the accuracy or completeness of such information.

NO ACCOUNT OF PERSONAL CIRCUMSTANCES

This Target's Statement and the recommendations and other information contained in it do not constitute financial product advice and should not be taken as personal financial or taxation advice, as each Metallica Shareholder's deliberations and decision will depend upon their own financial situation, tax position, investment objectives and particular needs. Your Directors encourage you to seek independent advice before making a decision as to whether or not to accept the Offer.

PRIVACY

Metallica has collected your information from the register of Shareholders for the purpose of providing you with this Target's Statement. The type of information Metallica has collected about you includes your name, contact details and information on details of your shareholding in Metallica. Your information may be disclosed on a confidential basis to Metallica's related bodies corporate and external service providers (such as the share registry of Metallica and print and mail providers) and may be required to be disclosed to regulators such as ASIC and ASX. If you would like to obtain details of the information held about you by Metallica, please contact Link Market Services, whose contact details are set out in the Corporate Directory to this Target's Statement.

DEFINED TERMS

A number of defined terms are used in this Target's Statement. Unless the contrary intention appears, the context requires otherwise, or words are defined in section 3 of this Target's Statement, words and phrases in this Target's Statement have the same meaning and interpretation as in the Corporations Act.

WEBSITE

Metallica maintains a website (https://www.metallicaminerals.com.au/). Information contained in, or otherwise accessible through, this website does not form part of this Target's Statement. All references in this Target's Statement to the Metallica website are inactive textual references and are for your information only.

CURRENCY DISCLOSURES IN THIS TARGET'S STATEMENT

All dollar amounts in this Target's Statement are presented in Australian dollars unless specially denoted otherwise.

SHAREHOLDER INFORMATION

Should Metallica Shareholders have any queries about the Offer or this document, they should contact Metallica by email on admin@metallicaminerals.com.au.

JORC CODE

Certain information in this Target's Statement that relates to the Exploration Results, Mineral Resources or Ore Reserves has been prepared and disclosed under the JORC Code 2012. You should note that while the Company's resource estimates comply with the JORC Code, they may not comply with the relevant guidelines in other countries. You should not assume that quantities reported as *"resources"* will be converted to reserves under the JORC Code or any other reporting regime or that the Company will be able to legally and economically extract them.

Metallica 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. Metallica 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.

CHARTS, DIAGRAMS AND ROUNDING

Any diagrams, charts, maps, graphs and tables appearing in this Target's Statement are illustrative only and may not be drawn to scale. Unless stated otherwise, all data contained in diagrams, charts, maps, graphs and tables is based on information available at the date of this Target's Statement.
A number of amounts, percentages, prices, estimates and other figures in this Target's Statement are subject to the effect of rounding. Accordingly, actual numbers may differ from those set out in this Target's Statement.

FOREIGN JURISDICTIONS

The release, publication or distribution of this Target's Statement in jurisdictions other than Australia may be restricted by law or regulation in such other jurisdictions and persons who come into possession of it should seek advice on and observe any such restrictions. Any failure to comply with such restrictions may constitute a violation of applicable laws or regulations. This Target's Statement has been prepared in accordance with Australian law and the information contained in this Target's Statement may not be the same as that which would have been disclosed if this Target's Statement had been prepared in accordance with the laws and regulations outside Australia.

Table of contents

1 Executive Chairman's letter

24 April 2024

Dear Fellow Shareholders,

Reject Diatreme's offer for your Metallica shares as your board intends to do.

You would have received a Bidder's Statement from Diatreme Resources Limited (**Diatreme**) in relation to its unsolicited conditional offer to acquire all of your shares in Metallica Minerals Limited (**Metallica**) (**Offer**). Diatreme is offering 1.3319 fully paid ordinary shares in Diatreme as consideration for each of your Metallica Shares, valuing Metallica at $24.3 million.[1]

This document is our Target's Statement, which sets out the unanimous recommendation of your Directors to **REJECT** the unsolicited, inadequate and opportunistic Offer.

Your Directors appointed Advisory Partner Connect Pty Ltd to prepare an Independent Expert's Report to provide an independent opinion on the value of Metallica Shares and assess whether the Offer is fair and reasonable to Metallica Shareholders.

The Independent Expert has concluded that the Offer is NOT FAIR AND NOT REASONABLE.

Your Directors believe the Offer materially undervalues your Metallica Shares. If the Offer is successful you will increase your financial exposure to Diatreme's inherently uncertain project, and reduce your financial exposure to Metallica's inherently more certain project.

REASONS WHY YOU SHOULD **REJECT** THE OFFER

Your Metallica Directors recommend that you join us in **REJECTING** the Offer because:

1. **The Independent Expert has concluded that the Offer is NOT FAIR AND NOT REASONABLE:**

   The Independent Expert has concluded that the Offer of 1.3319 fully paid ordinary shares in Diatreme for each of your Metallica Shares is **NOT FAIR AND NOT REASONABLE** and is below the Independent Expert's estimated fair value of Metallica of **22.3 cents to 27.8 cents** per Metallica Share.

   Metallica Shareholders should review the Independent Expert's Report in Annexure 2.

2. **Metallica Shareholders do not receive their 'fair share' of the Merged Group**

   The Independent Expert has estimated Metallica's fair value is between $164.3 million and $205.1 million (on a minority basis) whereas the fair value of the Merged Group is between $305.4 million to $382.7 million (on a minority basis). Accordingly, while Metallica's contribution to the value of the Merged Group is 53.7%, the Offer (if successful) would result in Metallica Shareholders only receiving 25.5% of the Merged Group.

   Metallica Shareholders are not receiving their fair share of the Merged Group. Therefore, even if Diatreme does progress Metallica's existing projects, Metallica Shareholders will have minimal exposure to any such upside.

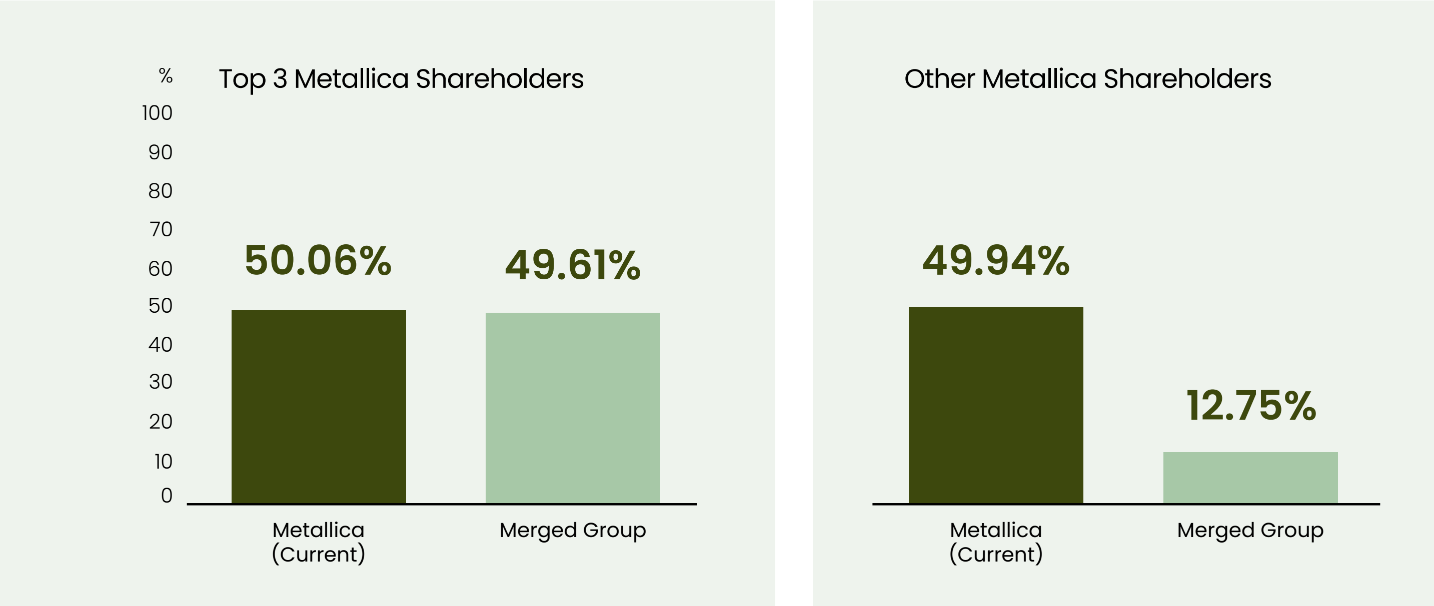
   Metallica's three largest shareholders are also substantial shareholders of Diatreme and suffer almost no dilution as a result of the offer (collectively holding 50.06% in Metallica and 49.61% in the Merged Group), compared to Metallica's other shareholders, who hold 49.94% in Metallica and will only hold 12.75% of the Merged Group.[2] Accordingly, Diatreme's suggestion that Sibelco's support of the Offer is a reason for other Metallica Shareholders to accept the Offer ought not factor into your decision.[3]

1 Based on the closing price of Diatreme shares on 22 April 2024 being $0.019 shortly before release of this Target's Statement.

2 See section 5 for more information on the cross-ownership conflicts of interest of the three largest shareholders of Metallica.

3 See Bidder's Statement - Chairman's Letter (page 9).

Figure 1: Dilutionary impact of Offer on top 3 Metallica Shareholders vs other Metallica Shareholders



3. **You should carefully consider the value of Diatreme Shares as consideration given the inherent project risks:**
   - Diatreme's Northern Silica Project is at an early and conceptual scoping study stage which is inherently higher risk and requires further work to demonstrate that it is 'economic'.
   - Diatreme's Northern Silica Project faces significant challenges securing an export solution using existing infrastructure. Diatreme's public disclosure does not fully articulate the complexity and likely extended timeline of attempting access to existing infrastructure. This process has no certainty of delivering a positive outcome.
   - Diatreme's public disclosure does not articulate the complexity of building and operating its own export infrastructure, including the necessary interaction with the adjacent operator and the effect of the marine environment on the southern side of Cape Flattery.
   - The Independent Expert's Report identifies that the Diatreme Scoping Study materially underestimates the capital expenditure required to construct and operate marine export infrastructure.[4]
   - Diatreme's Northern Silica Project has no Ore Reserves and only Mineral Resources with a lower level of confidence that they can be exploited in an economic manner.
   - There are a number of environmental considerations that have the potential to impact the value and delivery of the Northern Silica Project.
4. **If you accept the Offer, you may be unable to accept a superior proposal should one be made:**

   Your Directors are taking steps to identify and progress potential alternative transactions, which might result in a superior proposal. While there is no guarantee an alternative transaction will arise, acceptance of the Offer might result in Metallica Shareholders being unable to benefit from any superior proposal (should one be made).
5. **Based on the recent closing price of 1.90 cents per Diatreme Share, the Offer implies a value of 2.53 cents per Metallica Share, compared to a valuation by the Independent Expert of 22.3 cents to 27.8 cents:**

   Based on the Independent Expert's Valuation the Offer contains no premium for control.
6. **The Offer is conditional and may not actually complete:**

   As the Offer is currently conditional, there is no guarantee that you will receive the Offer Consideration if you accept the Offer. The Offer is subject to an extensive list of individual Conditions and triggering any of the Conditions may cause the Offer to lapse. There is no certainty the Offer will proceed. If you accept the Offer whilst it remains subject to Conditions, you may lose control of your Metallica Shares (subject to limited rights to revoke or withdraw your acceptance) and be unable to trade your Metallica Shares for the duration of the Offer Period. Metallica Shareholders that accept the Offer may not benefit if any superior proposal from a third party emerges.

4 Refer to section 8 of the Independent Expert's Report.

7. **There may be adverse tax consequences associated with the Offer:**

   Capital gains tax (CGT) rollover relief is only available to Metallica Shareholders if Diatreme becomes the owner of at least 80% of all Metallica Shares. The Offer is subject to a 50.1% minimum acceptance condition. Accordingly, if you realise a capital gain on the sale of your Metallica Shares under the Offer, you may need to pay capital gains tax.

In light of the above, your Directors are unanimous in their view that the Offer does not appropriately value the quality and future potential of Metallica's assets.

Your Directors will continue to work tirelessly over the coming weeks to identify and execute opportunities to maximise the value received for Metallica's assets. We will keep Metallica Shareholders appraised of any material developments.

Each of the Directors (all of whom hold Metallica Shares) intend to **REJECT** the Offer in respect of their own holding of Metallica Shares.

To REJECT the Offer, simply ignore all communications from Diatreme and do nothing.

I encourage you to read this Target's Statement carefully. If you are in any doubt about how to deal with this document, please contact your broker, financial or legal adviser who is able to take account of your individual circumstances. Should you have any queries about the Offer or this Target's Statement, you can contact Metallica by email on admin@metallicaminerals.com.au.

Yours sincerely,

Theo Psaros
Executive Chairman
Metallica Minerals Limited

Key dates

Diatreme announcement of intention to make takeover bid	**16 February 2024**
Diatreme announcement of revised Conditions	**27 February 2024**
Bidder's Statement lodged with ASIC and ASX	**28 March 2024**
Register date	**7.00pm (Sydney time) on 2 April 2024**
Date of Offer	**11 April 2024**
Date of this Target's Statement	**24 April 2024**
Date for notice on status of Conditions[5]	**17 May 2024**
The earliest that the Diatreme Offer Period can close (which is subject to extension)	**7.00 pm (Sydney time) on 27 May 2024**

5 17 May 2024 is referenced in the Bidder's Statement as the date by which Diatreme must give notice of the status of the Conditions (see the timetable on page 6 of the Bidder's Statement and section 12.2.1 on page 73 of the Bidder's Statement, as well as the announcement of 11 April 2024), however, section 6.7 of the Bidder's Statement (on page 96) refers to that date being '*seven days before the end of the Offer Period*'. Other than in limited circumstances (e.g. another person makes a takeover bid for Metallica), the Offer can only be extended before this notice is given.

2 Directors' Recommendation (and reasons)

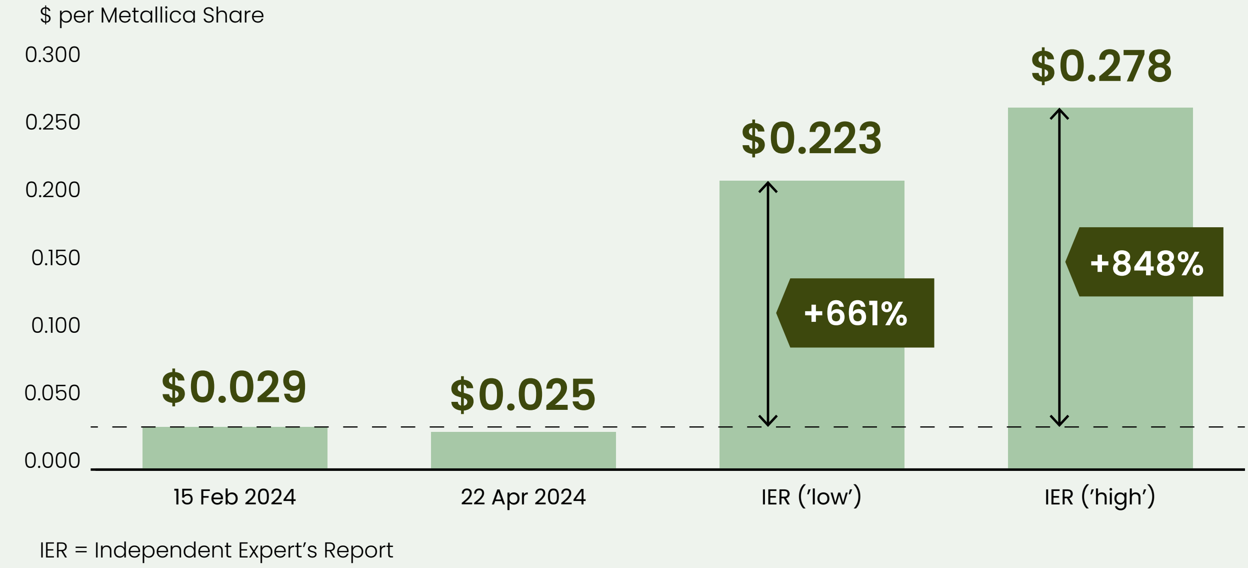
Your Directors unanimously recommend that Shareholders REJECT the Offer.
The key reasons to REJECT the Offer are:

2.1 The Independent Expert has concluded that the Offer is NOT FAIR and NOT REASONABLE

The key conclusions from the Independent Expert are that:

- The fair value of Metallica Shares on a control basis is between 22.3 cents per Share (at a 'low value') and 27.8 cents per Share (at a 'high value'), which corresponds to market capitalisations for Metallica of $214 million and $267 million, respectively. The Offer only values Metallica at approximately $24.3 million.[6]

Figure 2: Offer Consideration vs Independent Expert's value[7]



- The deemed fair value of the Merged Group on a minority basis is between 6.1 cents per Share (at a 'low value') and 7.6 cents per Share (at a 'high value'), which represents significant discounts of 73% and 72%, respectively, to the deemed fair value of Metallica Shares on a control basis.
- The Independent Expert's Report states that the capital expenditure estimated in the Diatreme Scoping Study is materially underestimated. The Independent Expert's Report also highlights the operational challenges of developing new infrastructure whilst ensuring minimal impact on Mitsubishi export operations. The Independent Expert's Report suggests construction of Diatreme's port infrastructure will cause unavoidable disturbances to Mitsubishi's operations.
- There are a number of disadvantages for Metallica Shareholders who accept the Offer (and receive Diatreme Shares), including minority ownership of the Merged Group and exposure to the risks associated with the Northern Silica Project, which is only at a scoping study stage.

The Independent Expert's Report can be viewed in full in Annexure 2.

6 Based on the closing price of Diatreme shares on 22 April 2024 being $0.019 shortly before release of this Target's Statement.

7 The Diatreme share price on 15 February 2024, being the closing price on the trading day before Diatreme announced an intention to make the takeover bid, was $0.022 (closing), meaning that the Offer Consideration was at that time valued at $0.029 per Metallica Share. The Diatreme share price on 22 April 2024 shortly before release of this Target's Statement was $0.019 (closing), meaning that the Offer Consideration was at that time valued at $0.025 per Metallica Share. The bars labelled IER 'low' and IER 'high' are the Independent Expert's assessment of the fair value of Metallica Shares on a controlling basis (see page 3 of the Independent Expert's Report). Trading data for this chart was sourced from MORNINGSTAR.

2.2 Metallica Shareholders do not receive their 'fair share' of the Merged Group

The Independent Expert has estimated Metallica's fair value as between $164.3 million and $205.1 million (on a minority basis) whereas the fair value of the Merged Group is between $305.4 million to $382.7 million (on a minority basis). Accordingly, while Metallica's contribution to the value of the Merged Group is 53.7%, the Offer (if successful) would result in Metallica only receiving 25.53% of the Merged Group.

Figure 3: Ownership of the Merged Group if the Offer is successful[8#]

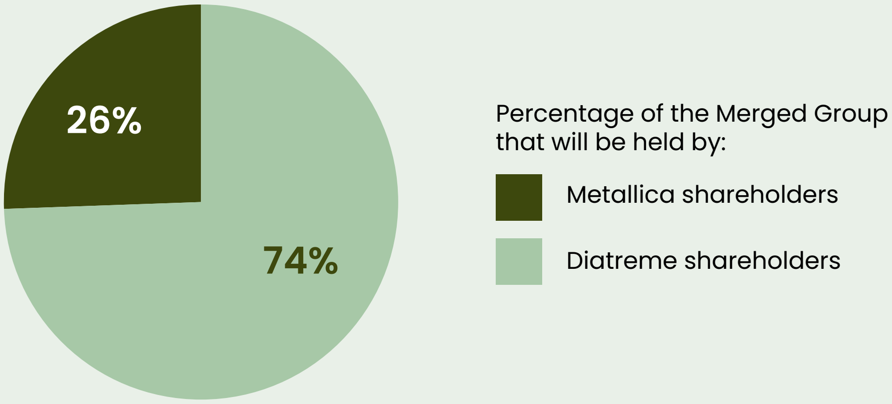
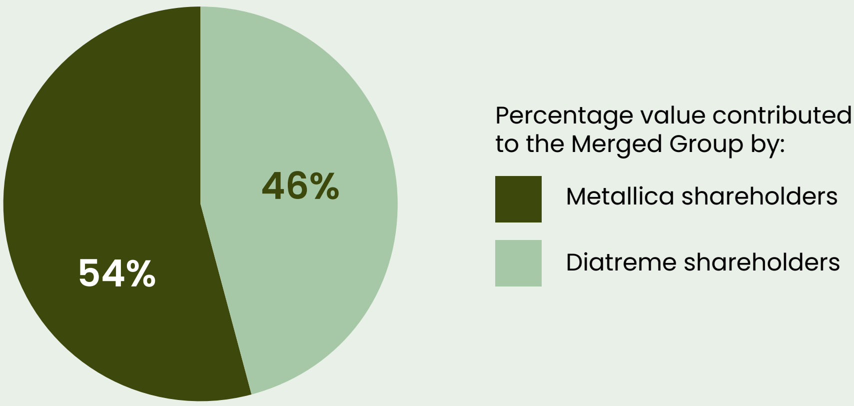


Figure 4: Independent Expert's assessment of Metallica's contribution to the value of the Merged Group[9#]



Ownership percentages have been rounded up to the nearest whole number. This assumes Diatreme acquires 100% of Metallica. This does not take into consideration rounding for fractional entitlements under the Offer.

If the Offer is successful and Diatreme acquires 100% of Metallica, Metallica Shareholders will own a mere 25.53% of the Merged Group, with 5,008,281,797 shares on issue. As a result, your individual exposure to Metallica's assets (in particular the well-advanced flagship CFS Project) that you have funded will be highly diluted, and you will therefore have limited exposure to any upside of Metallica's projects.

8 Figure 3 shows the ownership of Metallica Shareholders on the basis that Diatreme acquires 100% of Metallica under the Offer.

9 Figure 4 is derived based on the valuation contribution of Metallica, calculated as the midpoint of the Independent Expert's valuation of Metallica on a minority basis (i.e. $184,740,000) to the value of the Merged Group (which is the sum of the midpoint valuations of Metallica and Diatreme on a minority basis) – see section 9 of the Independent Expert's Report.

Metallica's top 3 shareholders, who hold in aggregate 50.1% of the Metallica Shares on issue, are also substantial shareholders in Diatreme (holding 49.5% of the Diatreme Shares on issue). The cross-ownership of these shareholders will, logically, mean those shareholders will consider their existing ownership of Diatreme as part of any decision in respect of the Offer, therefore, those shareholders are not aligned with the other Metallica Shareholders.

Figure 5: Current Metallica Shareholders[10]

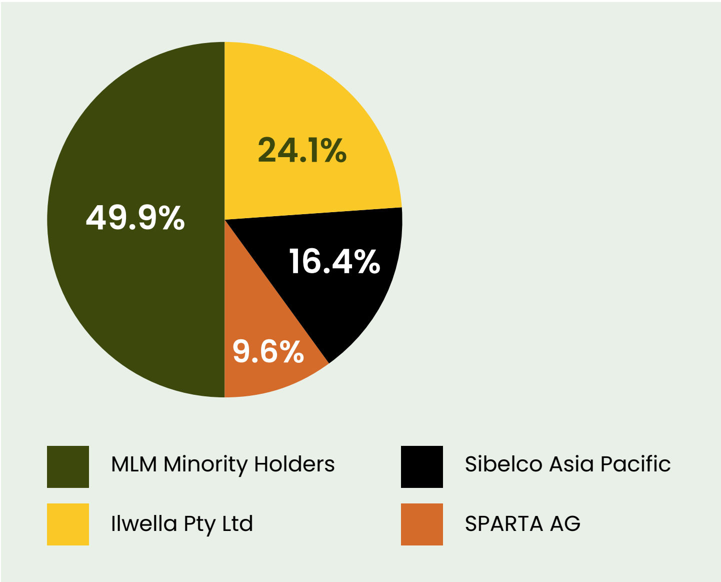


Figure 6: Current Diatreme shareholders[11]

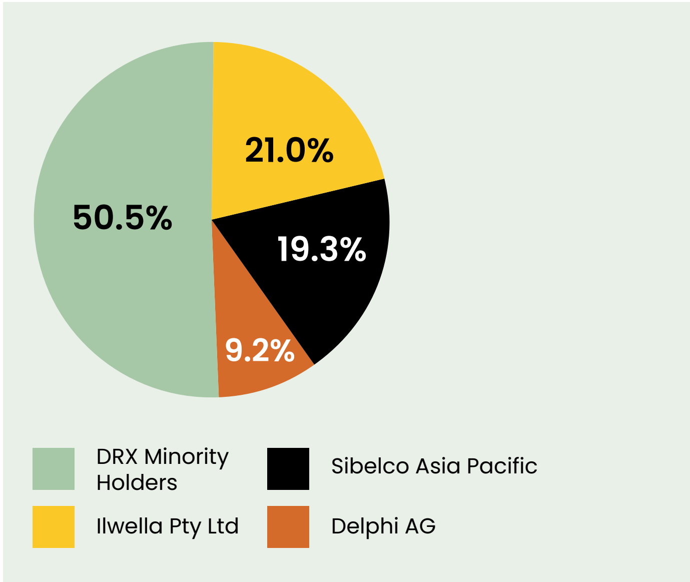


Figure 7: Merged Group shareholders[12]

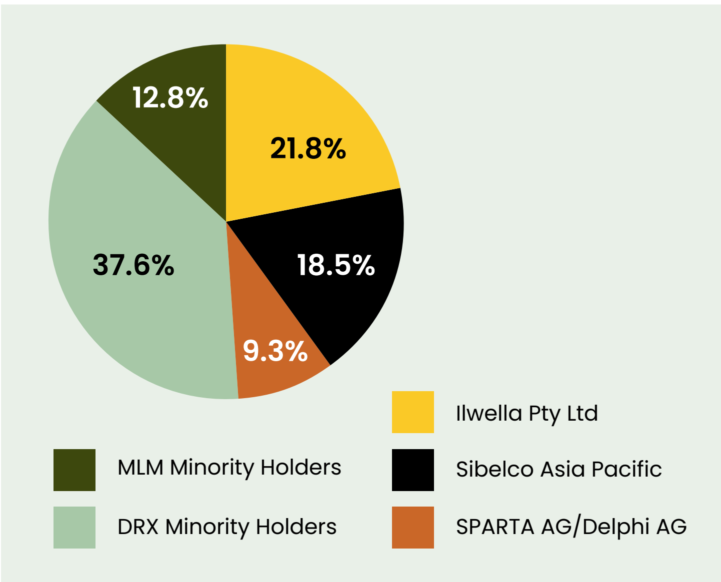
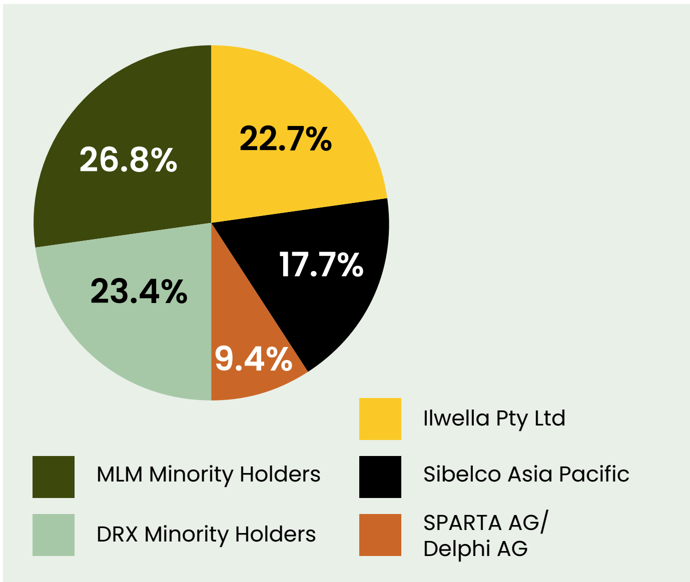


Figure 8: Merged Group shareholders based on Independent Expert's assessment of the fair value of Metallica and Diatreme



For more information on the interests of the Conflicted Shareholders, and how your Directors intend to manage the conflict of interest, refer to section 5.

10 All underlying information contained in Figure 5 is from section 6.4 on page 48 of the Bidder's Statement.

11 All underlying information contained in Figure 6 is from section 4.4 on page 40 of the Bidder's Statement.

12 All underlying information contained in Figure 7 is from section 4.4 on page 40 of the Bidder's Statement, section 6.4 on page 48 of the Bidder's Statement and section 7.2.5 on page 52 of the Bidder's Statement. See section 5 of the Target's Statement for an overview of the relationship between Sparta AG and Delphi AG. This assumes that none of the options in either Diatreme or Metallica are exercised.

2.3 You should carefully consider the value of Diatreme Shares as consideration given the inherent project risks

See section 3 of this Target's Statement, which sets out further information about your Directors concerns regarding Diatreme's flagship Northern Silica Project. Many of these concerns are sufficiently material that they likely affect the value of shares in Diatreme and, therefore, need to be understood by Metallica Shareholders.

2.4 If you accept the Offer, you may be unable to accept a superior proposal should one be made

If you accept the Offer, you may not be able to obtain the benefit of any subsequent superior proposal (whether that be for Metallica or one of its projects) by another party, should one emerge during the Offer Period, unless in limited circumstances you are eligible to revoke or withdraw your acceptance or the Offer lapses. Your Directors are taking steps to identify and progress potential alternative transactions, which might result in a superior proposal. While there is no guarantee an alternative transaction will arise, acceptance of the Offer might result in Metallica Shareholders being unable to benefit from any superior proposal (should one be made).

2.5 Based on the recent closing price of 1.90 cents per Diatreme Share, the Offer implies a value of 2.53 cents per Metallica Share, compared to a valuation by the Independent Expert of 22.3 cents to 27.8 cents

Based on the Independent Expert's Valuation, the Offer contains no premium for control, merges Metallica with a company whose flagship project is only at scoping study stage and does not materially affect the largest shareholders of each entity, yet Diatreme intends to exert control over both the management and board of the Merged Group if the Offer is successful.[13]

2.6 The Offer is conditional and may not actually complete

The Offer is conditional on many events, including obtaining a minimum 50.1% acceptance level. Accordingly, there is no certainty that the Offer will complete.

If you accept the Offer, you will generally be unable to accept any subsequent offer which may arise if you change your mind, even if the subsequent offer is at a higher price. The consequences of accepting the Offer are discussed in section 9.6 of this Target's Statement.

Furthermore:

- any sale of Metallica Shares on the ASX will provide a certain outcome for the Metallica Shareholders seeking to dispose of their Metallica Shares. Whilst the Offer remains conditional, there can be no certainty that acceptance of the Offer will result in the completion of a sale of the relevant Metallica Shares; and
- any Metallica Shareholder who accepts the Offer will be precluded from trading their Metallica Shares on the ASX and will only receive consideration for their Metallica Shares (in the form of Diatreme shares) once the Offer becomes unconditional. Section 5.1 of the Bidder's Statement contains further details on when you will be sent your Offer Consideration.

2.7 There may be adverse tax consequences associated with the Offer

Capital gains tax (CGT) rollover relief is only available to Metallica Shareholders if Diatreme becomes the owner of at least 80% of all Metallica Shares. The Offer is subject to a 50.1% minimum acceptance condition. Accordingly, any Metallica Shareholder who makes a capital gain on disposal of Metallica Shares may not be entitled to rollover relief if Diatreme does not acquire at least 80% of all Metallica Shares under the Offer.

13 As per section 8.2.3 on page 58 of the Bidder's Statement, it is Diatreme's intention to replace all Metallica Directors and it is uncertain which (if any) of Metallica's current Management team will be retained.

3 You should carefully consider the value of Diatreme Shares as consideration given the inherent project risks

The Offer Consideration is comprised of fully paid ordinary shares in Diatreme. Accordingly, the long-term value of the Offer Consideration is dependent on the future trading price of the Merged Group. This creates uncertainty for Metallica Shareholders.

3.1 Diatreme's Northern Silica Project is at an early and conceptual scoping study stage which is inherently higher risk and requires further work to demonstrate that it is 'economic'

Diatreme relies on a 'scoping study' completed on 14 June 2023 as the basis for development of Northern Silica Project (**Diatreme Scoping Study**). A scoping study is at the lowest level of confidence in the project maturity matrix, typically used for concept screening or conceptual planning. Being at the earliest stage of project maturity, the Diatreme Scoping Study has a number of deficiencies and is higher risk, when compared to the DFS completed by Metallica for the CFS Project.

By way of example, the Bidder's Statement states that Diatreme has relied upon 'bench top' metallurgical testing to make the claim that it meets *"the requirements for high-end glass and solar panel glass manufacturing"*.[14] Benchtop studies are not as conclusive as the bulk test work that Metallica has completed on the CFS Project. There is no certainty that bulk test work on the Northern Silica Project sand will produce the same result as 'bench top' testing. There are similar shortcomings in respect of the level of geological knowledge of the Northern Silica Project (see section 3.5) and the likely accuracy of capital expenditure estimates for the Diatreme Scoping Study (see section 3.4).

3.2 Diatreme's Northern Silica Project faces significant challenges securing an export solution using existing infrastructure. Diatreme's public disclosure does not articulate the complexity and likely extended timeline of attempting to obtain access to existing infrastructure

Your Directors have concerns about the viability of the marine solution for exports in the Diatreme Scoping Study.

The Diatreme Scoping Study says (of Diatreme's export solution) that it *"has designed a port access strategy that will provide certainty to facilitate its exports"*.[15] Diatreme also says it: *"has used an underpinning commercial rationale and development strategy, which is self-reliance and independence from the incumbent port operator Cape Flattery Silica Mines (CFSM – wholly owned by Mitsubishi) and assumes no access to their export outloading stream"* (a statement that is repeated in subsequent ASX announcements).[16]

Furthermore, Diatreme has stated in the Bidder's Statement that the partial user agreement *"…does not require negotiation with CFSM"* other than the scheduling of vessels at berth once production and shipping commences.[17]

14 See page 16 of the Bidder's Statement, as amended by the second supplementary bidder's statement dated 17 April 2024.

15 Page 6 of Diatreme's Scoping Study announcement dated 14 June 2023.

16 Page 6 of Diatreme's Scoping Study announcement dated 14 June 2023; see also see Diatreme ASX Release titled "Diatreme advances EIS and port planning for NSP" dated 21 March 2024.

17 See section 3.3.2 on page 26 of the Bidder's Statement.

Mitsubishi has considerable protections for its right of use of the existing Cape Flattery marine infrastructure, which it constructed, under the State Government Sublease. In order for the Phase 1 export of 3Mtpa via transhipping to be successful as planned Diatreme must, amongst other things, reach an agreement with Mitsubishi to pay reasonable commercial consideration including a proportionate contribution to the cost of repair and maintenance of the facility. This is in addition to conceding priority rights to Mitsubishi for use of the facility.[18]

The practical implication of the latter point is that **unless Mitsubishi agrees**, Diatreme may be required to move part loaded vessels off the wharf to allow recently arrived Mitsubishi vessels to berth and complete loading, before the Diatreme vessel can return and complete loading. Mitsubishi cannot be compelled to cooperate on vessel scheduling to avoid these clashes, so any such risk is ultimately borne by Diatreme. Further, as identified in the PAEMAC Report (refer Appendix D of the Independent Expert's Report), there is uncertainty over the capacity of the existing mooring dolphins to accommodate simultaneous mooring of ocean-going vessels and a transhipment barge, when those mooring dolphins were designed to allow loading of vessels by a conventional ship-loader only.[19]

Your Directors have concerns that this option is neither independent (from Mitsubishi, as the incumbent port operator) nor certain and requires successful negotiations with Mitsubishi on issues in addition to the scheduling of vessels at berth, well in advance of the commencement of production in order to successfully execute Phase 1 of Diatreme's proposed export solution.

3.3 Diatreme's public disclosure does not articulate the complexity of building and operating its own export infrastructure, including the necessary interaction with the adjacent operator and the effect of the marine environment on the Southern side of Cape Flattery

Diatreme's proposed Phase 2 solution of a wharf extension, to allow the export of 5Mtpa, also has commercial dependencies on the incumbent port operator (Mitsubishi). In particular, under the State Government Sublease, Mitsubishi must not be prevented from achieving its 'reserve throughput capacity', nor is Mitsubishi obliged to co-operate with Ports North or Diatreme if to do so would unduly or unnecessarily interfere with Mitsubishi's use of the wharf.[20] Interaction issues with the existing Cape Flattery infrastructure will be unavoidable.[21] Construction activities will interfere with Diatreme's own transhipping operation as the transhipment vessel must avoid the construction area, as must any incoming or outgoing ocean-going vessel.[22]

According to its Coordinated Project Application Initial Advice Statement, Diatreme will pursue environmental assessment for three maritime infrastructure options, which will no doubt come at additional cost and complexity, and demonstrates a lack of certainty.

Ultimately, these hurdles may be overcome by Diatreme, however, Diatreme's disclosure does not articulate these issues. At the very least, to say the Phase 2 export solution is independent of Mitsubishi is, in your Metallica Directors' opinion, inaccurate.

18 See section 8.5 of the Independent Expert's Report for further details as to the contents of the State Government Sublease.

19 PAEMAC Report, page 34.

20 See section 8.5 of the Independent Expert's Report for further details as to the contents of the State Government Sublease.

21 PAEMAC Report, pages 34 to 36.

22 PAEMAC Report, page 34.

WEATHER CONDITIONS

Metallica's transhipping solution to export product to market sits on the leeward side of Cape Flattery in appropriate ocean conditions (i.e. situated on or towards the side sheltered from the wind). Diatreme's transhipping location is windward (i.e. facing the wind or situated on the side facing the wind).

The prominent wind directions at Cape Flattery are south east and south, south east. Although winds switch to a more easterly direction in the wet season (December to April), they remain predominantly from a southerly direction. During the dry season (May to October), winds tend to be more southerly, and it is during this period that winds are most intense. Locally generated wind waves are dominant in this area, with wave direction being strongly correlated with the wind conditions.

Diatreme's Phase 1 solution is exposed to the prevailing weather conditions. The transhipping barges and the roll-on/roll-off vessel will be exposed to the prevailing weather conditions during loading and unloading.[23] This may result in lost days of operations, in the absence of an outer breakwater, overtopping protection or revetement structure. These issues do not appear to have been expressly recognised in the Diatreme Scoping Study nor the Bidder's Statement.

LIMITATIONS ON VESSEL SIZE

The Port Handbook states the existing wharf at Cape Flattery is limited to receiving 80,000 deadweight tonnage vessels at an overall length of 195 metres. The Diatreme Scoping Study states Diatreme will load 55,000 tonne vessels either anchored at the existing wharf, or on the wharf extension.

Metallica's proposed transhipment solution has no vessel size limitations imposed on it by port infrastructure. Metallica's proposed transhipping zone has water depths in excess of 20 metres, which, subject to approvals, allows Metallica to load cape size vessels. Cape size vessels are typically sized between 100,000 and 200,000 tonnes. Vessel size has a significant impact on freight rates and hence project economics.

A freight comparison based on forward market rates is made below in table 1 as an example. In 2023, China accounted for approximately 65% of the seaborne high-purity silica sand market. With an estimated average US$5.57/tonne differential in freight costs between the different vessel sizes, there is a significant financial benefit for Metallica by using cape size vessels at the CFS Project when compared to Diatreme's inability to use cape size vessels at its proposed marine solution. Assuming (conservatively) that US$4.50/tonne of the US$5.57/tonne differential represents an increase in Metallica's revenue and 50% of material is shipped in cape size over the life of the CFS Project, this would equate to an additional US$81.2 million (AU$112.8 million)[24] in revenue over the life of the CFS Project. This has not been factored into the DFS, and this value would not be realised under Diatreme's preferred export solution.

Table 1: Example freight rate differentials

VESSEL SIZE	170,000 TONNES +/-10% CARGO SIZE	55,000 TONNES +/-10% CARGO SIZE
2025	$12.60	$18.42
2026	$12.55	$17.88
Average	**$12.58**	**$18.15**

Table 1: $US/tonne freight rates for different vessel sizes Cape Flattery/Ningbo + Nantong 1:2, China
Source: Director estimate based advice from an industry expert

23 PAEMAC Report, page 15.

24 Based on USD/AUD exchange rate of 0.72 used in the DFS.

3.4 The Independent Expert's Report identifies that the Diatreme Scoping Study materially underestimated the capital expenditure required to construct and operate marine export infrastructure

Based on the PAEMAC Report, Diatreme has underestimated the capital cost of its marine solution in the Diatreme Scoping Study. The PAEMAC Report findings are compared in table 2 below against the estimates from the Diatreme Scoping Study.[25] The PAEMAC Report demonstrates that Diatreme has significantly underestimated the cost of marine works that will need to be undertaken to achieve the outcome in the Diatreme Scoping Study. The analysis in the PAEMAC Report raises questions as to the true value of the Northern Silica Project when the required capital costs are recognised.

Table 2: Capital costs – PAEMAC Report vs Diatreme Scoping Study

ITEM	DRX* ($M)	PAEMAC ($M)	DELTA ($M)	% CHANGE
PHASE 1 – RAMP + TRANSHIPMENT	78.3	160.3	82.0	105%
PHASE 2 – WHARF EXTENSION	97.6	236.2	138.6	142%
TOTAL – PHASE 1 + 2	**175.9**	**396.5**	**220.6**	**125%**

* The Diatreme Scoping Study uses the terminology "Offsite Infrastructure".

By comparison, the capital cost estimate by Metallica for the CFS Project has been developed in line with far more stringent parameters.[26] In particular, the estimate has been compiled from the multiple sub-estimates that formed the basis of the final estimate. The engineering to support the CFS Project's capital expenditure estimate has been developed by internal and external sources. The preparation of each of the estimates was based on a scope of work with battery limits as defined by the scope stakeholders. The material take-offs and bill of materials were then quoted/priced by each of the suppliers or contractors to produce each sub-estimate.

3.5 Diatreme's Northern Silica Project has no Ore Reserves and only Mineral Resources with a lower level of confidence that they can be exploited in an economic manner

The Bidder's Statement outlines the Mineral Resources for the CFS Project (Metallica) and the Northern Silica Project and the Galalar Silica Sand Project (**GSSP**) (Diatreme).[27] This table fails to disclose that the CFS Project has Ore Reserves (classified as 'Probable') of 47Mt. Diatreme's Northern Silica Project does not have an Ore Reserve.[28] An Ore Reserve is the economically mineable part of a Mineral Resource.

Diatreme's Northern Silica Project Mineral Resource is a combination of Inferred, Indicated and Measured resource. These classifications have a lower level of confidence than a Probable Ore Reserve, attained by Metallica. By JORC Code definition, Diatreme is yet to have '*sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit*' to meet Ore Reserves classification. In accordance with the JORC Code, Diatreme is yet to have identified the economically mineable part of its Mineral Resource by way of relevant studies (e.g. feasibility level study) which demonstrate that extraction could reasonably be justified.

Furthermore, the Independent Expert concluded that it was not appropriate to include the value of certain assets of Diatreme, including GSSP, in the valuation of Diatreme, on the basis that GSSP requires a slurry pipeline to traverse 30km, crossing rivers and subject to various regulatory approvals. Moreover, in July 2023, Diatreme formally withdrew its application to prepare an EIS for GSSP.

25 Metallica assumes the costs of the marine infrastructure for the Northern Silica Project is in Table 0-5 of the Diatreme Scoping Study.

26 The requirements of the Association for the Advancement of Cost Engineering International (**AACEi**) Class 3 estimate in accordance with AACEi 47R—11 with an accuracy of -10% to +15%.

27 See Bidder's Statement page 15.

28 Diatreme has an Ore Reserve of 32.5Mt in respect of GSSP, on a 100% owned basis.

3.6 There are a number of environmental considerations that have potential to impact the value and delivery of the Northern Silica Project

There are a number of environmental considerations that have the potential to impact the delivery of the Northern Silica Project. These include:

- the MSES (matters of state environmental significance) map (figure 4.6) on page 62 of the Northern Silica Project IAS, indicates that there are several HES (high ecological significance) wetlands within the project area, which in aggregate equate to over 900,000m^2 (90 hectares) of disturbance, that will be impacted by the Northern Silica Project, including areas that run through the mining areas, imposing significant constraints on future mining operations;
- a 'buffer zone' around the HES will be required and it is not clear whether this was considered during the Diatreme Scoping Study. This is inconsistent with wetland State Development Assessment Provisions and is likely to have an impact on the Northern Silica Project's operations. This is particularly important as significant tracts of resource encroach on the relevant wetland areas and is therefore subject to the risk of being sterilised. If this were to materialise into a reduction in resource tonnage, it would likely impact the NPV of the Northern Silica Project;
- the Diatreme Scoping Study does not adequately address the potential impacts that the all-weather road infrastructure may have on the HES wetlands and terrestrial ecologies. With the potential to alter the flow of waters in the dune lake system, it appears that Diatreme has assumed this infrastructure is to be merely guided by the EIS, without due consideration of how critical it is to the Northern Silica Project. Based on the need to avoid or mitigate impact in this environment, there is the potential for the cost of such infrastructure to vary significantly. If this infrastructure cannot be built due to engineering or environmental difficulties, the cost of transporting personnel and materials to the Northern Silica Project could escalate significantly;
- large areas of the foredune will be exposed once cleared of vegetation to make way for the Northern Silica Project's stockpile and the associated conveyor infrastructure. There is also a propensity for structures to impact the natural morphology of the dune due to rain shedding and wind re-direction of the sand. Morphology of the dunes will be forever altered, impacting habitats that fauna utilise in this local area;
- the stockpiles and conveyor alignment are parallel with the beach which creates a flood risk during every wet season. This is evident by creeks and historical direction of water flow. This alignment also has a high potential to disrupt the geomorphology of the foredune through the introduction of hard structures that interfere with natural processes;
- the Diatreme Scoping Study does not provide details on the potential impacts the project may cause to mapped waterways under the *Fisheries Act 1994* (Qld), nor has it addressed or identified watercourses under the *Water Act 2000* (Qld);
- Diatreme claims that *"no diversion of surface water"* (see page 57 of Northern Silica Project IAS) will occur as a result of the Northern Silica Project. This is neither accurate nor feasible since all surface water, natural or man-made will need management on site. Governmental data layers on QLD Globe indicate that the site intersects with a number of waterways under the *Fisheries Act 1994* (Qld) and potential watercourses under the *Water Act 2000* (Qld). Under the *Water Act 2000* (Qld), Diatreme may require a water license to the extent that its operations affect surface, underground or overland flow water; and
- environmental offsets for the Northern Silica Project have the potential to be significant due to the nature of the local environment.[29] Diatreme's strategy to deal with environmental offsets is not clear from the Diatreme Scoping Study.

29 An environmental offset compensates for unavoidable impacts of significant environmental matters on one site, by securing land on another site and managing that land to replace those significant environmental matters which were lost.

3.7 Unsubstantiated statements in the Bidder's Statement about the synergies that may flow to Merged Group shareholders

The Bidder's Statement makes various statements regarding the potential for synergies through the combination of Metallica and Diatreme, from an operational perspective, without providing any detail on those synergies. In particular, the mining lease applications of Metallica and Diatreme are not contiguous. The CFS Project is approximately 18 kilometres from the planned location of the processing infrastructure for the Northern Silica Project. Therefore, any silica sand from the CFS Project would need to be carried through Mitsubishi's mining lease, processed 18 kilometres away, and then returned to export infrastructure some kilometres away again. Accordingly, it is not clear what operational synergies will be realised by the Merged Group.

Not only does the Bidder's Statement not identify the nature of the operational synergies, it lacks any cogent detail on Diatreme's intentions for the CFS Project. Your Directors find it difficult to understand how Diatreme could make a takeover bid for Metallica without a view on its intentions for the CFS Project, even if the view was subject to a further review. However, Diatreme's disclosure suggest that it has no intentions in respect of the CFS Project, and won't have any such intentions until it has conducted an operations review.[30]

3.8 Diatreme will likely require substantial equity capital in the future

Diatreme has cash of $10,772,000 as at 31 December 2023 (excluding cash held in the JV). Diatreme will likely require additional equity capital, which will result in further dilution of Metallica Shareholders' Merged Group ownership to the extent that Metallica Shareholders do not, or are unable to, participate in future capital raising initiatives of the Merged Group.

The Bidder's Statement states that Diatreme has estimated that for the 12 months ended 31 December 2024, project expenditure for the Cape Silica Joint Venture will be $16.5 million.[31] This is significantly higher than Metallica's historical or projected expenditure on the CFS Project across similar timeframes. This expenditure would result in the Cape Silica Joint Venture having a cash balance of $10 million at 31 December 2024, at which time it will, presumably, require further equity capital to achieve a final investment decision. This would result in further dilution of Metallica Shareholders' Merged Group ownership to the extent that Metallica Shareholders do not, are not invited to, or are unable to, participate in such capital raising initiatives.

In addition, Diatreme has a large number of options on issue (70,000,000), which will further dilute Metallica Shareholders if and when those options are exercised.

As a shareholder of the Merged Group, in a project that is less advanced than Metallica's CFS Project and with a reasonable expectation of materially higher capital costs, the Metallica Directors expect the equity funding requirements for Metallica to be less than those of Diatreme in getting the respective projects to financial close.

30 See section 8.2.4 on page 58 of the Bidder's Statement.

31 See section 9.1.1 on page 61 of the Bidder's Statement

4 A comparison of Metallica's CFS Project with Diatreme's Northern Silica Project

Table 3: Project comparison

	CFS PROJECT (METALLICA)	NORTHERN SILICA PROJECT (DIATREME)	FURTHER INFORMATION
Reserve and level of study			
JORC Reserve	YES – Reserve for all tonnes mined	Nil – resource only	Section 3.5
Level of study completed	Definitive Feasibility Study	Scoping Study	Section 3.1
Accuracy of capital estimates	-10% / +15%	+/-35%	DFS / Diatreme Scoping Study
Marine infrastructure			
Confidence of infrastructure solution	Single focussed solution	Three possible solutions, uncertainty to which option will be progressed	Sections 3.2 and 3.3
Interaction with Mitsubishi	Nil	Significant	Sections 3.2 and 3.3
Agreement required from Mitsubishi	Nil	Yes	Sections 3.2 and 3.3
Effect of prevailing weather and sea state on marine operations	Minimal	Significant	Section 3.3
Largest ship that can be loaded	170,000 tonne vessels	80,000 tonne vessels	Section 3.3 'Limitations on vessel size'
Freight cost per tonne sold*	$12.58	$18.15	Section 3.3 'Limitations on vessel size'
Mining and environment			
Distance from jetty to initial mine area	~2 kilometres	~18 kilometres	Diatreme Scoping Study maps
Length of Slurry Pipeline from process plant to stockpile	0 kilometres (400m conveyor to be used)	10 kilometres	Diatreme Scoping Study Section 6.6
Environmental impact of infrastructure	Minimal	Significant	Section 3.6
Environmental impact of mining	Small area disturbed	Larger area disturbed	Section 3.6
Quality and metallurgical studies			
Quality suitable for glass used in solar panels	Yes	Yes – subject to bulk metallurgical testing	DFS / Diatreme Scoping Study
Level of Metallurgical Studies	Multiple bulk and benchtop characterisation testings confirm results	Benchtop characterisation testing	Section 3.1

5 Cross ownership conflict of interest

Cross shareholding ownership is a governance concern for shareholders, because company decisions that are in the hands of shareholders, such as control transactions, may be affected by the conflicting interests of 'a few' rather than the common interests of 'the whole'.

Metallica's three largest shareholders (**Conflicted Shareholders**) and their respective interests in Metallica are set out on the left hand side of the table below. The interests of those same shareholders in Diatreme, and in the Merged Group, are set out in the middle and on the right hand side of table 4 below (respectively).

Table 4: Cross ownership of Metallica, Diatreme and the Merged Group

METALLICA MINERALS LIMITED		DIATREME LIMITED		MERGED GROUP	
Shareholder	%	Shareholder	%	Shareholder	%
Ilwella Pty Ltd	24.11	Ilwella Pty Ltd###	21.04	Ilwella Pty Ltd	21.80
Sibelco Asia Pacific Pty Ltd	16.43#	Sibelco Asia Pacific Pty Ltd##	19.27	Sibelco Asia Pacific Pty Ltd	18.50
Sparta AG*	9.60	Delphi Unternehmensberatung AG*	9.20	Delphi Unternehmensberatung AG*	6.80
TOTAL MLM	50.14	TOTAL DRX	49.51	TOTAL MERGED GROUP	47.10
Metallica minority	49.86	Diatreme minority	50.49	Merged Group minority	52.90
TOTAL	100.00	TOTAL	100.00	TOTAL	100.00

Metallica is aware that Sibelco Asia Pacific Pty Ltd (**Sibelco**) has continued to buy shares in Metallica after the announcement of the proposed takeover bid by Diatreme on 16 February 2024. The Bidder's Statement also indicates that Sibelco has also advised Diatreme that it intends to accept the Offer in respect of all Metallica Shares currently held and subsequently acquired, in the absence of a superior proposal.

In addition to having a cross-interest in Metallica and Diatreme, Sibelco is party to a long-term joint venture with Diatreme to develop Diatreme's Galalar Silica Project and Northern Resource Project, described by Diatreme as a 'transformational strategic relationship', with Sibelco having contributed $35 million in funding to the joint venture company, Cape Silica Holdings Pty Ltd (ACN 659 896 189) over two tranches in December 2022 and October 2023, earning a 26.8% project interest.

Ilwella has a nominee on Diatreme's board of directors (Mr Michael Chapman).

* Based on public information, it appears that Delphi Unternehmensberatung AG (**Delphi AG**) controls Sparta AG. In particular, Delphi AG owns 100% of VVBeteiligungen AG, which owns a majority of Deutsche Balaton AG, which owns 73% of Sparta AG.

In addition to the voting interests above, Diatreme has announced that Sibelco has advised Diatreme that, in the absence of a superior proposal, it intends to accept the Offer in respect of all Metallica Shares currently held and subsequently acquired. Furthermore, Sibelco has continued to buy shares in Metallica in the period after Diatreme proposed the Offer.

In broad terms, cross-ownership conflicted voting occurs where shareholders with large ownership positions in two companies involved in a transaction vote or take some other action e.g. to accept a takeover bid (as entitled by their shareholding) in one of those companies to benefit their shareholding in the other company. In this context, the Conflicted Shareholders will, logically, make decisions with the intention of maximising the overall value of their portfolio, which may not be what is best for Metallica, or for Metallica's non-conflicted shareholders. For Sibelco, in particular, that 'portfolio' includes interests as a global miner of industrial minerals (including silica sand) and as a joint venture participant in Diatreme's silica sand projects.

As set out in Section 3.7, the Bidder's Statement does not articulate the operational synergies that Diatreme is likely to achieve from the acquisition of Metallica. Normally, a bidder's statement will include a comprehensive assessment of the intentions of the bidder in respect of (among other things) the target's assets, which might inform the nature of the synergies derived. Your Directors were underwhelmed by Diatreme's disclosure in that regard.[32] In particular, the disclosure indicates that Diatreme have deferred any decision regarding the integration of Metallica's CFS Project to the outcome of an 'operations review'. It seems highly unlikely to your Directors that Diatreme would make a bid for Metallica absent an understanding of what it intends to do with Metallica's assets, most notably the CFS Project. The best indication is perhaps the disclosure in Section 8.2.4 (paragraph (c)) of the Bidder's Statement which says: *"(t)his review will inform the decision by Diatreme as to the best pathway to develop the Metallica silica sands assets, including potential inclusion of those assets in the Cape Silica Joint Venture and the associated timing"*. If Diatreme's intention is to transfer the CFS Project into the Cape Silica Joint Venture, whether or not subject to the 'operations review', then Sibelco would essentially obtain a benefit or interest as a result of the successful completion of the Offer that is not available to other Metallica Shareholders.

Your Directors believe that Metallica's 'non-conflicted' shareholders should have an opportunity to consider and vote as a group on any alternative proposal, which may constitute a frustrating action with respect to the Offer. A 'frustrating action' is one that would trigger a defeating condition in the Offer and permit Diatreme to withdraw Offers under the bid, such as the sale of Metallica's CFS Project. Accordingly, before any such action is taken, Metallica Shareholders will be asked to vote on any frustrating action. As matters currently stand, the conflicted shareholders will 'carry the vote' (noting they have an estimated 50.14% collective interest in Metallica).

To redress this issue, Metallica intends to write each of the Conflicted Shareholders and seek undertakings that those holders not vote against any alternative proposal that is put (e.g. for the purchase of the CFS Project). If those undertakings are not forthcoming, and the Conflicted Shareholders (or any of them) do vote against any alternative proposal your Directors consider superior, Metallica will take steps to segregate the votes of the Conflicted Shareholders for the purpose of determining the outcome of the vote.[33]

Your Directors intend to waive the Standstill Condition by having Metallica sign a deed poll in favour of Diatreme, pursuant to which Metallica would waive and release Diatreme from any liability under the Standstill Condition, with such release to take effect: (a) if a superior proposal does not eventuate, immediately prior to the end of the Offer Period; or if a superior proposal does eventuate and is announced to the market prior to the end of the Offer Period (and is subject to Metallica Shareholder approval), immediately after the general meeting to consider the proposal, in the event that Metallica Shareholders do not vote in favour of the superior proposal. For the purpose of this deed poll, a superior proposal will be one that your Directors, acting reasonably and having consideration of all material facts, believe is or could be superior to the Offer.

32 Refer to section 8 of the Bidder's Statement.

33 If the relevant vote requires a statutory or Listing Rule threshold be met, then Metallica will need to take steps to ensure that any such segregation of votes is recognised, including to seek in-principle advice from the ASX that the Conflicted Shareholders vote ought to be excluded or, alternatively, make an application to the Takeovers Panel seeking orders to that effect.

6 What do you need to do?

In considering whether to
REJECT THE OFFER
your Directors encourage you to:

- read the whole of this Target's Statement;
- consider the reasons for the Directors' recommendations set out in this Target's Statement;
- consider the choices available to you outlined below;
- have regard to your individual risk profile, portfolio strategy, tax position and financial circumstances; and
- consider the future prospects of Metallica.

Simply ignore all communications with Diatreme and do nothing.

7 Frequently Asked Questions

This section answers some frequently asked questions about the Offer. It is not intended to address all issues relevant to Shareholders. This section should be read together with all other parts of this Target's Statement.

QUESTION	ANSWER	FURTHER INFORMATION
What is this Target's Statement?	This Target's Statement has been prepared by Metallica and provides Metallica's response to the Bidder's Statement to help you decide whether to accept or reject the Offer, including the recommendation of your Metallica Directors to **REJECT** the Offer.	Executive Chairman's Letter
What is the Bidder's Statement?	The Bidder's Statement is the document setting out the terms of the Offer. The Bidder's Statement was sent to Metallica Shareholders on 11 April 2024.	Bidder's Statement
What is the Offer?	Diatreme is making an off-market takeover offer for all of the ordinary Shares in Metallica for consideration of 1.3319 fully paid ordinary shares in Diatreme per Metallica Share.	Section 9
Who is Diatreme?	Diatreme is an Australian project developer of mineral and silica sand based in Brisbane.	Section 3 of the Bidder's Statement
How many Shares does Diatreme hold in Metallica?	Diatreme currently holds no Shares in Metallica.	N/A
What choices do I have as a Shareholder?	As a Shareholder you can: • **REJECT the Offer by doing nothing;** • accept the Offer for your Metallica Shares by following the instructions in the Bidder's Statement; or • consider selling your Metallica Shares through the ASX which would provide you a certain outcome, whereas, as the Offer is conditional there is no certainty that it will complete. If you are in any doubt as to what to do, your Metallica Directors recommend that you seek independent financial and taxation advice from your professional advisers. Metallica Shareholders should carefully consider the Metallica Directors' recommendation and other important information set out in this Target's Statement.	A summary of the implications for these choices is set out below
What happens if I do nothing?	You will remain a Metallica Shareholder. However, if Diatreme acquires 90% or more of Metallica Shares, Diatreme has stated that it intends to Compulsorily Acquire your Metallica Shares. If Diatreme acquires between 50% and 90% of Metallica Shares under the Offer and all of the Conditions of the Offer are satisfied or waived, you will become a minority shareholder of Metallica.	Sections 9.10 and 9.11

QUESTION	ANSWER	FURTHER INFORMATION
What are the Directors recommending?	**Your Directors recommend that Shareholders REJECT the Offer.** **To follow your Metallica's Director's recommendation, you should DO NOTHING.** If there is a change to this recommendation or any material developments in relation to the Offer, Metallica will issue a supplementary Target's Statement.	Refer above
What do the Directors of Metallica intend to do with their Shares?	Each of the Directors presently intend to **REJECT** the Offer in respect of all Metallica Shares which they hold or control.	Executive Chairman's Letter
How do I reject the Offer?	To **REJECT** the Offer, you should **DO NOTHING**. You should **TAKE NO ACTION** in relation to all documents from Diatreme regarding the Offer.	Refer above
How do I accept the Offer?	To accept the Offer, you should refer to Section 1 of the Bidder's Statement for instructions on how to do so. However, the Metallica Directors unanimously recommend that you **REJECT** the Offer.	Section 1 of the Bidder's Statement
What happens if the Offer Price is increased?	If you have already accepted the Offer and Diatreme offers additional consideration, then you are entitled to the increased consideration.	N/A
What will happen if a superior proposal emerges?	Your Metallica Directors will carefully consider any competing or superior proposal and will advise Metallica Shareholders accordingly.	N/A
What are the consequences of accepting the Offer now?	If you accept the Offer now for your Shares: • you relinquish control of those Shares to Diatreme; • you grant Diatreme a power of attorney to exercise all voting rights in respect of those Shares from the time you accept the Offer; • you will not be able to sell those Shares through the ASX or deal with them in any other manner, unless any withdrawal rights apply at the applicable time and you withdraw your acceptance of the Offer, or the Offer lapses; and • you will not be able to accept a superior offer for those Shares from any other bidder if such an offer is made, unless any withdrawal rights apply at the applicable time and you withdraw your acceptance of the Offer, or the Offer lapses.	Section 9.6
What are the risks of not accepting the Offer?	If you do not accept the Offer you will be exposed to the risks associated with being a continuing Shareholder in Metallica. Some of these risks are described in section 8.8.	Section 8.8

QUESTION	ANSWER	FURTHER INFORMATION
Will I pay brokerage if I accept the Offer?	If you accept the Offer and your Metallica Shares are registered in an Issuer Sponsored Holding in your name, you will not incur brokerage on the acceptance of the Offer or transfer of your Metallica Shares to Diatreme pursuant to the Offer. Metallica Shareholders should refer to section 2 of the Bidder's Statement for examples of when they may be required to pay brokerage.	Section 2 of the Bidder's Statement
If I accept the Offer now, can I withdraw my acceptance?	Under the terms of the Offer, you cannot withdraw your acceptance unless a withdrawal right arises under the Corporations Act.	Section 9.7
Can I be forced to sell my Shares?	Only in circumstances where Diatreme (together with its Associates) has a Relevant Interest in at least 90% (by number) of the Metallica Shares, will it be entitled to Compulsorily Acquire pursuant to the Corporations Act any outstanding Metallica Shares on the same terms as the Offer.	Sections 9.10 and 9.11
Can I accept the Offer in respect of part of my holding?	No. You may accept the Offer for all of the Metallica Shares held by you, however, the Directors recommend that you do not accept the Offer for any of your Metallica Shares.	Section 1 of the Bidder's Statement
When does the Offer close?	The Offer is presently scheduled to close at 7.00 pm (Sydney time) on 27 May 2024 at the earliest. See section 9.5 for details of the circumstances in which the Offer Period can be extended by Diatreme.	Section 9.5
When will I receive the Offer Consideration if I accept the Offer?	You will receive the Offer Consideration for the Metallica Shares for which you have accepted the Offer on the earlier of: • one month after the Offer is validly accepted by you or, if the Offer is subject to a defeating Condition, within one month after the Offer becomes unconditional; and • 21 days after the end of the Offer Period, provided the Offer has become unconditional. Details of the timing of the payment by Diatreme of the Offer Consideration is set out in detail in schedule 1 of the Bidder's Statement.	Schedule 1 of the Bidder's Statement and section 9.9

QUESTION	ANSWER	FURTHER INFORMATION
What are the tax implications of accepting the Offer?	A general outline of the tax implications for certain Australian resident Shareholders of accepting the Offer is set out in Section 11 of the Bidder's Statement. You should not rely on either outline as advice on your own taxation affairs. It does not deal with the position of individual Shareholders. You should therefore seek your own personal, independent financial and taxation advice before making a decision as to whether or not to accept the Offer for your Shares. If you accept, you may for example, be liable for capital gains tax. If Metallica Shareholders accept the Offer, they may be ineligible for capital gains rollover relief (subject to each individual Metallica Shareholder's circumstances) unless Diatreme is able to acquire at least 80% or more of all Metallica Shares.	Section 11 of the Bidder's Statement
What if I have any questions in relation to the Offer?	Should Metallica Shareholders have any queries about the Offer or this Target's Statement, they should contact Metallica by email on admin@metallicaminerals.com.au. If you are in any doubt about how to deal with this document, you are encouraged to seek independent advice from your professional adviser, as necessary.	N/A
When will the Standstill Condition be waived?	Your Directors intend to waive the Standstill Condition: • if a superior proposal does not eventuate, immediately prior to the end of the Offer Period; or • if a superior proposal does eventuate and is announced to the market prior to the end of the Offer Period (and is subject to Metallica Shareholder approval), immediately after the general meeting to consider the proposal, in the event that Metallica Shareholders do not vote in favour of the superior proposal.	Section 5

8 Overview of Metallica

8.1 Summary

Metallica Minerals Limited (ASX: MLM) is an Australian development company focused on delivering high purity silica sand to a diversified global customer base.

Metallica's focus remains on the delivery of high-purity silica sand (**HPSS**) from the 100% owned Cape Flattery Silica Sand Project. There is exceptional demand for HPSS to support the photovoltaic manufacturers and to service the worldwide delivery of solar panels. This is the key driver for the CFS Project's development.

Details about Metallica's assets are contained in this Target's Statement and in the public ASX Releases issued by Metallica on the ASX. These can viewed here: https://www.asx.com.au/markets/company/mlm.

8.2 Cape Flattery Silica Project (CFS Project)

OVERVIEW

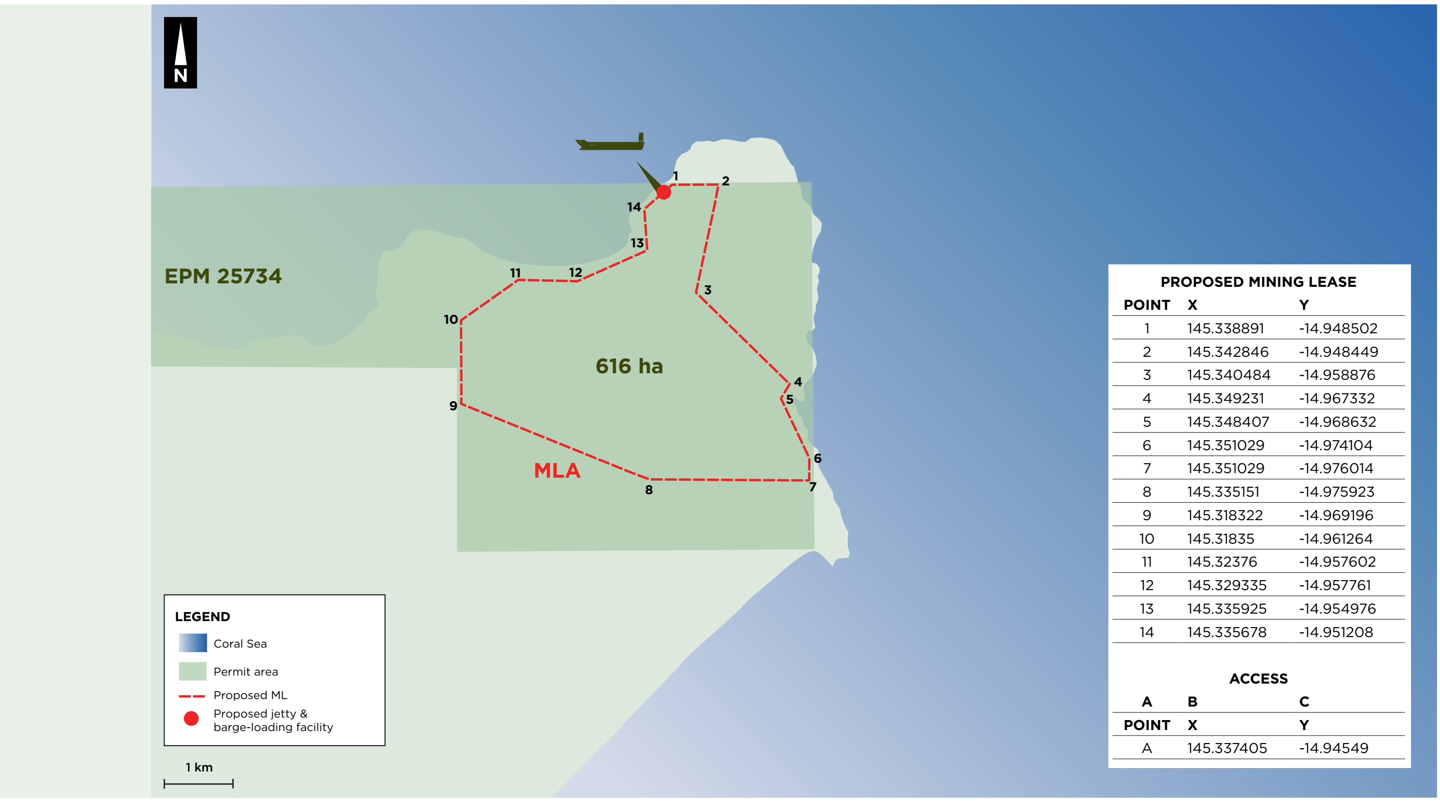
The Cape Flattery Silica Sand project is located on the eastern coastline of the Cape York Peninsula and approximately 220km north of Cairns in North Queensland, Australia. It is 100% owned through Metallica's subsidiary Cape Flattery Silica Pty Ltd (ACN 138 608 894) and comprises the 36km^2 exploration tenement EPM 25734. The Project is adjacent to the world class mining and shipping operation owned by Mitsubishi Corporation (through its wholly owned subsidiary Cape Flattery Silica Mines Pty Ltd (ACN 000 586 096)).

Importantly, the Project is located within the Cape Flattery Port area. The Cape Flattery Port area is owned and operated by Ports North, a Queensland Government-owned corporation. Ports North is the owner of the jetty leased by Mitsubishi Corporation, which is located just south of the CFS Project's tenement. The ship-loading equipment on the jetty is primarily owned by Mitsubishi Corporation.

MINING LEASE APPLICATION

On 20 May 2021, Metallica lodged a mining lease application (MLA 100284) with the Queensland Department of Resources (see Metallica ASX Release titled *"Mining Lease Application lodged for Cape Flattery Silica"* dated 15 June 2021). The MLA covers 616.1 hectares and has been applied for a term of 25 years. MLA 100284 is located within EPM 25734 (the Metallica owned exploration tenement) as indicated on the figure immediately below.

Figure 9: CFS Project MLA boundary area and EPM



PROPOSED MINING LEASE

POINT	X	Y
1	145.338891	-14.948502
2	145.342846	-14.948449
3	145.340484	-14.958876
4	145.349231	-14.967332
5	145.348407	-14.968632
6	145.351029	-14.974104
7	145.351029	-14.976014
8	145.335151	-14.975923
9	145.318322	-14.969196
10	145.31835	-14.961264
11	145.32376	-14.957602
12	145.329335	-14.957761
13	145.335925	-14.954976
14	145.335678	-14.951208

ACCESS

A	B	C
POINT	X	Y
A	145.337405	-14.94549

Under the *Native Title Act 1993* (Cth), before the MLA can be granted, Metallica must negotiate access with native title determination parties upon whose land the Project is on. There are two body corporate entities that represent two respective Aboriginal clans who have an overlapping interest in the same area. The body corporate entities are known as 'Walmbaar' for the Dingaal Clan, and 'Cicada Nguurruumungu' for the Nguurruumungu Clan.

Recently, negotiations resumed with the two native title holders, Hopevale Congress Aboriginal Corporation RNTBC Trustee, on behalf of the Nguurruumungu Clan, and Walmbaar Aboriginal Corporation, on behalf of the Dingaal Clan. Hopevale Congress has changed many of its directors, and Metallica had the opportunity to present to the new board in January 2023. Meetings have continued with Dingaal and Nguurruumungu clan members in 2023. Following the challenges Hopevale Congress experienced in the second half of 2022, the first meeting with all three groups together was held in late August 2023, thirteen months after the last negotiation meeting.

The challenges of seeking a unified response to the outstanding matters has resulted in Metallica requesting the assistance of the National Native Title Tribunal to mediate among the native title holders, the State of Queensland and Metallica's subsidiary Cape Flattery Silica Pty Ltd (ACN 138 608 894), to assist in obtaining their agreement for the grant of MLA 100284.

Metallica expects that this negotiation process will commence in the coming months.

PROJECT ECONOMICS

The release of the definitive feasibility study (**DFS**) on 17 July 2023 (see Metallica ASX Release titled *"Cape Flattery Silica DFS confirms excellent economics"*) was the culmination of months of analysis and planning for the CFS Project team to demonstrate that operationally and financially the CFS Project can mine, process and transport HPSS to the seaborne market. Equally importantly, the DFS detailed that it can deliver significant economic benefit to shareholders, the local communities of Hope Vale and Cooktown and complement the Commonwealth and Queensland governments' critical mineral strategies.

The key financial metrics from the DFS included project cash revenue of $2.9 billion, returning pre-tax NPV10 nominal of $437.3 million and an IRR of 32.2%. Capital cost was estimated to be $165 million with a payback period from commencement of production of 2.85 years. All production is based on the Ore Reserve of 47Mt at 99.18% SiO_2 (within a Mineral Resource of 49.5Mt at 99.19% SiO_2) to be processed on-site over a 25-year project life, yielding HPSS of 1.5Mtpa. The processed product will have a quality of 99.9% silica and less than 120ppm iron, making it suitable for the manufacture of the glass used in solar panels.

On 15 November 2023, MLM announced that the DFS had been updated (see Metallica ASX Release titled *"Cape Flattery Silica Updated DFS Supports 3Mtpa Sales"*) (**Updated DFS**). The Updated DFS showed:

- life of Project cash revenue of $3.065 billion, returning pre-tax NPV10 nominal of $702.4 million, and an IRR of 37.2%; and
- increased average cash margin to $53.06 per tonne and average EBITDA to $134.6 million per annum.

The updated initial capital cost of the CFS Project is estimated to be $236.7 million (which includes a 10% contingency of $21.5 million) with a payback period from commencement of production of 3.2 years.

The Ore Reserve of 47Mt at 99.11% SiO_2 (within a Mineral Resource of 49.5Mt at 99.10% SiO_2, refer to Tables 5 and 6 below), is to be processed over a 15 year project life. All production is based on the Ore Reserve of 47Mt (refer Table 5: Ore Reserve).

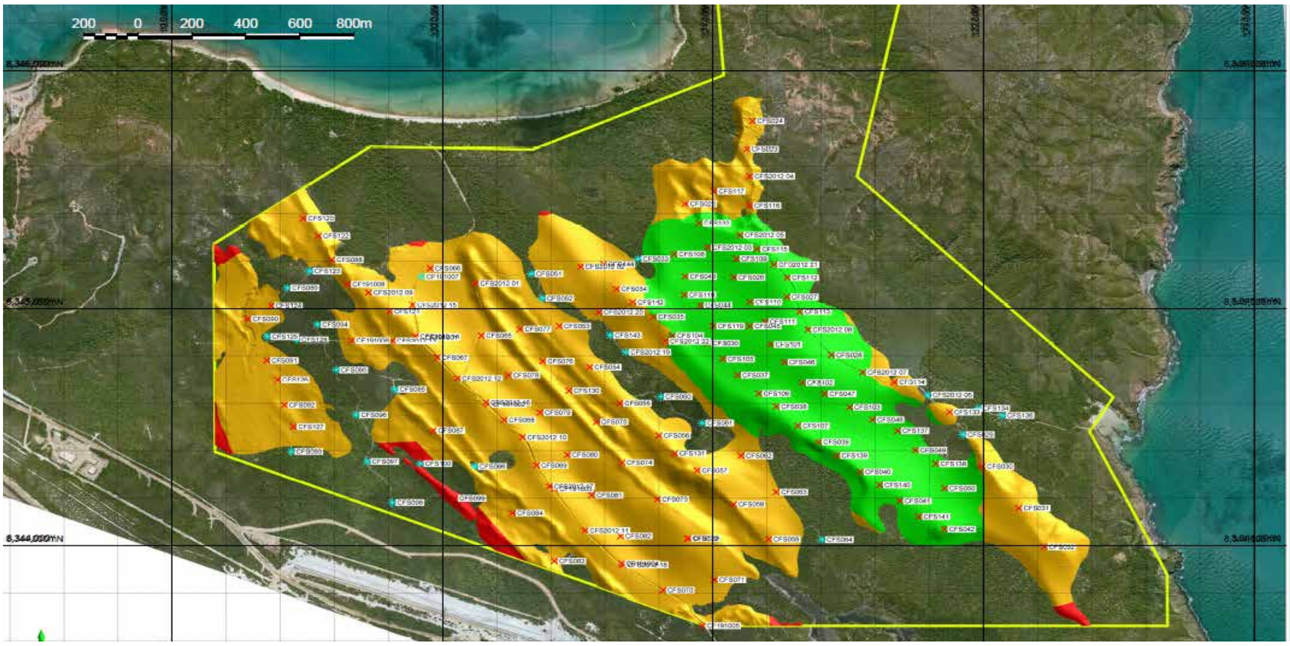
Table 5: Ore Reserve

ORE RESERVE CATEGORY	TONNAGE Mt	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %	LOI %	WASTE Mt
Probable Reserve	47	99.11	0.09	0.14	0.15	0.24	4.0

Table 6: CFS Project – Mineral Resource for the eastern resource area

RESOURCE CATEGORY	SILICA SAND Mt	SiO_2 %	Fe_2O_3 %	TiO_2 %	LOI %	Al_2O_3 %	DENSITY T/m^3	SILICA SAND Mm^3
Measured	16.1	99.20	0.08	0.12	0.13	0.22	1.6	10.1
Indicated	33.2	99.05	0.10	0.18	0.15	0.25	1.6	20.7
Inferred	0.2	99.0	0.12	0.27	0.13	0.28	1.6	0.1
Total	**49.5**	**99.10**	**0.09**	**0.16**	**0.14**	**0.24**	**1.6**	**30.9**

Figure 10: Overview of drillholes and Resource category areas within MLA 100284 boundary



The Updated DFS does not include the Inferred Resource for the western area of EPM 25734 (see Metallica ASX Release titled *"Maiden Inferred Resource of 12Mt at 99.15% SiO_2, 0.09% Fe_2O_3 Estimated for CFS West Project"* dated 3 March 2023). This may represent an additional opportunity to further improve the economics for the CFS Project.

REGULATORY

On 15 December 2023, Metallica announced that the CFS Project was found to meet the criteria for a 'coordinated project' under the *State Development and Public Works Organisation Act 1971* (QLD) (**SDPWO Act**), it being the first project at Cape Flattery to be declared a 'coordinated project' by the Queensland Government's Office of the Coordinator-General (**OCG**) (see Metallica ASX Release titled *"CFS Project declared a Coordinated Project"*). This was granted after the Company lodged its submission with the OCG in September 2023. The submission sought approval for up to 4Mtpa of production which aligns with what Metallica had previously released to the market (see Metallica ASX Release titled *"Cape Flattery Silica updated DFS supports ~3Mtpa saleable product"* dated 15 November 2023). A 'coordinated project' designation is intended to streamline interactions with key State and Commonwealth Government departments and agencies. As at the date of this Target's Statement, the OCG is preparing draft terms of reference for an EIS which will be released to the public for comment. To date significant environmental works have been undertaken which can be used towards meeting the requirements of the EIS.

The combination of the cyclone in far North Queensland in late 2023 and further rain in the region at the beginning of 2024 has delayed the start of the EIS field activities. As previously disclosed, a number of environmental studies have already been completed. The decision was taken to undertake some prework on some studies in advance of the receipt of the terms of reference for the EIS from the OCG. This pre-work is for studies that are well understood and customary and do not need to wait for final terms of reference.

EXPORTING SOLUTION

Metallica's solution for exporting the HPSS is the construction of a purpose-built jetty (subject to the relevant development approval) to allow barge loading and transhipping operations. This infrastructure is located within the port limit of Cape Flattery, and crucially toward the north-west of the Port, where sea conditions are favourable for barge loading operations.

Figure 11: Barge loading facility (looking southwest)

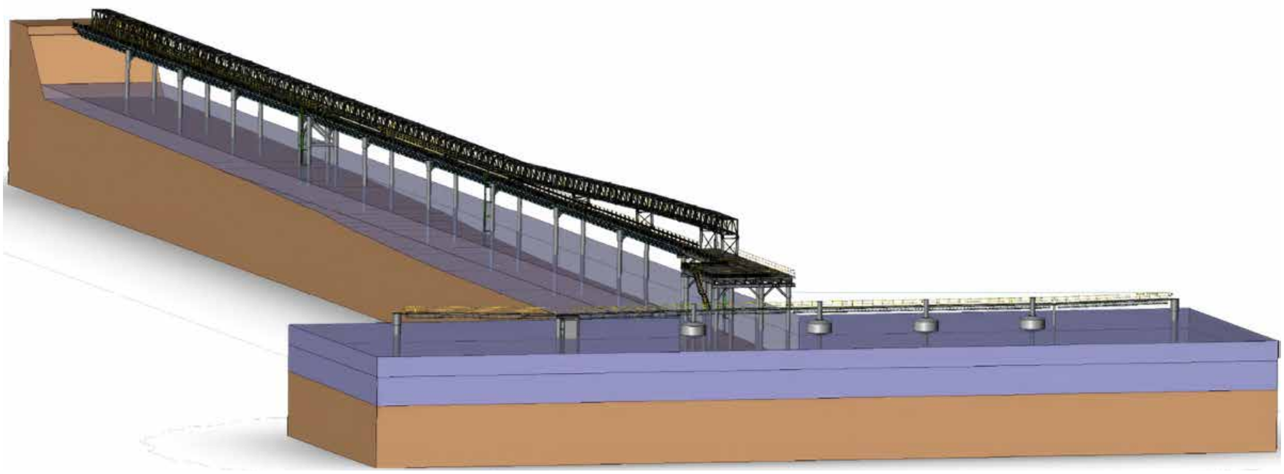
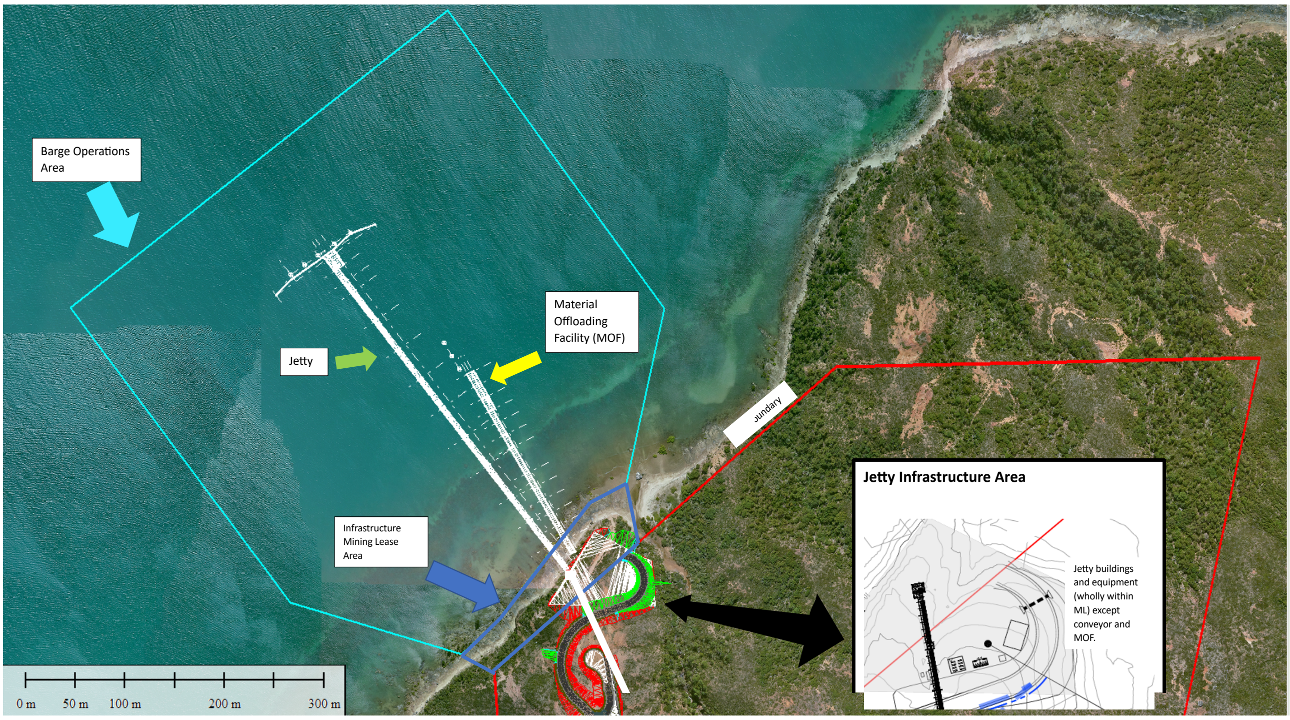


Figure 12: Material offload facility (looking southwest)

Figure 13: Jetty loading facility and roll-on-roll-off



The development application process for the purpose-built jetty is to be made by Metallica in conjunction with the application process with the OCG described above.

OFFTAKE ARRANGEMENTS

Metallica continues to engage with a number of potential offtake parties who have expressed interest in securing seaborne supply of a high purity silica sand product. A number of these parties have visited the CFS Project. Metallica's General Manager of Commercial has completed a third visit to China, meeting with top tier photovoltaic glass manufacturers, potential supply chain partners, and sand processors to discuss offtake, and also to understand the competitive environment. Discussions include the potential to value add through additional processing. Discussions are also continuing with parties in Taiwan, South Korea and Japan.

Metallica has executed a memorandum of understanding (MOU) with Mitsui & Co Limited, one of the largest global trading and investment companies based in Japan. The memorandum of understanding covers negotiations to evaluate the feasibility and possibility of a sale and purchase transaction of all or specific portions of the silica sand products that the Company will produce in the future. The memorandum of understanding was renewed for a further 12 months to 1 September 2024. An MOU has also been executed with Eternal Asia Supply Chain Management Ltd (**EA**) allowing for technical exchange, testing of samples and discussion on further processing and value adding of processed silica sand from the CFS project using EA's proprietary technolgy.

8.3 Clermont project

In August 2021, Metallica announced it had signed a memorandum of understanding with Diatreme for a potential joint venture on the Clermont Gold Copper Project which comprises EPM 17968 (**Clermont Tenement**). The Clermont Tenement is held as a joint venture between PGE Minerals Pty Ltd (ACN 642 538 805) (a wholly owned subsidiary of Metallica) and Chalcophile Resources Pty Ltd (ACN 090 712 217) (a wholly owned subsidiary of Diatreme).

On 29 April 2022, Metallica confirmed that it had met the expenditure commitment to earn 25% of the joint venture. In addition, the Company increased its share to 51% of the joint venture as announced on 4 July 2023 (see Metallica ASX release titled *"Further drilling completed at Clermont (EPM17968)"*). Drilling was completed in the second quarter of 2023 and did not intersect the copper porphyry target. As such, no further major expenditure is expected to be made on a porphyry target on the Clermont Tenement.

During the September 2023 Quarter, the Company elected to submit a 'sole fund election' to Diatreme, whereby Metallica will sole fund the next $1 million of joint venture expenditure on the Clermont project in return for Metallica obtaining a further 24% ownership of the joint venture.

On 11 December 2023, Metallica announced that drilling had commenced at the Leo Grande Graphite Gold Project which is located within the Clermont Tenement (see Metallica ASX Release titled *"Drilling Commences at Leo Grande Graphite / Gold Prospect"*).

On 19 February 2024, Metallica received the assay results for the five RC holes (LGRC055 to LGRC059) drilled at the Leo Grande prospect on the Clermont Tenement in December 2023. A total of 301m were drilled using a UDR650 from Eagle Drilling. The holes drilled by Metallica were *"twins"* of holes drilled by Plutonic in 1989 and 1990 which had noted moderate to high levels of graphite associated with gold mineralization in the geological logs. The drilling was undertaken to quantify the graphite content in the holes and to try and determine the nature of the graphite. Hole LGRC055, which was a twin of LGRC027 contained the highest level of graphite with hole LGRC059 (twin of LGRC048) containing the least amount of graphite. Details of the holes drilled at the Leo Grande Prospect in December are presented in Table 7 below.

Table 7: Leo Grande – Drill hole parameters

HOLE NUMBER	EASTING	NORTHING	RL	DIP	AZIM	DEPTH m	COMMENTS
LGRC055	541,951	7,473,622	426	-90	–	59	Wide Graphite zone associate with mylonite i
LGRC056	541,860	7,473,703	419	-60	032	59	Graphite intersected in mylonite below water table
LGRC057	541,846	7,473,730	419	-60	032	53	Graphite intersected in mylonite below water table
LGRC058	541,880	7,473,655	406	-90	–	71	Graphite intersected in mylonite below water table
LGRC059	542,583	7,473,942	390	-60	032	59	Small (10m) zone of graphitic mylonite – low to trace amounts

8.4 JORC compliance statements

Information in relation to the Mineral Resources and Ore Reserves of Metallica can be found in the following announcements released by Metallica to ASX, which also includes the accompanying assumptions, technical parameters, competent person's statements and explanatory notes:

DATE	ANNOUNCEMENT
17 July 2023	Cape Flattery Silica DFS Confirms Excellent Economics
3 March 2023	Maiden Inferred Mineral Resource of 12Mt at 99.15% SiO_2, 0.09% Fe_2O_3 Estimated for Cape Flattery Silica West Project

At the date of this Target's Statement, Metallica is not aware of any new information or data that materially affects the information included in the original announcement and, in the case of estimates of Mineral Resources or Ore Reserves, considers that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

Refer to the Bidder's Statement for information about Diatreme in this regard.

8.5 Metallica Directors

Theo Psaros (Executive Chairman)

Mr Psaros has over 38 years' of commercial experience in government departments, private companies and publicly listed companies. In the resource industry, he has served in the capacity of Chief Financial Officer and Chief Operating Officer at MetroCoal Limited, and as Chairman of the Surat Basin Coal Alliance. Previously, Mr Psaros also assisted the Queensland Government Department of Natural Resources & Mines to develop a 30 year strategic plan for Queensland's resource industry. Mr Psaros was appointed Non-Executive Chairman of Metallica on 1 February 2019 and Executive Chairman on 21 May 2020.

Stuart Bradley Sampson (Non-Executive Director)

Mr Sampson is an internationally experienced business leader, Director and mining professional. Equipped with 30 years of experience in the resources industry and having occupied governance roles in listed companies across several international jurisdictions, he possesses significant expertise in the full cycle of mine exploration, development, operation and closure. Mr Sampson joined the board of Metallica as Non-Executive Director on 13 May 2021.

Mark Bojanjac (Non-Executive Director)

Mr Bojanjac is currently Executive Chairman of PolarX Limited (ASX:PXX) and Non-Executive Director of Kula Gold Limited (ASX:KGD). Mark has more than 20 years of experience in ASX resource companies, including companies that have reached production or have transitioned into a producer such as Adamus Resources Limited. Mr Bojanjac joined the board of Metallica as Non-Executive Director on 13 May 2021.

8.6 Cash position

At 31 December 2023, Metallica held cash of $4,821,125 million and liabilities of $910,923 million, for a net position of $3,910,202 million.

At 31 March 2024, Metallica had cash reserves of $3,800,076 (excluding bonding).

8.7 Further information

Metallica is a 'disclosing entity' under the Corporations Act and is subject to regular reporting and disclosure obligations under the Corporations Act and the Listing Rules. Metallica is obliged to notify ASX of any information about specific matters and events and, in particular, those matters which a reasonable person would expect to have a material effect on the price or value of Metallica Shares.

A list of the continuous disclosure announcements given to the ASX by Metallica after the lodgment with ASIC of Metallica's Annual Report for the period ending 11 October 2023 and before lodgment of this Target's Statement with ASIC is provided in Annexure 1.

Shareholders seeking further information on Metallica are directed to the list of publicly available announcements on the ASX website (www.asx.com.au, company code 'MLM') or on the Metallica website (www.metallicaminerals.com.au).

8.8 Key risks faced by Metallica

The price of Metallica Shares and the future performance of Metallica are influenced by a range of factors and risks. Whilst some of these risks can be mitigated by the use of safeguards and appropriate systems and actions, some are outside the control of Metallica and cannot be mitigated. The principal risks include, but are not limited to, those detailed below. Metallica does not give any form of assurance or guarantee of future performance, profitability, dividends, return of capital, or the price at which the Metallica Shares might trade in the future on the ASX.

Metallica Shareholders should carefully read and consider these risks together with the Bidder's Statement and this Target's Statement prior to accepting or rejecting the Offer.

MATERIAL BUSINESS RISKS

Resource and reserve estimates

Resource and reserve estimates are inherently prone to variability. They involve expressions of judgement with regard to the presence and quality of mineralisation and the ability to extract and process the mineralisation economically. Estimates which were valid when originally calculated may alter significantly when new information or techniques become available. This may result in alterations to development and mining plans which may, in turn, adversely affect the Metallica's operations and reduce the estimated amount of mineral resources and ore reserves available for production and expansion plans.

Metallica manages the risk associated with resource and reserve estimates by engaging suitably experienced and qualified contractors and operators and ensuring that the Competent Person meets the requirements of the JORC Code 2012.

Commodity prices

Commodity prices fluctuate and are affected by numerous factors beyond the control of Metallica. These factors include, but are not limited to, worldwide and regional supply and demand for commodities, general world economic conditions and the outlook for interest rates, inflation and other economic or political factors on both a regional and global basis. These factors may have a negative effect on Metallica's exploration, project development and production plans and activities, together with its ability to fund those plans and activities.

Operating risks

The operations of Metallica may be affected by various factors, including operational and technical difficulties encountered in mining; difficulties in commissioning and operating plant and equipment; mechanical failure or plant breakdown; unanticipated metallurgical problems which may affect extraction costs; adverse weather conditions; industrial and environmental accidents; industrial disputes; and unexpected shortages or increases in the costs of consumables, spare parts, plant and equipment. Such changes may have an adverse effect on the operations and production ability of Metallica by increasing costs or delaying activities.

Metallica manages operating risks through a variety of means including selecting suitably experienced and qualified contractors and operators; regular monitoring of the performance of contractors and operators; the recruitment and retention of appropriately qualified employees and contractors; and the regular review by the Board of Metallica's key risks.

Environmental, traditional land owner and other approval risks

The ability of Metallica to operate, develop and explore projects may be delayed and limited by environmental, traditional land owner, and other approval considerations. It is possible that significant costs may result from complying with Metallica 's environmental, traditional land owner, and other approval obligations. Metallica recognises management's best estimate for assets' retirement obligations and site rehabilitations in the period in which they are incurred. Actual costs incurred in future periods could differ materially from the estimates. Additionally, future changes to environmental laws and regulations, life of mine estimates and discount rates could affect the carrying amount of this provision.

Environmental regulation

Metallica is subject to environmental regulations under laws of Queensland and Australia where it holds mineral exploration and mining tenements. During the last financial year Metallica's activities recorded no non-compliance issues.

Access to infrastructure

Mining, processing, development and exploration activities depend, to a significant degree, on adequate infrastructure. In the course of developing future mines, Metallica may need to construct and support the construction of infrastructure, which may include permanent water supplies, tailings storage facilities, power, maintenance facilities and logistics services and access roads. Reliable rail facilities, roads, bridges, power sources and water supply are important determinants, affecting capital and operating costs. Unusual or infrequent weather phenomena, sabotage, government or other interference in the maintenance or provision of such infrastructure could produce a material adverse effect Metallica's operations, financial condition and result of operations. Any such issues arising in respect of the supporting infrastructure or on the Metallica's sites could produce a material adverse effect the Metallica's results of operations or financial condition. Furthermore, any failure or unavailability of operational infrastructure (for example, through equipment failure or disruption to its transportation arrangements) could bear a material adverse effect on the production output from its mines or impact its exploration activities or development of a mine or project. The risk of any interruption to the supply chain may result in shortage or the absence of key materials and consumables causing delay or suspension of production, which could have a material adverse effect on business, prospects, financial condition and results of operations.

Joint venture parties, contractors and agents

The Directors are unable to predict the risk of financial failure or default by a participant in any joint venture to which Metallica is, or may become a party; or insolvency or other managerial failure by any of the contractors used by the Metallica Group in any of its activities; or insolvency or other managerial failure by any of the other service providers used by Metallica for any activity which may have a material adverse effect on the business, results of operations, financial condition and prospects of Metallica.

Climate change

Metallica acknowledges the impacts of climate change and understands that its assets may, from time-to-time, experience severe climatic conditions. Severe weather events, such as torrential rain and flooding, could have a material adverse effect on operations, including on the delivery of supplies, equipment and fuel, as well as exploration and production levels. Consequently, the financial condition and prospects of the Metallica Group may be negatively impacted.

Key personnel

Metallica is reliant on a number of key personnel. The loss of one or more of its key personnel could have an adverse impact on the business of Metallica. Furthermore, it may be particularly difficult for Metallica to attract and retain suitably qualified and experienced people, given the competition from other industry participants, the location of its operations and the relevant size of Metallica. The loss of, or diminution in, the services of qualified mining specialists or of members of Management Metallica's senior employees or an inability to attract and retain additional senior management and/or mining personnel could have a material adverse effect on Metallica's business, financial condition and results of operations. There is no assurance that Metallica will successfully continue to retain existing specialised personnel and senior management or attract additional experienced and qualified senior management and/or mining personnel required to successfully execute and implement Metallica's business plan. Competition for such personnel is intense. The loss of such personnel and the failure to successfully recruit replacements in a timely manner, or at all, would have a material adverse effect on its business, prospects, financial condition and results of operations.

9 Information about Diatreme and the Offer

9.1 Information about Diatreme

OVERVIEW

Diatreme Resources Limited (ASX: DRX) is an ASX-listed Australian project developer of mineral and silica sand based in Brisbane, Australia. Diatreme has four key projects: (i) the Northern Silica Project, a silica sand mine located in Cape Flattery, Queensland; (ii) the Galalar Silica Sand Project, a silica sand mine located in Cape York, Queensland; (iii) the Clermont Copper-Gold Project, located in central Queensland; and (iv) the Cyclone Zircon Project, an undeveloped zircon project located in Western Australia's Eucla Basin.

Further information about Diatreme can be found in section 3 of the Bidder's Statement.

DIATREME'S INTEREST IN METALLICA

Diatreme did not have any voting power in Metallica or a Relevant Interest in any Metallica Shares as at the date of the Bidder's Statement.

9.2 The Offer

Diatreme is offering to acquire your Shares for 1.3319 fully paid ordinary shares in Diatreme per Metallica Share. For full details of the terms of the Offer, please refer to schedule 1 of the Bidder's Statement.

9.3 Conditions to the Offer

The Offer is subject to a number of Conditions. These are set out in full in schedule 2 of the Bidder's Statement.

9.4 Offer Period

The Offer is scheduled to close at 7.00 pm (Sydney time) on 27 May 2024 unless extended.

9.5 Extension of the Offer Period

Diatreme may extend the Offer Period at any time before the end of the Offer Period in certain circumstances. The maximum duration of the Offer Period is 12 months.

In addition, there will be an automatic extension of the Offer Period if, within the last seven days of the Offer Period:

- Diatreme increases (or otherwise improves the Offer Consideration); or
- Diatreme's voting power in Metallica increases to more than 50%.

In either of these circumstances, the Offer Period is automatically extended in accordance with section 624(2) of the Corporations Act so that it ends 14 days after the occurrence of the relevant event.

This is explained further in schedule 1 of the Bidder's Statement.

9.6 Effect of accepting the Offer

If you accept the Offer for your Metallica Shares, you will:

- give up your right to sell the accepted Metallica Shares to anyone else, including selling them on ASX or accepting any superior proposal that may emerge;
- give up your right to otherwise deal with the accepted Metallica Shares; and
- lose any rights attaching to the accepted Metallica Shares from the date of your acceptance.

The effect of acceptance of the Offer is set out in more detail in schedule 1 of the Bidder's Statement. You should read those provisions in full to understand the effect that acceptance will have on your ability to exercise the rights attaching to your Metallica Shares and the representations and warranties that you are deemed to give to Diatreme by accepting the Offer.

9.7 Your ability to withdraw your acceptance

If you accept the Offer for your Shares, you will have limited rights to withdraw your acceptance of the Offer. Under the Corporations Act, you may withdraw your acceptance of the Offer if Diatreme varies the Offer in a way that postpones, for more than one month, the time when Diatreme needs to meet its obligations under the Offer and the Offer is still subject to any Conditions at that time.

In such circumstances, you will be sent a notice at the relevant time explaining your rights to withdraw your acceptance of the Offer.

If the Conditions have not been satisfied or waived by Diatreme before the end of the Offer Period your acceptance will be voided and Diatreme must return your Metallica Shares to you.

9.8 Effect of an improvement in consideration on Shareholders who have already accepted the Offer

If Diatreme improves the Offer Consideration under its Offer, all Shareholders, regardless of whether or not they have accepted the Offer before that improvement in offer Consideration, will be entitled to receive that improved consideration.

9.9 Timing of payment to Shareholders who accept the Offer

You will generally receive the Offer Consideration for the Metallica Shares for which you have accepted the Offer on the earlier of:

- one month after the Offer is validly accepted by you or, if the Offer is subject to a defeating Condition, within one month after the Offer becomes unconditional; and
- 21 days after the end of the Offer Period, provided the Offer has become unconditional.

Details of the timing of the payment by Diatreme of the Offer Consideration is set out in detail in schedule 1 of the Bidder's Statement.

9.10 Compulsory Acquisition following takeover offer

Pursuant to Part 6A.1 Division 1 of the Corporations Act, Diatreme will be entitled to Compulsorily Acquire any outstanding Metallica Shares for which it has not received acceptances on the same terms as the Offer if, during or at the end of the Offer Period, Diatreme (taken together with its Associates):

- has a Relevant Interest in at least 90% (by number) of the Metallica Shares on issue at the relevant time; and
- has acquired at least 75% (by number) of Metallica Shares for which it has made an Offer

Shareholders should be aware that, if their Shares are Compulsorily Acquired, they are not likely to receive payment until at least one month after the Compulsory Acquisition notices are dispatched to them.

Diatreme has indicated in section 8 of the Bidder's Statement that it currently intends to proceed to Compulsory Acquisition of the outstanding Shares if it meets the required thresholds.

9.11 General Compulsory Acquisition

Even if Diatreme does not become entitled to Compulsorily Acquire Shares in accordance with Part 6A Division 1 of the Corporations Act, it may nevertheless become entitled to exercise general Compulsory Acquisition rights under Part 6A.2 Division 1 of the Corporations Act.

9.12 Foreign Metallica Shareholders

If you are a shareholder with an address outside Australia or its external territories, New Zealand, Cyprus, Germany or the United Kingdom, you may be classified as an 'Ineligible Foreign Shareholder' under the Offer. If you are an Ineligible Foreign Shareholder, you will not be entitled to receive Diatreme Shares as consideration for your Metallica Shares. Instead, the Diatreme Shares that would have been issued to you, will instead be issued to a nominee (along with the shares of all other Ineligible Foreign Shareholders and Small Parcel Holders) and the nominee will sell those shares and pay you your share of the net sale proceeds.

10 Additional Information

10.1 Directors' recommendation and intentions

Please refer to the Chairman's Letter set out above for details of the Directors' recommendation and intentions. Shareholders may wish to accept or reject depending on their perspectives.

10.2 Directors' interests in Metallica securities

As at the date of this Target's Statement, the Directors of Metallica had the following Relevant Interests in Metallica securities:

DIRECTOR	NUMBER
Theo Psaros	9,542,982 Shares
	8,000,000 MLMAS#
Stuart Bradley Sampson	534,063 Shares
	5,000,000 MLMAS#
Mark Bojanjac	213,860 Shares
	5,000,000 MLMAS#

Having an exercise price of $0.045 and an expiry date of 29 November 2028.

All descriptions of Directors' interests in securities and dealings in Shares which are contained in this Target's Statement are based entirely on representations which have been made by the individual Directors concerned.

10.3 Dealings of the Board in Metallica Shares

There have been no acquisitions or disposals of Metallica Shares by any Metallica Director in the four months ending on the day preceding the date of this Target's Statement.

10.4 Dealings of the Board in Diatreme shares

As at the date of this Target's Statement, the Directors of Metallica held no shares or other interests in Diatreme. In the four months immediately preceding 16 February 2024, being the date Diatreme announced its proposed Offer, no Director of Metallica provided or agreed to provide, or received or agreed to receive, consideration for any marketable securities of Diatreme or any Related Entity or Associate of Diatreme under a sale, purchase or agreement for sale or purchase of such securities.

10.5 Agreements or arrangements conditional upon the Offer

No Director of Metallica is party to any agreement or arrangement with any other person in connection with or conditional on the outcome of the Offer.

10.6 Interests of the Board in contracts entered into by Diatreme

Other than as described in this Target's Statement, no Director of Metallica has any interest in any contract entered into by Diatreme.

10.7 Benefits for retirement or loss of office

Except as set out in this Target's Statement, no benefit (other than a benefit permitted by section 200F or 200G of the Corporations Act) will or may be given to a Director of Metallica in connection with:

- their retirement from office in Metallica or a related body corporate of Metallica; or
- the transfer of the whole or any part of the undertaking or property of Metallica.

10.8 Potential impact of the offer on Metallica agreements

Members of the Metallica Group are parties to a number of contracts which contain counterparty change of control rights which could potentially be triggered in connection with the Offer. Should those rights in any such contract be triggered, this may, individually or in aggregate, have an adverse effect on the Metallica Group (and potentially, the Merged Group), depending on the relevant contract.

The following material contracts to which a member of the Metallica Group is a party contain change of control clauses which may be triggered by the Offer:

- The executive services agreement for Mr Psaros, dated 1 July 2022, includes provisions that give rise to rights and obligations on a change of control of Metallica. In particular, where there is a change of control in Metallica and it results in Mr Psaros' dismissal or a material reduction in his responsibility, in each case within 12 months, then Mr Psaros is entitled to be paid cash compensation equal to 6 months wages and any bonuses under the STI. Change of control is defined (broadly, based on ownership of in excess of 50% of total shares on issue). Satisfaction of the Minimum Acceptance Condition under the Offer would be a change of control for the purpose of Mr Psaros' executive services agreement; and
- The executive services agreement for Mr Scott Waddell, company secretary of Metallica, dated 1 September 2021 includes a provision that entitles Mr Waddell to a termination payment equal to three months (of salary) if there is a change of control event. A change of control event is defined by reference to the board composition and shareholder ownership. For current purposes, the definition would be satisfied if any shareholder owns greater than 30% of the Metallica Shares on issue. No other officers of Metallica have provisions that give rise to rights or obligations on a change of control of Metallica.

10.9 Litigation

Except as previously disclosed to ASX, there is no other current litigation against Metallica, and the Directors have no knowledge of any potential litigation which is material in the context of Metallica.

10.10 Metallica capital structure

As at the date of this Target's Statement, the following Metallica securities are on issue:

CLASS OF SECURITY	NUMBER
Ordinary shares	959,923,922
Options – MLMAS	33,000,000
Performance rights	Nil

Metallica has no other securities on issue and has no agreement to issue any securities or Shares as at the date of this Target's Statement.

10.11 Substantial holders

As at the date of this Target's Statement, the following persons had notified ASX that they had voting power of 5% or more of Metallica Shares on issue:

NAME	NUMBER OF METALLICA SHARES IN WHICH THEY HAVE VOTING POWER	% OF METALLICA SHARES
Ilwella Pty Ltd	231,451,245	24.11%
Sibelco Asia Pacific Pty Ltd	157,024,617#	16.36%
SPARTA AG	92,046,350	9.56%

Since the lodgement of its last substantial holder notice, Sibelco has purchased more Metallica Shares (through various nominees).

10.12 Financial information

Copies of Metallica's Annual Reports and its announcements to the market may be obtained from ASX's website (www.asx.com.au, code 'MLM').

10.13 Historical trading prices

As at 22 April 2024:

- the last recorded trading price of the Metallica Shares was $0.024; and
- the lowest and highest closing prices of the Metallica Shares during the preceding three months were $0.020 and $0.029.

As at 15 February 2024, being the last trading date before the Offer was announced:

- the last recorded trading price of the Metallica Shares was $0.024;
- the one-month VWAP of the Metallica Shares was $0.0221;
- the three-month VWAP of the Metallica Shares was $0.0252; and
- the lowest and highest closing prices of the Metallica Shares during the preceding three months were $0.020 and $0.029, respectively.

10.14 Taxation considerations for Shareholders

Acceptance of the Offer by you is likely to have tax consequences. You may be eligible for a capital gain or loss if you accept the Offer. The tax consequences for you will depend on your individual circumstances.

Section 11 of the Bidder's Statement sets out a general overview of the Australian tax implications of a Shareholder accepting the Offer and disposing of their Shares to Diatreme. You should not rely on it as advice on your own affairs. It does not deal with the position of all Shareholders. You should seek your own independent financial and taxation advice, which takes into account your personal circumstances, before making a decision as to whether or not to accept the Offer for your Shares.

10.15 Material change in financial position of Metallica

Metallica's last published financial statements are for the half year ended 31 December 2023, as announced to ASX on 23 February 2024. Except as disclosed in this Target's Statement and in any announcement made by Metallica to ASX since that time, your Directors are not aware of any material change to the financial position of Metallica since 31 December 2023.

10.16 Disclaimers regarding responsibility

Each person named above as having given consent to the inclusion of a statement in this Target's Statement (or who is otherwise named in this Target's Statement as acting in a professional capacity for Metallica in relation to the Offer):

- does not make, or purport to make, any statement in this Target's Statement or any statement on which a statement in this Target's Statement is based other than, in the case of a person referred to above as having given their consent to the inclusion of a statement, a statement included in this Target's Statement with the consent of that person; and
- to the maximum extent permitted by law, expressly disclaims and takes no responsibility for any part of this Target's Statement, other than, in the case of a person referred to above as having given their consent to the inclusion of a statement, any statement or report which has been included in this Target's Statement with the consent of that party.

10.17 Legislative instrument relief – reference to statements

ASIC has published various legislative instruments providing for modifications and exemptions that apply generally to all persons, including Metallica, in relation to the operation of Chapter 6 of the Corporations Act. Metallica may rely on any of these relief instruments.

10.18 No other material information

This Target's Statement is required to include all the information that Shareholders and their professional advisers would reasonably require to make an informed assessment whether to accept the Offer, but only:

- to the extent to which it is reasonable for Shareholders and their professional advisers to expect to find such information in this Target's Statement; and
- if the information is known to any of the Directors.

The Directors are of the opinion that the information that Shareholders and their professional advisers would reasonably require to make an informed assessment whether to accept the Offer is the information:

- contained in the Bidder's Statement;
- contained in Metallica's releases to the ASX prior to the date of this Target's Statement; and
- contained or referred to in this Target's Statement.

Copies of documents lodged with ASX by Metallica may be obtained from ASX's website (www.asx.com.au) using the code 'MLM', or you may obtain a copy free of charge during the Offer Period by writing to Metallica (Attention: Company Secretary, GPO Box 122, Brisbane QLD 4001).

10.19 Consents

Baker McKenzie has consented to being named in this Target's Statement as the legal adviser to Metallica and has not withdrawn that consent at the date of this Target's Statement.

Zenith Advisory Services Pty Ltd has consented to being named in this Target's Statement as the financial adviser to Metallica and has not withdrawn that consent at the date of this Target's Statement.

Link Market Services Limited has consented to being named in this Target's Statement as Metallica's share registry and has not withdrawn that consent at the date of this Target's Statement.

Each person named in this Section 7.19 of this Target's Statement as having given its consent to the inclusion of a statement or to being named in this Target's Statement:

- has not authorised or caused the issue of this Target's Statement;
- does not make, or purport to make, any statement in this Target's Statement or any statement on which a statement in this Target's Statement is based other than a statement included in this Target's Statement with the consent of that person; and
- to the maximum extent permitted by law, expressly disclaims and takes no responsibility for any part of this Target's Statement, other than a reference to its name and, in the case of a person referred to above as having given their consent to the inclusion of a statement, any statement or report which has been included in this Target's Statement with the consent of that party.

In addition, as permitted by the *ASIC Corporations (Consents to Statements) Instrument 2016/72*, this Target Statement's contains trading data sourced from the ASX and Bloomberg provided without their consent.

10.20 Approval of this Target's Statement

Signed for and on behalf of Metallica Minerals Limited by Theo Psaros who is authorised so to sign pursuant to a resolution passed at a meeting of Directors held on 24 April 2024.

Theo Psaros
Executive Chairman

11 Definitions and Interpretation

11.1 Definitions

In this Target's Statement the following words have these meanings unless the contrary intention appears or the context otherwise requires:

$ or dollar	Australian dollars.
ASIC	Australian Securities and Investments Commission.
Associate	has the meaning given to that term for the purposes of Chapter 6 of the Corporations Act (as modified by ASIC from time to time).
ASX	ASX Limited (ABN 98 008 624 691) or, as the context requires, the financial market known as the "Australian Securities Exchange" operated by that entity.
ASX Listing Rules or **Listing Rules**	the official listing rules of the ASX as amended or varied from time to time.
ASX Settlement Operating Rules	the rules of the ASX Settlement Corporation as amended or varied from time to time.
ASX Release	an announcement to the ASX on behalf of a listed entity.
Bidder's Statement	the bidder's statement dated 11 April 2024 relating to the Offer.
Board	the board of directors of Metallica.
Cape Silica Joint Venture	has the definition given to that term in the Bidder's Statement.
Clermont Tenement	EPM 17968.
Corporations Act	the *Corporations Act 2001* (Cth).
Compulsory Acquisition or Compulsorily Acquire	the compulsory acquisition process in respect of the Metallica Shares held by Metallica Shareholders that do not accept the Offer under Part 6A.1 and/or Part 6A.2 of the Corporations Act that is expected to occur after successful completion of the Offer (as described in Section 6.10).
Conditions	each condition of the Offer set out in schedule 2 of the Bidder's Statement.
Conflicted Shareholders	has the meaning given to that term in Section 5.
Control or **Controlled**	has the meaning given in section 50AA of the Corporations Act.
CFS Project or **Project**	the Cape Flattery Silica Sand Project.
DFS	the definitive feasibility study for the CFS Project as released by Metallica to the ASX on 17 July 2023.
Directors	the members of the Board.
Diatreme	Diatreme Resources Limited (ACN 061 267 061).
Diatreme Group	Diatreme and each of its Subsidiaries and, where the context requires, Metallica and each of its Subsidiaries.
Diatreme Scoping Study	the scoping study announcement to the market by Diatreme on 14 June 2023 (see Diatreme ASX Release titled "*Positive Scoping Study for Northern Silica Project*").
EBITDA	earnings before interest, tax, depreciation and amortisation.

EIS	'environmental impact statement' as defined in section 2.8.
Exploration Results	has the meaning given in the JORC Code 2012.
First Supplementary Bidder's Statement	the first supplementary bidder's statement dated 10 April 2024 relating to the Offer.
HES	'high ecological significance' as denoted by the Queensland Department of Environment, Science and Innovation.
HPPS	high-purity silica sand.
Independent Expert	Advisory Partner Connect Pty Ltd.
Independent Expert's Report	the report prepared by the Independent Valuation Expert located in Annexure 2 of this Target's Statement.
Ineligible Foreign Shareholder	has the meaning given to that term in the Bidder's Statement.
IRR	internal rate of return.
JORC Code 2012	the 2012 edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" prepared by the JORC Reserves Committee of the Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.
km	kilometres.
km^2	kilometres squared.
Management	the key management personnel of Metallica.
Merged Group	the group of companies resulting from the combination of the Diatreme Group and the Metallica Group should the Offer be successful.
Metallica or Company or **MLM**	Metallica Minerals Limited (ACN 076 696 092).
Metallica Group	Metallica and its Subsidiaries.
Mineral Resources	has the meaning given in the JORC Code 2012.
Mitsubishi	Cape Flattery Silica Mines Pty Ltd (ACN 000 586 098).
Metallica Shareholder or **Shareholder**	a fully paid ordinary share in the capital of Metallica and all rights attaching to those shares.
MLM Shareholder or **Metallica Shareholder**	person registered in the register of members of Metallica as a holder of one or more Shares.
MSES	'matters of state environmental significance' as defined in schedule 2 of the *Environmental Offsets Regulation 2014* (Qld).
Mt	million tonnes
Mtpa	million tonnes per annum
m^2	metres squared.
NPV	net present value.
Northern Silica Project	Diatreme's silica sand project located in the Hope Vale Aboriginal Shire near Cape Flattery, Far North Queensland.

Northern Silica Project IAS	the initial advice statement for the Northern Silica Project as made publicly available at https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0022/86611/northern-silica-project-ias.PDF.
Offer	the offers by Diatreme for all of the Shares in Diatreme dated 11 April 2024 made under the Bidder's Statement.
Offer Period	the period during which the Offer remains open for acceptance in accordance with the terms set out in the Bidder's Statement.
Offer Price or **Offer Consideration**	the consideration under the Offer for each of the Shares to which the Offer applies, being 1.3319 fully paid ordinary shares in Diatreme per Metallica Share as at the date of this Target's Statement.
OGV	Ocean Going Vessels.
Ore Reserves	has the meaning given in the JORC Code 2012.
PAEMAC Report	the report prepared by PAEMAC titled "*Northern Silica Sand Project – Rock Wharf Construction and Port of Cape Flattery Jetty Extension*", annexed as Appendix D in the Independent Expert's Report.
Partial User Agreement	the agreement between Far North Queensland Ports Corporation and Diatreme
Port Handbook	has the meaning given to that term in section 2.7
Ports North	Far North Queensland Ports Corporation Limited (ACN 131 836 014)
ppm	parts per million.
Related Entity	has the meaning given to that term in section 9 of the Corporations Act.
Relevant Interests	has the meaning given in sections 608 and 609 of the Corporations Act.
SiO_2	Silicon dioxide.
Small Parcel Holder	has the meaning given to that term in the Bidder's Statement.
Standstill Condition	means the defeating condition set out in paragraph 3 of schedule 2 of the Bidder's Statement.
Subsidiary	has the meaning given in section 9 of the Corporations Act, provided that an entity will also be taken to be a Subsidiary of another entity if it is Controlled by that entity and, without limitation: (a) a trust may be a Subsidiary, for the purposes of which a unit or other beneficial interest will be regarded as a share; (b) an entity may be a Subsidiary of a trust if it would have been a Subsidiary if that trust were a corporation; and (c) an entity will also be deemed to be a Subsidiary of an entity if that entity is required by the accounting standards to be consolidated with that entity.
State Government Sublease	the sublease between Ports North (as sublessor) and Mitsubishi (as sublessee) dated 27 March 2018.
Sustainable Ports Act	the *Sustainable Ports Development Act 2015* (Qld).
Target's Statement	this document, being the statement of Metallica pursuant to the Corporations Act relating to the Offer.
Updated DFS	the revised definitive feasibility study for the CFS Project as released by Metallica to the ASX on 15 November 2023.

11.2 General Interpretation

The following rules of interpretation apply unless the contrary intention appears or the context requires otherwise:

(a) a reference to time is a reference to Australian Eastern Standard Time;

(b) headings are for convenience only and do not affect interpretation;

(c) the singular includes the plural and conversely;

(d) a reference to a section is to a section of this Target's Statement;

(e) a gender includes all genders;

(f) where a word or phrase is defined, its other grammatical forms have a corresponding meaning;

(g) $, dollar or cents is a reference to the lawful currency in Australia, unless otherwise stated;

(h) a reference to a person includes a body corporate, an unincorporated body or other entity and conversely;

(i) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including persons taking by novation) and assigns;

(j) a reference to any legislation or to any provision of any legislation includes any modification or re-enactment of it, any legislative provision substituted for it and all regulations and statutory instruments issued under it;

(k) a reference to any instrument or document includes any variation or replacement of it;

(l) a term not specifically defined in this Target's Statement has the meaning given to it (if any) in the Corporations Act or the ASX Settlement Operating Rules, as the case may be;

(m) a reference to a right or obligation of any two or more persons confers that right, or imposes that obligation, as the case may be, jointly and individually; and

(n) the words 'include', 'including', 'for example' or 'such as' are not used as, nor are they to be interpreted as, words of limitation, and, when introducing an example, do not limit the meaning of the words to which the example relates to that example or examples of a similar kind.

12 Corporate Directory

Directors

Theo Psaros (Executive Chairman)
Stuart Bradley Sampson (Non-Executive Director)
Mark Bojanjac (Non-Executive Director)

Company Secretary

Andrew Scott Waddell

Share Registry

Link Market Services Limited
Level 21, 10 Eagle Street
Brisbane QLD 4000
Phone: 1300 554 474

Registered Office

Level 1, North Tower
Terrace Office Park
527 Gregory Terrace
Fortitude Valley QLD 4006

Legal Advisers

Baker McKenzie
Level 32, Riparian Plaza
71 Eagle Street
Brisbane QLD 4000

Financial Advisers

Zenith Advisory Services Pty Ltd

Website

www.metallicaminerals.com.au

Annexure 1
MLM's announcements to ASX

Annexure 1
MLM's announcements to ASX

19/04/2024	Target's Statement to be released next week – Take No Action
12/04/2024	Dispatch of Bidder's Statement to Metallica Shareholders
13/03/2024	Brisbane Mining Conference Investor Presentation
27/02/2024	EXPIRY OF LISTED OPTIONS (ASX CODE – MLMOB)
27/02/2024	Update in relation to takeover bid for MLM
26/02/2024	Update on preliminary conditions to takeover bid for MLM
23/02/2024	Half Year Accounts
23/02/2024	Update in relation to takeover bid for MLM
19/02/2024	Gold Exploration Target Established for Leo Grande Project
19/02/2024	Diatreme Intention to make a takeover Offer for Metallica
16/02/2024	Conditional intention to make a takeover bid for MLM
12/02/2024	Cape Flattery Silica Sand Project Update
30/01/2024	Change of Director's Interest Notice x 3
22/01/2024	Quarterly Activities/Appendix 5B Cash Flow Report
15/12/2023	CFS Project declared a Coordinated Project
12/12/2023	Cape Flattery Silica signs MOU with Eternal Asia
11/12/2023	Drilling Commences at Leo Grande Graphite / Gold Prospect
29/11/2023	Notification regarding unquoted securities – MLM
22/11/2023	Results of Annual General Meeting
22/11/2023	Presentation – Annual General Meeting and Webinar
20/11/2023	Metallica Minerals webinar and update
15/11/2023	Cape Flattery Silica Updated DFS Supports 3Mtpa Sales
31/10/2023	Supplementary Notice of Annual General Meeting
26/10/2023	Quarterly Activities/Appendix 5B Cash Flow Report
12/10/2023	Presentation to the Brisbane Mining Club
11/10/2023	Notice of Annual General Meeting/Proxy Form
11/10/2023	Appendix 4G
11/10/2023	Corporate Governance Statement – 2023

Annexure 2
Independent Expert's Report

Metallica Minerals

Independent Expert's Report

24 April 2024

Financial Services Guide

About us

Advisory Partner Connect Pty Ltd **("Advisory Partner")** a Corporate Authorised Representative of AP Lloyds Pty Ltd ACN 643 090 359 Australian Financial Services Licence **("AFSL")** 526061 has been engaged by Metallica Minerals Limited (ASX:MLM) **("Metallica")** or (**"the Company")** to provide financial product advice in the form of an independent expert report **("the Report")** to express our opinion whether the offer is fair and reasonable **("Offer")**. Our Report sets out our opinion as to the Fair Market Value of the shares in Metallica. The Corporations Act 2001 (Cth) requires us to provide this Financial Services Guide **("FSG")** in connection with the attached Report prepared for Metallica. You are not the party who engaged us to prepare this Report and we are not acting for any person other than Metallica. This FSG provides important information designed to assist Shareholders in forming their views of the Offer and in understanding any general financial advice provided by Advisory Partner in this Report. Our Report is not intended to comprise personal retail financial product advice to retail investors or market-related advice to retail investors. This FSG contains information about our engagement by the directors of Metallica to prepare this Report in connection with the Offer, the financial services we are authorised to provide, the remuneration we (and any other relevant parties) may receive in connection with the Engagement, and details of our internal and external dispute resolution systems and how these may be accessed.

Financial services we are authorised to provide

Advisory Partner is a Corporate Authorised Representative of AP Lloyds Pty Ltd, the holder of Australian Financial Services Licence number 526061, is responsible to you for the services provided under this FSG. As a Corporate Authorised Representative the Australian Financial Services Licence authorises us to provide the following services to both retail and wholesale clients, financial product advice in relation to securities, fixed income and derivatives.

General financial product advice

This Report contains only general financial product advice. It was prepared without taking into account your personal objectives, financial situation or needs. Where the advice relates to the application for or acquisition of a financial product, you should also obtain and read carefully the relevant offer document or explanatory memorandum provided by the issuer or seller of the financial product before making a decision regarding the application for or acquisition of the financial product.

Remuneration, commissions and other benefits

Advisory Partner charges fees for its services and will receive a fee of $55,000 to $65,000 (excluding GST) for its work on this Report. These fees have been agreed on, and will be paid solely by Metallica, which has engaged our services for the purpose of providing this Report. Advisory Partner may seek reimbursement of any out-of-pocket expenses incurred in providing these services. Our advisers are directors and employees of Advisory Partner who are paid salaries and dividends by Advisory Partner and may also receive bonuses and other benefits from Advisory Partner. Our advisers may alternatively be paid by means of commission determined by a percentage of revenue written by the adviser.

Associations and relationships

Other than as set out in this FSG or this Report, Advisory Partner has no association or relationship with any person who might reasonably be expected to be capable of influencing them in providing advice under the Engagement. Advisory Partner, its officers and employees and other related parties have not and will not receive, whether directly or indirectly, any commission, fees, or benefits, except for the fees to be paid to Advisory Partner for services rendered in producing this Report. Advisory Partner, its directors and employees do not have an interest in securities, directly or indirectly, which are the subject of this Report. Advisory Partner may perform paid services in the ordinary course of business for entities, which are the subject of this Report.

Risks associated with our advice

This Advisory Partner advice is provided in connection with the attached Report relating to the Offer. The Report comprises general product advice and does not comprise personal retail financial product advice to retail investors or market-related advice to retail investors. The Report is an expression of Advisory Partner's opinion as to whether the Offer is fair and reasonable. However, Advisory Partner's opinion should not be construed as a recommendation as to whether or not to approve the Proposed Transaction. Approval or rejection of the Offer is a matter for individual Shareholders based on their own circumstances, including risk profile, liquidity preference, investment strategy, portfolio structure, and tax position. Shareholders who are in any doubt as to the action they should take in relation to the Offer should consult their own independent professional advisers. Further information on the risks, assumptions and qualifications associated with the advice is contained within the Report.

Compensation arrangements

The law requires Advisory Partner to have arrangements in place to compensate certain persons for loss or damage they suffer from certain breaches of the Corporations Act by Advisory Partner or its representatives. Advisory Partner has internal compensation arrangements as well as professional indemnity insurance that satisfy these requirements.

Complaints

Advisory Partner is a Corporate Authorised Representative of AP Lloyds Pty Ltd, they are required to have an internal complaints-handling mechanism. All complaints can be addressed to us at Level 18, 324Queen St, Brisbane QLD 4000. You may contact us on **T** +61 7 3106 3399 or **F** +61 7 3054 0438, E:admin@advisorypartner.com.au. If AP Lloyds Pty Ltd are not able to resolve your complaint to your satisfaction within 30 days of first lodging it with them, you are entitled to have your matter referred to the Australian Financial Complaints Authority (AFCA). You will not be charged for using the AFCA service. To contact the AFCA: Tel: 1800 931 678 or make a complaint at https://www.afca.org.au/make-a-complaint.

Privacy & use of information

We do not collect personal information on individual clients and are bound by the Advisory Partner Privacy Policy in the way that it governs personal information collected on clients. If you have any questions on privacy, please see our privacy policy on our website.

24 April 2024

The Directors
Metallica Minerals Limited
Level 1, North Tower
527 Gregory Terrace
Fortitude Valley QLD 4006

Dear Sirs

INDEPENDENT EXPERT'S REPORT – OFFER TO PURCHASE OF METALLICA MINERALS LIMITED BY DIATREME RESOURCES

Introduction

The directors of Metallica Minerals (ASX: MLM) **("Metallica" or the "Company")** have requested Advisory Partner Connect Pty Ltd **("Advisory Partner")** to prepare an Independent Expert Report **("IER")** to the unrelated shareholders of MLM **(the "Shareholders")**, setting out our opinion as to whether the offer by Diatreme Resources (ASX:DRX) **("Diatreme")**, is fair and reasonable.

The offer is to purchase shares in Metallica funded via Diatreme shares, Metallica shareholders will receive 1.3319 fully paid ordinary shares in Diatreme for every one (1) ordinary share in Metallica on the record date (the "**Offer**" or "**Transaction**").

There is a minimum acceptance condition of 50.1%.

Metallica has engaged Advisory Partner to provide an Independent Expert Report (the "**Report**" or **"IER"**), which will be provided to the Shareholders, to assist the Directors of Metallica in providing the Shareholders with sufficient information to make their decision as to whether to accept the offer or not.

Summary Opinion

In our opinion, the Offer is not fair and not reasonable for the Shareholders of Metallica.

Fairness

In forming our opinion as to the fairness of the Offer, we have valued each component of the proposal being the fair market value of a Metallica share relative to the scrip offer provided by Diatreme.

Table 1: Fair Value

Fair Value	Unit	Low Value	High Value
Fair Value of Metallica share on a controlling basis	$	0.223	0.278
Fair Value of combined entity post-transaction (minority basis)	$	0.061	0.076
Premium / (Discount)	%	**-73%**	**-72%**

Source: AP Analysis

Advisory Partner assessed the fair market value of Metallica shares, on a control basis, is between **$0.223 and $0.278 per share**. By comparison, the assessed value of the combined entity on a minority basis is $0.061 to $0.076 per share. As demonstrated above, the value of the combined entity per share is lower than the assessed value of a Metallica share and as a result, the Offer is considered not fair for Metallica Shareholders.

We note that we have valued the MLM shares on a controlling basis, which allows for a 30% control premium, and the Offer represents a discount to below the assessed value of more than 70%.

Reasonableness
We deem the offer to be not reasonable to shareholders of Metallica as we consider the disadvantages to outweigh the advantages of the offer. To assist the Shareholders in their decision-making process we have summarized the following:

- The likely advantages and disadvantages associated with the Offer; and
- Alternatives, including the position of Shareholders if the Offer does not proceed.

Shareholders of Metallica should read the full Report, where matters relevant to shareholders are explained in more detail.

Advantages of Approving the Offer
Set out below is a summary of the key advantages to the Shareholders of accepting the Offer.

- **Liquidity of shares**
  Metallica shareholders currently face illiquidity in the trading of their shares. On a typical trading day, Metallica shares are thinly traded and have a wide bid-ask spread. As a result, it is difficult to sell shares in Metallica. The transaction may improve liquidity in the shares of the combined entity by increasing the market capitalisation and outstanding share count.

- **Economies of Scale**
  The combined entity may provide operational improvements for the mines as both companies hold an interest in mines within the same vicinity.

Disadvantages

- **Dilution of Shares**
  As both companies have projects which are pre-development, shareholders are at risk of future capital raisings which may dilute minority shareholders. The non-associated shareholders (excludes common shareholders) of Metallica Minerals and Diatreme Resources account for 49.87% of total shares in Metallica Minerals. This takeover offer sees that decrease to 12.73% of total shares in Diatreme. Diatreme's projects hold 513 Mt of resources, while Metallica holds 47 Mt of reserves at their CFS project according to the feasibility study. As such, Diatreme will require substantial efforts to acquire funding for the projects relative to Metallica, which are likely to be through the issuance of new ordinary shares.

- **Voting Power**
  Diatreme has 3.7bn shares outstanding pre-transaction and will issue 1.278bn shares to Metallica shareholders for the transaction. As such, Metallica shareholders will represent 12.73% of total shares post-transaction which is a minor representation in voting power relative to their prior 100% voting power in Metallica Minerals Limited.

- **Project Risk**
  Diatreme's Northern Silica projects are at scoping study stage. This early stage of development has not been proven to be economically viable by an independent technical expert and may face unforeseeable factors in order to develop the project in terms of operational costs, environmental requirements, capital expenditures, and other variables which may impact the value of the mine. By accepting the offer, Metallica shareholders will be exposed to these risks which may determine whether or not these mines are viable and whether they can be funded.

Other Considerations

- **Common Shareholders**
  Metallica and Diatreme have common shareholders. Ilwella Pty. Ltd ("Ilwella") and SCR-Sibelco N.V. (N.V.) are the top two shareholders of both Diatreme and Metallica Minerals. Sibelco publicly backed the takeover offer from Diatreme. Furthermore, Delphi Unternehmensberatung AG (Delphi AG) controls Sparta AG. In particular, Delphi AG owns 100% of VVBeteiligungen AG, a majority shareholder of Deutsche Balaton AG which has a majority ownership of Sparta AG. With Metallica's top three shareholders being Ilwella, Sibelco and Sparta AG this takeover suggests limited dilution for major shareholders who continue to retain a significant ownership of Diatreme post-takeover of Metallica.

- **Mitsubishi (CFSM) Sublease**
  Diatreme is required to build significant port infrastructure near CFSM's operations and wishes to utilise the existing wharf. The Sublease between Far North Queensland Ports Corporation Ltd and Cape Flattery Silica Mines Pty Ltd (CFSM) gives CFSM certain rights that may make this difficult both during operations and construction. However, PAEMAC's report states that the construction of Diatreme's port infrastructure will cause unavoidable disturbances to Mitsubishi's operations. As such, it gives CFSM reasons to not allow Diatreme to access the existing infrastructure or proceed with the planned construction activities. This would impact Diatreme's ability to export.

Shareholder circumstances
Advisory Partner has not considered the effect of the Offer on the particular circumstances of individual Shareholders. Some individual Shareholders may place a different emphasis on various aspects of Proposed Transaction from that adopted in this Report. Accordingly, individuals may reach different conclusions as to whether or not the Offer is in their individual best interests. The decision of an individual Shareholder in relation to the Offer may be influenced by their particular circumstances (including their taxation position) and accordingly, Shareholders are advised to seek their own independent advice.

Other matters
This Report has been requested by the Metallica Directors to assist the Shareholders in their decision to accept or reject the Proposed Transaction.

This Report should not be used for any other purpose and Advisory Partner does not accept any responsibility for its use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of our Report, in whole or in part, should be reproduced without our written consent, as to the form and context in which it may appear.

Advisory Partner acknowledges that this Report may be lodged by the Directors with the ASX.

Conclusion
Based on the above, we have concluded that the Offer is "not fair" as the offer amount is below the fair value of a Metallica share. Additionally, we have considered the transaction as "not reasonable" because the disadvantages outweigh the advantages.

This opinion should be read in conjunction with the full text of this report which sets out our findings.

Yours faithfully

Brett Plant

Brett Plant
Director

Table of Contents

1.0 Glossary of Terms

Table 2: Glossary of Terms

Term	Meaning
Advisory Partner or we or AP or our	Advisory Partner Connect Pty Ltd
ASIC	Australian Securities and Investment Commission
ASX	Australian Securities Exchange
Bid-Ask Spread	A bid-ask spread is the amount by which the ask price exceeds the bid price for an asset in the market.
Control Premium	An allowance made for the premium for control given the strategic benefit that a controlling interest would provide
Corporations Act	Corporations Act 2001
Diatreme or DRX	Diatreme Resources Limited (ASX:DRX)
Dilution	Dilution refers to the reduction in the percentage of existing shareholders' ownership in a company when it issues new shares of stock.
EBITDA	Earnings before Interest, Tax, Depreciation and Amortisation
EBITDA Multiple	The ratio Enterprise Value: Earnings Before Interest Tax Depreciation and Amortisation
Engagement	Our engagement by the Directors of Metallica to prepare this Report in connection with the Offer.
Enterprise Value (EV)	The total value of the business and is equal to Debt + Equity
FOS	Financial Ombudsman Service
Free Float	The shares of a company that can be publicly traded and are not restricted (ie., held by insiders).
FSG	Financial Services Guide
Future Maintainable Earnings Method	The capitalisation of estimated future maintainable earnings by an appropriate multiple.
FY	Financial Year
HY	Half Year
JORC Code	Joint Ore Reserves Committee (JORC) is a classification system for the public reporting of exploration results, mineral resources and ore reserves.
Liquidity	The ease in which an asset or security can be converted into ready cash without affecting its market price.
LTM	Last Twelve Months
Net Debt	Current Portion of Debt + Non-Current Portion of Debt - Cash and Cash Equivalents
NACE Code	Nomenclature of Economic Activities (NACE) is the European statistical classification of economic activities
NAICS Code	North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments
NPV	Net Present Value
NRV	Net Realisable Value
Report	This independent expert's report
RG 111	Regulatory Guide 111 - Content of Expert Reports
Statistical Outlier	An extremely high or extremely low data point relative to the nearest data point and the rest of the neighbouring co-existing values in a dataset.
Surplus Assets	Surplus assets are assets that form part of a business entity or company but do not contribute to the earnings or cash flow generation capacity of that business or company.

Source: AP Analysis

2.0 Outline of the Offer

2.1 Introduction and Background

Metallica Minerals Limited (ASX:MLM) **("MLM or Metallica")** is a resource development company with interests in Silica sand and Copper Gold projects in Queensland. Metallica has a proposed Silica Sand mine located in the Cape Flattery Region of Far North Queensland, adjacent to Mitsubishi's Cape Flattery Silica Sand Mines (CFSM). Another mining exploration company, Diatreme Resources Limited (ASX:DRX) **("DRX or Diatreme")** is an emerging producer of mineral and silica sands. This company also has a proposed project in the same region as Metallica's Silica Sand Project.

Diatreme announced a takeover intention of Metallica on the 16th of February 2024 for all ordinary shares in MLM. Diatreme released a bidder statement on the 28th of March detailing the conditions to the offer. The offer will see Metallica shareholders receive 1.3319 fully paid ordinary shares in Diatreme for every (1) ordinary share in Metallica held by shareholders at the offer date.

Diatreme's bid highlights a premium of 22.08% based on the closing price of both companies on the 15th of February 2024, where DRX's closing price was $0.022 and MLM's closing price was $0.024. Along with this, Diatreme has several conditions of the Offer, which include a 50.1% minimum acceptance condition along with Diatreme's shareholders approving the acquisition of Metallica for the purposes of ASX Listing Rule 10.1.

2.2 Key steps and Conditions of the Offer

The Offer has the following elements:

- Metallica shareholders will be offered 1.3319 ordinary shares in Diatreme for each (1) ordinary share in Metallica.
- Diatreme Shareholder Approval Condition:
  - the approval of Diatreme Shareholders for the purpose of Listing Rule 10.1 for the acquisition of the Metallica Shares held by Ilwella and Sibelco (and issue of the Offer Consideration for each Metallica Share held by Ilwella and Sibelco, to Ilwella and Sibelco as consideration under the Offer) **(Listing Rule 10.1 Approval)**
  - a waiver from ASX to permit the acquisition by Diatreme of the Metallica Shares held by Ilwella Pty Ltd and Sibelco Asia Pacific Pty Ltd (and issue of the Offer Consideration for each Metallica Share held by Ilwella and Sibelco, to Ilwella and Sibelco as consideration under the Offer) without first obtaining the Listing Rule 10.1 Approval; or
  - a notice or confirmation from ASX that Diatreme is not required to obtain the Listing Rule 10.1 Approval,
- The Shareholders need to decide at or before the end of the Offer Period whether to accept the offer or not;
- Diatreme will include as a defeating condition to the proposed takeover bid, a condition that Diatreme obtains either the written consent or waiver from Metallica to the acquisition of Metallica Shares under the proposed takeover bid or the Takeovers Panel makes orders and declarations that Diatreme is no longer restrained from acquiring Metallica Shares under the Offer by the terms of the Confidentiality Deed; and
- There is a minimum acceptance condition of 50.1%.

2.3 Outcome of the Proposed Transaction

Should shareholders of Metallica accept the Offer, the company will no longer trade on the ASX and be owned by Diatreme.

The outcome of the proposed transaction would see Metallica Shareholders be diluted, from majority ownership from the outstanding shares in Metallica, to a minority stake of 25% in Diatreme.

Table 3: Ownership Structure of Proposed Transaction

Company	DRX Issued Shares (Post-takeover)	Percentage of Ordinary Capital Post Takeover
Current Shareholders of Diatreme Resources (including Outstanding Options)	3,796,425,793	74.81%
Current Shareholders of Metallica Minerals (including Outstanding Options)	1,278,522,672	25.19%
Enlarged Company	**5,074,948,465**	**100.00%**

Source: AP Analysis

At present, Ilwella Pty. Ltd., SCR-Sibelco N.V. and Delphi Unternehmensberatung AG are common shareholders of both companies.

The Non-associated shareholders initially held 49.9% of Metallica Minerals, while the top three common shareholders, Ilwella, Sibelco and Sparta AG/ Delphi AG owned 50.1%. However, after the takeover, the Non-associated shareholders are diluted to 12.73% while the ownership of the top two shareholders remain at 41%.

The table below shows the top 10 shareholders if the Proposed transaction is successful.

Table 4: Top 10 shareholders of Proposed transaction

Post Takeover DRX Shareholder Name	Number of Ordinary Shares Held	Percentage Held of Issued Ordinary Capital
Ilwella Pty. Ltd.	1,092,947,033	21.82%
SCR-Sibelco N.V.	924,186,994	18.45%
DELPHI Unternehmensberatung AG / Sparta AG	333,468,889	6.66%
Yufeng Zhuang	151,841,819	3.03%
2invest AG	130,434,783	2.60%
Chenfei Zhuang	91,700,000	1.83%
Wu Jie	87,171,308	1.74%
Vw Pty. Ltd.	65,500,001	1.31%
Chenxia Zhou	62,500,000	1.25%
Andrew Tsang	53,177,747	1.06%
Top 10 Post Takeover Shareholders	**2,939,750,827**	**58.70%**
Other Shareholders	2,068,530,971	41.30%
Total Issued Shares	**5,008,281,798**	**100.00%**
Outstanding Options & Performance Rights	66,666,667	
Total Diluted Shares	**5,074,948,465**	

Source: AP Analysis

3.0 Purpose, Scope, and Basis of Assessment

3.1 Legislative requirements

Section 640 of the Corporations Law requires an expert opinion to be provided where the bidder is connected with the target company.

Section 640 provides that if:

(a) the bidder's voting power in the target is 30% or more; or
(b) for a bidder who is, or includes, an individual — the bidder is a director of the target; or
(c) for a bidder who is, or includes, a body corporate — a director of the bidder is a director of target.

A target statement given in accordance with subsection 638 must include, or be accompanied by, a report by an expert that states whether, in the expert's opinion, the takeover offer is fair and reasonable and gives the reasons for forming that opinion.'

3.2 Purpose of the report

Advisory Partner has been appointed by the Directors to prepare this report to satisfy the requirement for the preparation of an IER as described above. This report is intended to accompany the target statement to be provided by the Directors to the Shareholders entitled to vote on the Offer ("**Target Statement**").

This report accompanies the Target Statement, required to be provided to the Shareholders, and has been prepared to assist the Directors in fulfilling their obligation to provide shareholders with full and proper disclosure to enable them to assess the merit of the Offer.

This report should not be used for any other purpose, and we do not accept any responsibility for its use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of our report, in whole or in part, should be reproduced without our written consent, as to the form and context in which it may appear.

For the purposes of our opinion, the term "fair market value" is defined as the price that would be negotiated in an open and unrestricted market between a knowledgeable, willing, but not anxious purchaser, and a knowledgeable, willing, but not anxious vendor, acting at arm's length.

3.3 Scope

The scope of the procedures we have undertaken in forming our opinion on whether the Offer is fair and reasonable for Shareholders is limited to those procedures we believe are required in order to form our opinion. Our procedures, in the preparation of the report, have not included verification work nor constitute an audit or assurance engagement in accordance with Australian Auditing and Assurance Standards issued by the Australian Auditing and Assurance Standards Board (**"AUS")** or its predecessors. Accordingly, Advisory Partner does not warrant that its inquiries have identified or verified all of the matters which an audit, extensive examination or "due diligence" investigation might disclose.

In preparing this report, we have relied on information provided by various officers of Metallica. We have not undertaken any verification of the financial or other information provided by those officers, or other parties, as set out in this report. Advisory Partner believes the information provided to be reliable, complete and not misleading and has no reason to believe that any material facts have been withheld. The information provided was evaluated through analysis, inquiry and review for the purpose of forming our opinion. Where Advisory Partner has relied on the views and judgement of management the information was also evaluated through analysis, inquiry and review to the extent practical. However, such information is often not capable of external verification or validation.

Metallica has agreed to indemnify Advisory Partner and their partners, directors, employees, officers and agents (as applicable) against any claim, liability, loss or expense, costs or damage, arising out of reliance on any information or documentation provided by Metallica, which is false and misleading or omits any material particulars, or arising from failure to supply relevant documentation or information.

Advisory Partner is a Corporate Authorised Representative of AP Lloyds Pty Ltd ACN 643 090 359 Australian Financial Services Licence 526061. As a Corporate Authorised Representative of an Australian Financial Services Licence, we are required to provide a Financial Services Guide in situations where we may be taken as providing financial product advice to retail clients. A copy of Advisory Partner Financial Services Guide is set out in the beginning of this Report.

3.4 Basis of evaluation

In forming our opinion as to whether or not the Offer is fair and reasonable for the Shareholders of Metallica, we have considered the following.

The Corporations Act does not define the expressions “fair” and “reasonable”. However, guidance is provided by the Regulatory Guides issued by ASIC, which establish certain guidelines in respect of independent expert’s reports required under the Corporations Act or commissioned voluntarily. In particular, Regulatory Guide 111 “Content of Expert Reports” (**RG 111**) has been considered.

RG 111 draws a distinction between “fair” and “reasonable”. An offer is fair if the consideration is equal to or greater than the value of the securities subject to the offer. The comparison must be made assuming 100% ownership of the target company irrespective of the percentage holding of the bidder or its associates in the target company.

RG 111 considers an offer to be “reasonable” if:

- The offer is “fair”; or
- Despite not being “fair”, the expert believes that there are sufficient reasons for security holders to accept the offer in the absence of any higher offer.

RG 111 sets out some of the factors that an expert might consider in assessing the reasonableness of an offer including:

- The bidder’s pre-existing voting power in the target company;
- Other significant security holding blocks in the target;
- The liquidity of the market in the target’s securities;
- Taxation losses, cash flow or other benefits arising through achieving 100% ownership of the target;
- Any special value of the target to the bidder;
- The likely market price if the offer is unsuccessful; and
- The value to an alternative bidder and likelihood of an alternative offer being made.

In our opinion, the Offer will be fair if the value is greater than the market value of the securities in Metallica Minerals, inclusive of an appropriate premium for control.

In considering whether the Offer is reasonable, other factors that have been considered include:

- Current financial performance and forecast performance;
- The likelihood of an alternative offer and alternative transactions;
- The likely market price of Metallica Group shares in the absence of the offer; and
- Other advantages and disadvantages for Metallica’s Shareholders of approving the Proposed Transaction.

We have not considered special value in forming our opinion. Special value is the amount which a potential acquirer may be prepared to pay for a business in excess of the fair market value. This premium represents the value to the potential acquirer of potential economies of scale, reduction in competition or other synergies arising from the acquisition of the asset not available to likely purchases generally. Special value is not normally considered in the assessment of fair market value as it relates to the individual circumstances of special purchasers.

3.5 Reliance on Information

This Report is based upon financial and other information provided by Metallica. Advisory Partner has considered and relied upon this information. Advisory Partner believes the information provided to be reliable, complete and not misleading, and has no reason to believe that any material facts have been withheld. The information provided was evaluated through analysis, inquiry and review for the purpose of forming an opinion as to whether the Offer is fair and reasonable.

Metallica has agreed to indemnify Advisory Partner, and the directors, partners and employees of Advisory Partner and any related entity against any claim arising out of misstatements or omissions in any material supplied by Metallica, its subsidiaries, directors or employees, on which Advisory Partner has relied.

Advisory Partner does not warrant that its inquiries have identified or verified all of the matters which an audit, extensive examination or "due diligence" investigation might disclose. In any event, an opinion as to whether a corporate transaction is fair and reasonable is in the nature of an overall opinion rather than an audit or detailed investigation. Preparation of this Report does not imply that Advisory Partner has audited in any way the financial accounts or other records of the Company.

It is understood that the accounting information provided to Advisory Partner was prepared in accordance with generally accepted accounting principles and except where noted, prepared in a manner consistent with the method of accounting used by the Company, in previous accounting periods.

An important part of the information base used in forming an opinion of the kind expressed in this report are the opinions and judgement of management. This type of information was also evaluated through analysis, inquiry and review to the extent practical. However, such information is often not capable of external verification or validation.

3.6 Current Market Conditions

Our opinion is based on economic, market and other conditions prevailing at the date of this Report. Such conditions can change significantly over relatively short periods of time. Accordingly, changes in those conditions may result in any valuation opinions becoming quickly outdated and in need of revision. Advisory Partner reserves the right to revise any valuation, or other opinion, in the light of material information existing at the date of this Report that subsequently becomes known to Advisory Partner.

3.7 Sources of Information

Appendix A to this Report sets out details of information referred to and relied upon by Advisory Partner during the course of preparing this Report and forming our opinion.

3.8 Assumptions

In forming our opinion, the following has been assumed:

- All relevant parties have complied, and will continue to comply, with all applicable laws and regulations and existing contracts and there are no alleged or actual material breaches of the same or disputes (including, but not limited to, legal proceedings), other than as publicly disclosed and that there has been no formal or informal indication that any relevant party wishes to terminate or materially renegotiate any aspect of any existing contract, agreement or material understanding, other than as publicly disclosed;

- That matters relating to title and ownership of assets (both tangible and intangible) are in good standing, and will remain so, and that there are no material legal proceedings, or disputes, other than as publicly disclosed;
- Information in relation to the Offer provided to the Shareholders or any statutory authority by the parties as part of the bidder's statement or the target's statement is complete, accurate and fairly presented in all material respects; and
- The legal mechanisms to implement the Offer are correct and effective.

4.0 Business Environment

In arriving at our valuation opinion, we have considered the outlook for the Australian economy and the relevant industry affecting Metallica's.

4.1 Economic Analysis

The economic growth of advanced economies has been slow, with the United States being the most robust. This has been evident in GDP data along with indicators such as retail sales and investment intentions. Consumption growth has been slow in advanced economies driven by weakness in goods consumption despite positive growth in real household incomes throughout 2023. Many economies saw saving rates remain higher than pre-pandemic levels and any savings accumulated during COVID-19 are yet to be drawn down. It is expected that more moderation in inflation should reduce the cost-of-living pressures on income levels, supporting consumption growth. However, this may partially be offset as higher cash rates cause the labour market to ease, while increasing loan repayments which may impact household income. This was reflected in most advanced economies, where the labour market has eased gradually since the recent rate hikes of 2023.

Domestically, Australia's GDP growth remains subdued as the level of demand continues to exceed supply. This slowing in GDP growth over the last year has been driven by low growth in household consumption during cost-of-living pressures. Investments into dwellings has also slowed due to labour constraints, especially in the residential construction sector. For the past two years, Australian households saw their real disposable incomes decline, placing pressures on their budgets. Despite the strong growth in nominal labour incomes, the high rate of inflation and high rate of tax payments have offset this effect. This resulted in households by reducing spending, especially for discretionary items. Unlike other economies, Australian households responded to lower real incomes by saving less or drawing down on their savings. The RBA reports that transaction-based spending data implies that nominal spending growth has slowed across most households. Further, mortgagors have faced a large increase in their mortgage payments, due to higher interest rates. However, many investors were able to offset this impact by drawing down on their savings. Overall, Australian households had to adjust in response to the high cost-of-living pressures, especially for households with lower financial buffers.

Housing prices, a good indicator of household wealth, has rebounded over 2023, reaching a new high since the peak of April 2022. House prices have increased amongst most Australian capital cities and regional areas, although price growth has decreased in Sydney and Melbourne. This rebound is reflected by stronger demand for dwellings combined with limited supply due to population growth. Moreover, due to higher interest rates, the economy saw a weakness in dwelling investment. With the rental market remaining tight, and limited supply of rental properties, vacancies at major cities have remained tight, averaging approximately 2% in 2023.

Inflation is forecast to decline to 3.5% by the end of 2024, and further below 3% by 2025. Goods prices have accounted for majority of the decline in inflation to date and is expected to continue falling in the short-term. However, services inflation remains above target but is expected to gradually ease to the end of 2025. In the coming years it is expected there will be an improved balance in the supply and demand across the economy, including labour and product markets, which is expected to support lower inflation while GDP returns to growth. The cash rate is projected to peak at 4.5% before declining to 3.5% by the end of 2025. This has been increased since the August statement. The exchange rate is assumed to remain unchanged at the current level.

The economic outlook is fairly positive going into 2024 as inflation and GDP are expected to trend a return to historical norms. These conditions may provide markets reasonable confidence that companies will continue to operate business as usual. As such, we do not believe that Metallica Minerals will be adversely affected by these economic factors in the near future.

4.2 Industry Analysis

Metallica Minerals' main product is the mining and production of high-quality Silica sand. Traditionally, this commodity was used for the production of glass, foundry, and other chemical industries. However, in recent years, Silica sand has been growing demand in the renewable energy sector for the production of photovoltaic cells in solar panels.

The demand for High Purity Silica Sand (HPPS) has been growing rapidly in Asia over the last 5-years with a CAGR of 8.4%. China's demand for imported silica sand has grown faster at 27.9% CAGR, resulting in a foreseeable deficit of 4 million tonnes (Mt) or more by 2026. The main driver for this demand is the increasing need for photovoltaic (PV) glass in the solar industry, which relies heavily on the supply of HPSS.

Australia has been the dominant supplier of HPPS Asia-Pacific markets, particularly China, Japan, Taiwan, and South Korea, with exports totalling 3,897,978 metric tonnes. The high purity silica sand produces at Cape Flattery is well-positioned to meet this demand due to its specification, logistics advantages and because it is already a well-recognised product.

The demand for HPSS is expected to continue its exponential growth driven by the structural transition from fossil fuels to renewables, and specifically solar. China remains the leading global producer of solar glass, with HPSS making up approximately 72.2% of every 100kg of PV glass.

Competition for supply of Australian HPSS exists primarily from domestic suppliers in China and seaborne suppliers from Indonesia and Malaysia. However, China will not be able to meet the demand of HPSS unless there is a significant increase in its silica sand acid washing capacity and efficiency. Indonesia entered the market in 2020 and ships its silica sand almost exclusively to China, while Malaysia supplied 1,333,000 MT of silica sand exports to China in 2022.

The demand for HPSS is underpinned by long-term global growth drivers, including the shift towards renewable energy and the transition away from fossil fuels. Solar power generation is a key driver for the demand of HPSS, as it is an essential ingredient in the production of photovoltaic glass.

5.0 Metallica Minerals

5.1 Company overview

Metallica Minerals Limited engages in the development, evaluation, and exploration of mineral properties in Australia. It explores for silica sand, copper, and gold projects. The company's flagship property is the 100% owned Cape Flattery Silica Sand Project covering an area of 36 Km2 exploration tenure located in Northern Queensland. Metallica Minerals Limited was incorporated in 1997 and is based in Fortitude Valley, Australia.

5.2 Projects

The table below highlights the key projects and their descriptions.

Table 5: Metallica Minerals' Projects

Project	Description
Cape Flattery Silica Sand	The Cape Flattery Silica Sand project is located on the eastern coastline of Cape York Peninsula and adjacent to the Cape Flattery Silica Sand operation owned by Mitsubishi. Metallica's CFS project has completed and released a Definitive Feasibility Study.
Clermont	The Clermont Copper/Gold Project is situated near the town of Clermont in central Queensland. The project is prospective for porphyry and stratabound bulk tonnage copper/gold deposits along with mesothermal gold deposits.

Source: Capital IQ

Advisory Partner has excluded Clermont in the valuation section as the project is yet to have JORC resources identified. As there is no reasonable analysis to rely upon, we are unable to determine a value of the potential resources held in this project.

5.3 Cape Flattery Silica Sand Project (CFS)

Metallica Minerals announced an updated Definitive Feasibility Study (DFS) Cape Flattery Silica Sand Project in November 2023. This project holds 47 million tonnes (Mt) of Probable Ore Reserves @ 99.18% SiO_2 which is to be processed across the 15-year life of the project. The Updated DFS does not include the inferred resources for the Western Area of EPM 25734. The DFS was prepared by Metallica Management with support from Turner & Townsend JukesTodd.

The CFS Project is designed to utilise conventional mining equipment and 'off the shelf' processing plant within the same, small footprint.

The key components of the project are:

- Silica sand processing plants;
- Overland conveyor from the product stockpile to the Jetty Infrastructure Area (JIA);
- Barge Loading Facility (BLF) and associated jetty (located two to three nautical miles to ocean going transhipment zone;
- Material Offload Facility (MOF) for delivery of personnel and supplies by marine vessels;
- Purpose-built accommodation facility for 52 people;
- Barging and transhipment operations
- Site access road to the jetty;
- Site-wide services;
- Mine Infrastructure Area (MIA) facilities; and
- Two (2) Product stockpile of 100,000 tonnes each.

5.4 CFS Project Resources & Reserves

The Probable Ore Reserve of 47Mt at 99.11%SiO_2 represents 95% of the Mineral Resource of 49.5Mt at 99.10% SiO_2. The following is an overview of the resource category areas within Metallica mining lease.

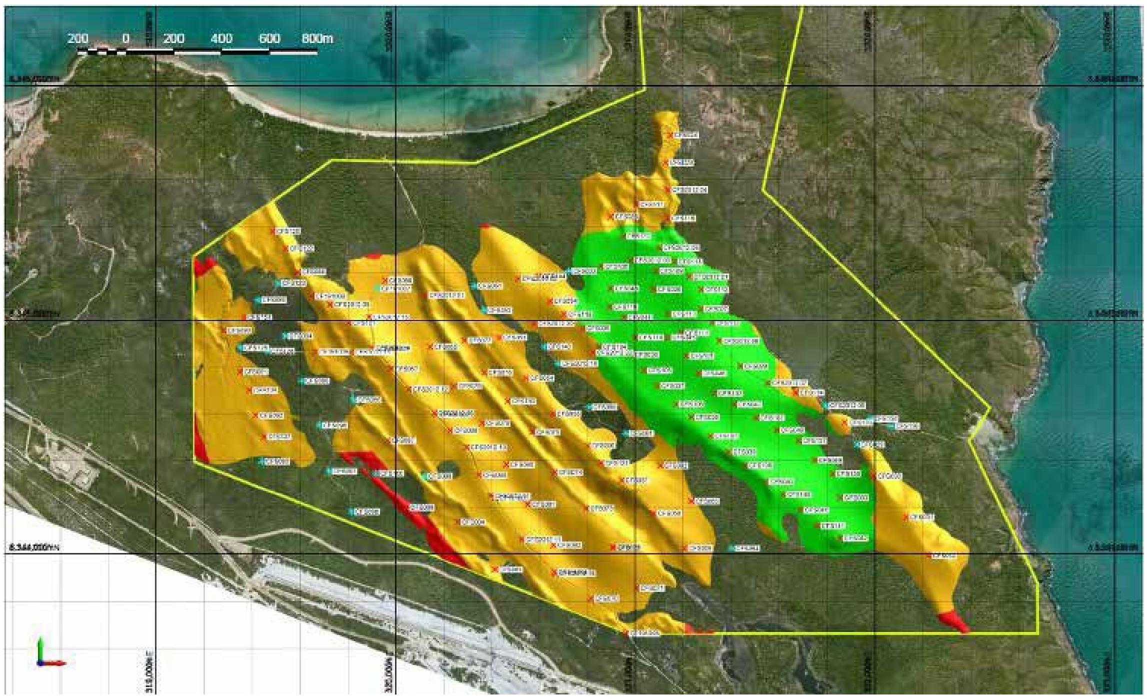


Image 5: Overview of Drillholes and Resource Category Areas with Mining Lease (ML) boundary.

Metallica Minerals owns mineral resources of 49.5 Mt which includes results from 2019 drilling campaigns (hand auger), December 2020, July/August 2021, and December 2021. The data from these drilling campaigns were used to in the resource estimate for the CFS project.

Table 6: Metallica Minerals Ore Reserves

Ore Reserve	Tonnage (Mt)	SiO_2 (%)	Fe_2O_3 (%)	TiO_2 (%)	Al_2O_3 (%)	LOI (%)	Waste Mt
Probable Reserve	47	99.11	0.09	0.14	0.15	0.24	4.0

Source: Metallica Minerals, Definitive Feasibility Study November 2023

Table 7: Metallica Minerals JORC Resources

Resource Category	Tonnage (Mt)	SiO_2 (%)	Fe_2O_3 (%)	TiO_2 (%)	Al_2O_3 (%)	LOI (%)	Density t/m3	Silica Sand Mm3
Measured	16.1	99.20	0.08	0.12	0.22	0.13	1.6	10.1
Indicated	33.2	99.05	0.1	0.18	0.25	0.15	1.6	20.7
Inferred	0.2	99.00	0.12	0.27	0.28	0.13	1.6	0.1
Total	49.5	99.10	0.09	0.16	0.24	0.14	1.6	30.9

Source: Metallica Minerals, Definitive Feasibility Study November 2023

5.5 Exploration Tenements

As at the date of this report, Metallica holds the following tenements:

Table 8: Metallica Minerals' Tenements

Tenement	Project	Status	Commenced	Grant	Expiry	Area HA	Area S/B	Area Km²
EPM 25734	Cape Flattery	C	25/05/2015	25/05/2020	24/05/2025	0	11	54.4
ML 100284	Cape Flattery	A	15/06/2021	-	-	615.9	0	-

Source: Metallica Minerals

5.6 Key Personnel

The Executives and Directors of Metallica are detailed in the table below.

Table 9: Executives of Metallica Minerals

Name & Position	Description
Theo Psaros Executive Chairman	Theo Psaros, GAICD, CA, BFinAdmin, is the Executive Chairman of Metallica Minerals Limited since May 21, 2020, with extensive experience in key executive and resource industry roles, including CFO and COO of MetroCoal Limited. He has also served as Non-Executive Director at Mobilicom Limited from January 20, 2021, to July 05, 2021.
Mark Bojanjac Non-Executive Board Director	Mark Trevor Bojanjac, B.com, CA, ICAA, is an Independent Non-Executive Director of Metallica Minerals Limited since May 13, 2021. He serves as Executive Chairman of PolarX Limited and has held various roles, including CEO of Adamus Resources Limited. Bojanjac, a Chartered Accountant, has a successful track record in developing resource companies and co-founding gold projects in Australia, Mongolia, and China.
Brad Sampson Non-Executive Board Director	Stuart Bradley Sampson, also known as Brad, is an Independent Non-Executive Director at Metallica Minerals Limited since May 13, 2021. With extensive resources industry experience, he served as the CEO of Kore Potash Plc and Tiger Resources Limited. Sampson has held leadership roles covering the entire mining cycle, including exploration, development, operations, and closure. He is a seasoned business leader, director, and mining professional with notable contributions to the Australian resources industry.
Scott Waddell CFO & Company Secretary	Andrew Scott Victor Waddell, B.Bus, FCPA, AGIA, is the CFO of Metallica Minerals Limited since May 21, 2020 and Company Secretary since December 8, 2020. Previously an Interim CEO until May 21, 2020 and Executive Director from February 2019 until August 31, 2021. With rich resources experience from companies like Metro Mining Ltd. Cape Alumina Ltd, Anglo American Metallurgical Coal, and Rio Tinto Alcan, he brings expertise in finance and business improvement. A Fellow of CPA, he holds postgraduate qualifications and is an Associate Member of the Governance Institute of Australia.
Sam Fisher Commercial General Manager	Sam Fisher is a highly credentialled senior executive, with demonstrated commercial success over 25 years in the resources and mining sector, specialising in multi-commodity strategy, sales, trading and marketing, logistics and supply chain. He is experienced in strategic business development, identifying and developing new business opportunities, developing new markets, and strengthening existing relationships. Sam joined Metallica Minerals on 17 October 2022.
Nicholas Villa CFS Project General Manager	Nicholas Villa, BSc (Hons), DipPM, MAIG, has over 23 years' experience as a mining professional, he is well practiced in the delivery of resource projects, taking them from early exploration phase through to production. Nicholas has managed bulk commodity operations both as the Principal and as Contractor, fulfilling senior management roles including Mining Manager, Project Manager and Site Senior Executive. Thoroughly versed in Queensland resource project approvals processes including Environmental Studies and Native Title negotiations. Nicholas was Project Manager for the team that successfully delivered Metro Mining's Bauxite Hills mine to full production in Northern Cape York. Nicholas joined Metallica Minerals in June 2021.

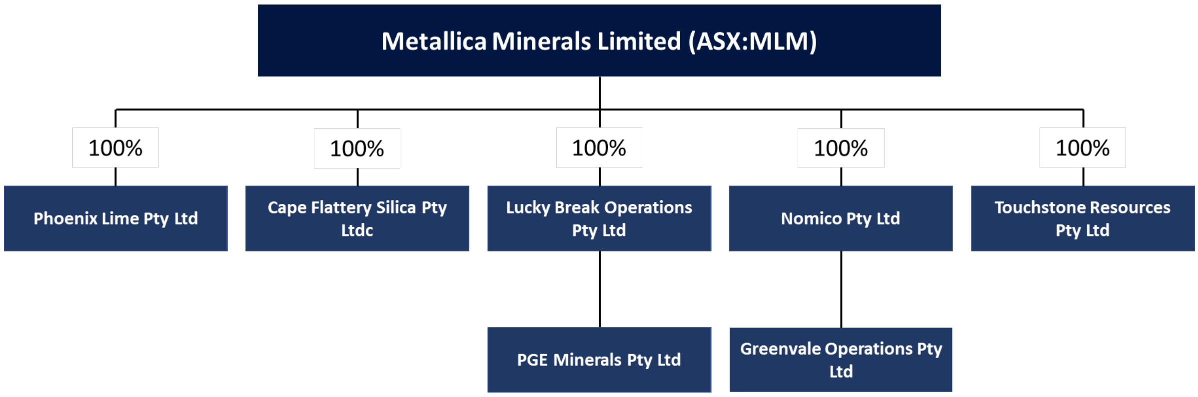
Name & Position	Description
Pat Smith Geology/Exploration Manager	Pat Smith, BSc, MScMiningGeol, MAusIMM, serves as the Geology/Exploration Manager at Metallica Minerals Ltd. With a background in Cyprus Gold and Arimco Gold Pty Ltd, he excels in exploration across Australia, Papua New Guinea, and the Solomon Islands. Graduating from the Cambourne School of Mines in 1987, Mr. Smith brings diverse expertise, from grassroots exploration to feasibility studies.

Source: Metallica Minerals Management

5.7 Ownership and Capital Structure

Metallica has the following 100% owned subsidiaries:

Figure 1: Metallica's Corporate Structure



Source: Metallica Minerals Management

As at 31st of December 2023, Metallica has 959,923,922 total shares outstanding. The top 10 shareholders and total ordinary shares as at 31st of December 2023 are summarised below.

Table 10: Top 10 Shareholders as at 31st of December 2023

As of 31st of December 2023 Shareholder Name	Number of Ordinary Shares Held	Percentage Held of Issued Ordinary Capital
Ilwella Pty Ltd	231,451,245	24.11%
Sibelco Asia Pacific Pty Ltd	157,715,500	16.43%
Sparta AG	92,046,350	9.59%
Dostal Nominees Pty Ltd	29,359,998	3.06%
Rookharp Capital Pty Ltd	24,680,450	2.57%
Citicorp Nominees Pty Ltd	14,570,652	1.52%
Gefrato Tading Pty Ltd	10,100,000	1.05%
Plan-1 Pty Ltd	9,712,501	1.01%
Shadbolt Future Fund (Totttenham) Pty Ltd	8,190,000	0.85%
Sophjak Pty Ltd	7,026,315	0.73%
Top 10 Shareholders	584,853,011	60.93%
Other Shareholders	375,070,911	39.07%
Total Issued Shares	**959,923,922**	**100.00%**

Source: Metallica Minerals

5.8 Outstanding Options

At 31st of March 2024, the following is the total unissued ordinary shares of MLM under option.

Table 11: Metallica Minerals' Options

Grant Date	Expiry Date	Exercise Price	Number under option
3 August 2011	No Expiry Date*	0.7	1,000,000
29 November 2023	29 November 2028	0.045	32,000,000
Total			**33,000,000**

Source: Metallica Minerals Annual Report FY23 & Metallica Minerals Management

The options granted in August 2011 are subject to expire 3-years after the decision is made to mine at Lucknow or Kokomo. As at the date of this report, the share price of Metallica Minerals Limited is 0.024.

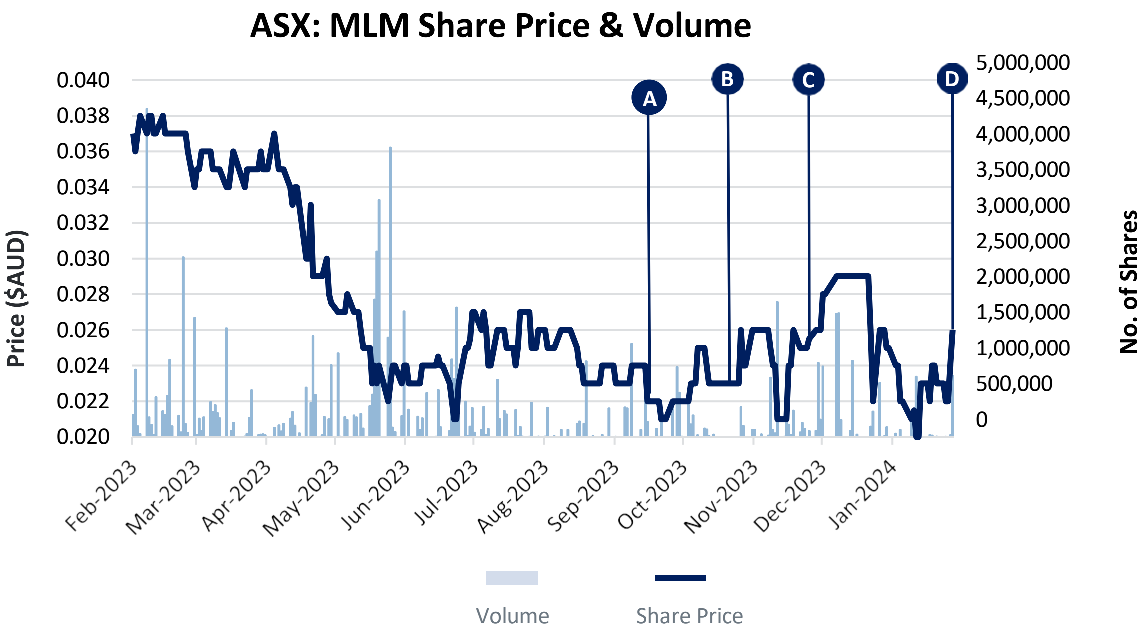
5.9 Share Price Analysis

In order to assess the reliability of using the traded market price of MLM's shares as a basis for determining the fair market value of the shares in MLM we have had regard to:

- the liquidity of the stock over the trading period;
- the 'spread' of ordinary shareholders and the total number of ordinary shares that they hold in the Company, taking into account any trading or other restrictions applicable to the quoted ordinary shares;
- the level of trading activity of the quoted ordinary shares in the Company (i.e. the volume of trades of the quoted ordinary shares in the market as a percentage of the total quoted ordinary shares, and the frequency of the trades);
- the number and frequency of 'unusual' and/or 'abnormal' trading that takes place in the Company's quoted ordinary shares;
- the presence of any factors that may indicate that trading in the shares is the result of significant speculative trading; and
- the level of knowledge that the 'willing' buyers and sellers have in respect of the Company and the market in which it operates.

We have analysed Metallica's daily share close price and volume traded during the period from 16th of February 2023 to 16th of February 2024.

Figure 2: Metallica Share Price Analysis



Source: Capital IQ and AP Analysis

A comprehensive list of events disclosed by Metallica's company announcements during the past year which may have impacted Metallica's share price movements and trading volumes are set out on the following page. Announcements which may have corresponded to a significant impact (> 10%) on shares prices and trading volumes are highlighted.

Table 12: Metallica's Recent Company Announcements

Date	Announcement	Event	Share Price: Day Prior to Announcement	Share Price: Announcement Day	% Change
12 February 2024	Cape Flattery Silica Sand Project Update	D	0.023	0.023	0%
30 January 2024	Change of Director's Interest Notice x 3		0.021	0.0215	2%
15 December 2023	CFS Project declared a Coordinated Project	C	0.025	0.0255	2%
12 December 2023	Cape Flattery Silica signs MOU with Eternal Asia		0.025	0.025	0%
11 December 2023	Drilling Commences at Leo Grande Graphite / Gold Prospect		0.026	0.025	-4%
22 November 2023	Results of Annual General Meeting		0.026	0.026	0%
20 November 2023	Metallica Minerals webinar and update		0.024	0.026	8%
14 November 2023	Cape Flattery Silica Updated DFS Supports 3MTPA Sales	B	0.023	0.023	0%
31 October 2023	Supplementary Notice of Annual General Meeting		0.025	0.024	-4%
11 October 2023	Appendix 4G		0.022	0.021	-5%
25 September 2023	Cape Flattery Silica Sand Project Update	A	0.023	0.023	0%
19 September 2023	Bulk metallurgical tests confirm High Purity Silica at CFS		0.024	0.024	0%
5 September 2023	Revised Change of Director's Interest Notice		0.025	0.024	-4%
25 August 2023	Change of Director's Interest Notice		0.025	0.025	0%
24 August 2023	Application for quotation of securities - MLM		0.025	0.025	0%
17 August 2023	Change in substantial holding		0.025	0.025	0%
3 August 2023	Change of Director's Interest Notice x 3		0.026	0.026	0%
1 August 2023	Lapse of Performance Rights		0.026	0.026	0%

Source: Capital IQ, ASX, AP Analysis

Notable announcements which may have had a significant impact on Metallica's share price include:

- **19/02/2024 - Gold Exploration Target established for Leo Grande Project**
  The company had announced a JORC exploration target of 150,000 – 2,300,000 ounces of gold at the project. The quantity and grade of the target is conceptual in nature and is an approximation. The project is yet to estimate a mineral resource.
- **19/02/2024 - Diatreme intention to make takeover offer for Metallica Minerals**
  Metallica Minerals issued a response regarding Diatreme's conditional intention to make a takeover bid announced on the 16th of February 2024. The Metallica Board recommended that shareholders take no action pending a formal response and recommendation from the Metallica Board.
- **11/05/2023 - Cape Flattery Silica Sand Project Update**

Metallica Minerals announced an update regarding the Cape Flattery Silica Sand Project, stating the definitive feasibility study is advancing for the project. The recent requirement for an Environmental Impact Statement (EIS) will result in delays to the project's approval and timing on construction.

The following tables outline Metallica's trading data. The past 12-months of trading data was used to determine daily turnover and monthly volumes. Typically, the large sophisticated and founding shareholders of small-cap companies are not traders of their shares.

Table 13: Metallica's Share Overview

Company	Ticker	Shares Outstanding	Free Float
Metallica Minerals	ASX:MLM	959,923,922	431,293,818

Source: Capital IQ

The following table is a summary of Metallica Mineral's 12-month trading data including average daily volume, low price, high price, and closing price.

Table 14: Metallica's ASX Trading Data

		Share Pricing		
ASX:MLM	Avg. Daily Volume	Low ($AUD)	High ($AUD)	Close ($AUD)
Mar-23	458,598	0.034	0.038	0.035
Apr-23	181,577	0.034	0.037	0.035
May-23	339,559	0.027	0.034	0.027
Jun-23	847,840	0.022	0.026	0.024
Jul-23	355,196	0.021	0.027	0.026
Aug-23	111,994	0.024	0.027	0.026
Sep-23	200,468	0.023	0.026	0.024
Oct-23	233,099	0.021	0.025	0.024
Nov-23	84,112	0.023	0.026	0.024
Dec-23	464,747	0.021	0.029	0.029
Jan-24	178,320	0.020	0.029	0.020
Feb-24	125,996	0.020	0.026	0.026

**Note: Feb-24 contains data up to 16th of February 2024*
Source: Capital IQ & AP Analysis

Given the above data, we note the following regarding Metallica's trading data:

- the share price peaked at $0.038 in March 2023 and reached a low of $0.020 in February
- 2024. average daily volumes ranged from 84,112 in November 2023 to 888,213 in June 2023.

5.10 Liquidity Analysis

The following table displays the volume for each month in the past year, as well as the percentage of total and free float shares for each given month. To reflect the liquidity of common stock in Metallica Minerals we have included equity listings for:

- DB:MM4 listed on Deutsche Boerse AG
- ASX:MLM listed on Australian Securities Exchange
- CHIA:MLM listed on Chi-X Australia
- OTCPK:MLMZ.F listed on OTC Pink

Table 15: Metallica's Liquidity Analysis

Month End	Volume Traded	Volume Traded as % of Total Shares	Cumulative Volume Traded as % of Total Shares	Volume Traded as % of Free Float Shares	Cumulative Volume Traded as % of Free Float Shares
Mar 2023	11,663,883	1.2%	1.2%	2.7%	2.7%
Apr 2023	4,094,162	0.4%	1.6%	0.9%	3.7%
May 2023	8,768,965	0.9%	2.6%	2.0%	5.7%
Jun 2023	21,567,304	2.2%	4.8%	5.0%	10.7%
Jul 2023	10,561,374	1.1%	5.9%	2.4%	13.1%
Aug 2023	2,860,363	0.3%	6.2%	0.7%	13.8%
Sep 2023	4,660,707	0.5%	6.7%	1.1%	14.9%
Oct 2023	5,524,663	0.6%	7.3%	1.3%	16.2%
Nov 2023	2,114,460	0.2%	7.5%	0.5%	16.7%
Dec 2023	12,381,419	1.3%	8.8%	2.9%	19.5%
Jan 2024	4,552,247	0.5%	9.2%	1.1%	20.6%
Feb 2024	4,447,648	0.5%	9.7%	1.0%	21.6%
Min	**2,114,460**	**0.2%**		**0.5%**	
Average	**7,766,433**	**0.8%**		**1.8%**	
Median	**5,092,685**	**0.5%**		**1.2%**	
Max	**21,567,304**	**2.2%**		**5.0%**	

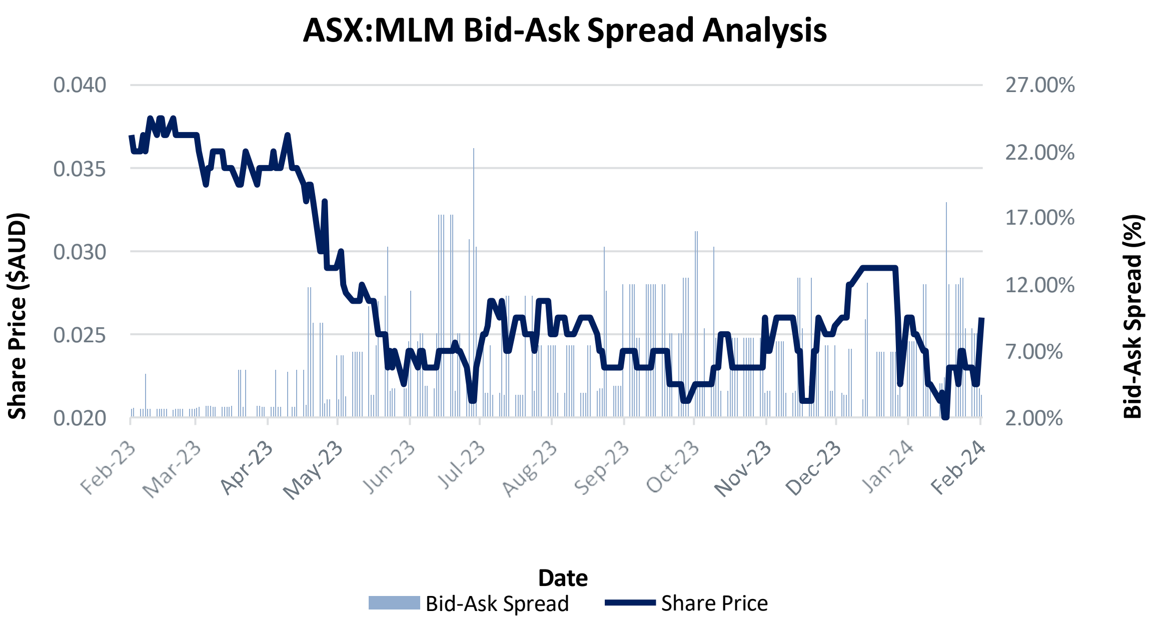
**Note: Feb-24 contains data up to 16th of February 2024*
Source: Capital IQ & AP Analysis

We note the following regarding Metallica's volume and liquidity data from March 2023 to February 2024:

- the cumulative volume traded of total shares is 9.7% over this period.
- the maximum monthly volume traded as a percentage of total shares is 2.2%.
- the cumulative volume of free float shares is 21.6%.
- the maximum monthly volume traded as a percentage of free float is 5.0%.
- monthly volumes ranged from 2,114,460 in November 2023 to 21,567,304 in June 2023.

We have analysed the bid and ask spread in trading data for the previous 12-months. The below chart demonstrates the bid and ask spread from 16th of February 2023 to 16th of February 2024.

Figure 3: Metallica Bid/Ask Spread



Source: Capital IQ and AP Analysis

In regard to the data provided above, we note the following:

- the minimum spread is 2.56%
- the median spread is 6.90%
- the average spread is 6.94%
- the maximum spread is 22.22%

We consider Metallica Minerals shares to be illiquid based on an average bid-ask spread of 7% and an annual cumulative volume as a percentage of total shares under 10%.

5.11 Volume Weighted Average Price

We have reviewed the following factors relating to the trading activity of MLM's shares on the ASX:

- the daily high, low and closing share price of trades of MLM;
- the daily volume of MLM share trading; and
- the volume weighted average share price ("**VWAP**") of MLM.

Table 16: Metallica's VWAP

Metallica VWAP	Low	High	VWAP
Up to 16th February 2024			
1 Day	0.0200	0.0380	0.0257
5 Day	0.0208	0.0376	0.0256
10 Day	0.0213	0.0373	0.0246
1 Month	0.0222	0.0368	0.0225
2 Month	0.0227	0.0363	0.0264
3 Month	0.0229	0.0350	0.0255

Source: Capital IQ & AP Analysis

We note the following regarding with respect to the share price of MLM in the 3-months leading up to the intention to takeover announcement on the 19th of February 2024.

- The VWAP ranges from $0.0225 (1-month) to $0.0264 (2-month).
- The 3-month VWAP is at $0.0255 which is lower than the offer.

5.12 Capital Raisings

The following is a complete capital raising history of Metallica Minerals. The recent higher offer was 145m shares at $0.035 announced on 30th of November 2022. This is a substantial raising as it accounts for 15.1% of the current outstanding share count.

Table 17: Metallica Minerals' Recent Capital Raisings

Announce Date	Offering Type	Offering Price	Shares Offered	Total Capital
30 November 2022	Private Placement - Common Stock	0.035	145,000,000	5,075,000
30 November 2022	Common Stock - Subscription Rights Offering	0.032	141,199,221	4,518,375
16 February 2022	Private Placement - Common Stock	0.031	97,903,226	3,035,000
20 September 2021	Common Stock - Other	NA	NA	NA
22 April 2021	Common Stock - Other	0.030	71,166,665	2,135,000
25 March 2021	Common Stock - Subscription Rights Offering	0.030	162,188,704	4,865,661
19 April 2017	Common Stock - Other	0.050	5,377,769	268,888
3 September 2017	Common Stock - Subscription Rights Offering	0.050	58,822,231	2,941,112

25 February 2016	Common Stock - Subscription Rights Offering	0.030	59,871,319	1,796,140
18 August 2014	Private Placement - Common Stock	0.080	6,250,000	500,000

Source: Capital IQ & Metallica Management

5.13 Historical Profit and Loss

We detail below the past 3 years Profit and Loss for Metallica.

Table 18: Metallica's historical Profit and Loss

	Actual			
Consolidated Statements of Comprehensive Income	FY21	FY22	FY23	HY24*
Revenue				
Revenues	49,221	4,182	NA	NA
Interest Revenues	8,034	7,770	86,482	92,470
Other Income	220,342	2,500	NA	NA
Total Revenue	**277,597**	**14,452**	**86,482**	**92,470**
Expenses				
Employee Benefit Expense	-372,460	-857,204	-634,829	-761013
Rental Expenses	-89,936	-41,413	-28,654	-16468
Professional Fees	-113,436	-148,033	-265,797	-138,814
Legal Fees	-50,545	-35,911	-65,281	-26,355
Extraordinary General Meeting Costs	-6,000	-14,667	NA	NA
Airfares and Conferences	-41,254	-37,521	-73,924	-9,856
Exploration Costs	-279,878	-306,391	-77,035	-55,648
Impairment of Exploration and Evaluation Expenditure	NA	NA	-635,494	NA
Other Expenses	-214,305	-388,886	-345,243	-172,159
Depreciation and Amortization	-18,421	-85,372	-111,453	-54,435
Finance Costs	NA	-18,516	-19,683	-8,891
Listing Fees and Registry Expense	-96,599	-87,732	-78,084	-55,415
Net Loss on Disposal of Subsidiary and Joint Operation	-2,049,754	NA	NA	NA
Total Expenses	**-3,332,588**	**-2,021,646**	**-2,335,477**	**-1,299,054**
Pre-tax Income	**-3,054,991**	**-2,007,194**	**-2,248,995**	**-1,206,584**
Taxes and Other Expenses				
Income Tax	0	0	0	0
Loss For The Period	**-3,054,991**	**-2,007,194**	**-2,248,995**	**-1,206,584**

Source: Capital IQ

5.14 Historical Balance Sheet

We detail below the historical balance sheet for Metallica as at 30 June 2021, 2022 and 2023.

Table 19: Metallica's Historical and Current Balance Sheet

Consolidated Statements of Financial Position	Actual FY21	FY22	FY23	HY24*
ASSETS				
Current Assets				
Cash and Cash Equivalents	7,531,567	5,259,695	7,106,924	4,821,125
Trade and Other Receivables	45,923	59,525	23,432	33
Total Current Assets	**7,577,490**	**5,319,220**	**7,130,356**	**4,821,158**
Non-Current Assets				
Right of Use Assets	NA	476,467	399,202	360,570
Exploration & Evaluation	1,183,081	5,160,459	10,382,182	11,790,539
Property, Plant and Equipment	10,788	100,105	103,812	94,073
Other Non-Current Assets	48,443	73,498	67,498	67,498
Total Non-Current Assets	**1,242,312**	**5,810,529**	**10,952,694**	**12,312,680**
Total Assets	**8,819,802**	**11,129,749**	**18,083,050**	**17,133,838**
LIABILITIES				
Current Liabilities				
Trade and Other Payables	382,022	838,600	670,910	417,056
Employee Benefits	11,447	39,713	94,534	98,485
Lease Liabilities	NA	63,163	68,878	71,870
Total Current Liabilities	**393,469**	**941,476**	**834,322**	**587,411**
Non-Current Liabilities				
Lease Liabilities	NA	425,282	356,404	319,585
Provisions	NA	3,842	3,842	3,927
Total Non-Current Liabilities	**-**	**429,124**	**360,246**	**323,512**
Total Liabilities	**393,469**	**1,370,600**	**1,194,568**	**910,923**
Net Assets	**8,426,333**	**9,759,149**	**16,888,482**	**16,222,915**
Equity				
Common Stock	50,896,470	53,865,383	63,293,132	63,447,229
Accumulated profit/loss	(42,689,884)	(44,697,078)	(46,696,420)	(47,903,004)
Reserves	219,747	590,844	291,770	678,690
Total Equity	**8,426,333**	**9,759,149**	**16,888,482**	**16,222,915**

Source: Capital IQ

5.15 Historical Cash Flow Statement

We detail below the historical Cash Flow Statement for Metallica as at 30 June 2021, 2022 and 2023.

Table 20: Metallica Historical Cash Flow Statement

Consolidated Statement of Cash Flows	Actual FY21	FY22	FY23	HY24*
Cash flow from operating activities				
Receipts from customers, government grants and other (inclusive of GST	256,644	8,976	740	-
Payments to suppliers and employees (inclusive of GST)	(1,198,239)	(1,073,871)	(1,551,585)	(627,136)
Interest Received	8,034	7,770	86,482	92,470
Interest Paid	-	(18,516)	(19,683)	(8,891)
Net Cash Used in Operating Activities	**(933,561)**	**(1,075,641)**	**(1,484,046)**	**(543,557)**
Cash flows from investing activities				
Payments for property, plant and equipment	(5,665)	(110,302)	(37,895)	(6,063)
Payments for exploration and evaluation assets	(1,183,081)	(3,977,378)	(5,857,217)	(1,702,352)
Payments for security deposits	(15,805)	(25,055)	-	-
Receipt for security deposit	-	-	6,000	-
Sale proceeds - HMS plant and tenements	330,000	-	-	-
Proceeds from disposal of subsidiary and joint operation	41,737	-	-	-
Net Cash Used in Investing Activities	**(832,814)**	**(4,112,735)**	**(5,889,112)**	**(1,708,415)**
Cash flows from financing activities				
Proceeds from issue of shares	7,000,661	3,044,000	9,883,375	-
Share issue transaction costs	(500,524)	(78,087)	(599,825)	-
Repayment of lease liabilities principal	-	(52,409)	(63,163)	(33,827)
Net Cash Used in Financing Activities	**6,500,137**	**2,913,504**	**9,220,387**	**(33,827)**
Net increase/(decrease) in cash and cash equivalents	4,734,032	(2,271,872)	1,847,229	(2,285,799)
Cash and cash equivalents at the beginning of the financial year	2,797,535	7,531,567	5,259,695	7,106,924
Cash and cash equivalents at the end of the financial year	**7,531,567**	**5,259,695**	**7,106,924**	**4,821,125**

5.16 Silica Sand Market Overview

The 2026 pricing estimate for a high-grade low iron Cape Flattery HPSS product has been revised to FOB USD 54.00 to USD 65.00 / AUD 75.00 to AUD 90.28 per tonne as per the Prime Gain Limited market report. The revision is based on a larger foreseeable supply shortfall of HPSS, particularly to the PV glass industry where demand is growing exponentially. The pricing estimate assumes quality product is produced and reliably supplied at sufficient scale, with efficient logistics and freight access convenience.

Current CIF market pricing of high-grade low iron silica sand imported to China from Australia is in the region of USD 60.00 plus per tonne. Current domestic China supply of HPSS is pricing in the range of RMB 400 to RMB 460 / USD 57.85 to USD 66.54 per tonne (delivered to factory gate).

Pricing will vary according to contract terms and supply arrangements including quality and minimum volume commitments over time, terms of trade, cost of freight, nature of the buyer, buyer history, competition, and development in processing technology. Currently, there is insufficient supply of high-grade silica sand with low iron, driving the demand for seaborne imported product. This demand is driven by the PV glass industry across Asia, particularly in China. The demand for PV glass tracks solar panel demand, which is projected to grow per all IEA scenarios through to 2030 at a CAGR between 15% to 25% (the IEA uses a CAGR of 21.2% for solar power capacity).

In parallel, significant demand supply pressure is being experienced in relation to high grade quartz used in quartz crucibles for solar (demand 2022 to 2023 estimated growth of 37%), with corresponding increases in price of product. In relation to copper, there are foreseeable supply shortages and corresponding projected record pricing, demand being supported by the “green transition”.

6.0 Valuation of Metallica's Shares

6.1 Valuation Methodology Adopted

We have considered the various valuation methods as set out in Appendix B in the course of arriving at our valuation conclusion. In our opinion, the most appropriate method with which to value MLM is a sum of parts valuation for assets owned by Metallica Minerals. This valuation method considers the separate valuation of the assets and liabilities of a company. The valuation methodologies adopted for each key asset owned by Metallica Minerals is detailed below:

Table 21: Description of Metallica Minerals' Assets

Asset	Description
Cape Flattery Silica Sand Project	The company has a definitive feasibility study (DFS) which involved a detailed life of mine (LOM) model conducted by a technical expert which we have used in undertaking our valuation. To further assist in our analysis, we have engaged SRK to review and comment on the reasonableness of the assumptions underlying the Definitive Feasibility Study. Refer to Appendix A for a description of work that SRK was engaged to undertake.
Other resources	Metallica has other JORC deposits which may produce sales in the future and is not included in the Cape Flattery DFS. We have valued these resources based on an EV/Resources method.
Other assets and liabilities	We will consider the value of the remaining assets and liabilities of Metallica.

Source: AP Analysis

In assessing the most appropriate valuation method, we have provided reasons to reject other methodologies in valuing Metallica Minerals:

- We have assessed the liquidity of Metallica Minerals shares in Section 4.7 and concluded the shares are thinly traded. As such, we consider that the quoted market price valuation method is not appropriate to value the shares in the company.
- The company at the time of this report is not profitable, nor does it have a history of earnings in which a multiple can be applied to determine a value. It is generally not appropriate to apply a multiple of earnings to value a mining company due to the unique capital and operating requirements of each project, their respective exploration and development stages, environmental and regulatory factors along with other unique mining issues. These factors make it difficult to find a comparable company for valuation.
- We do not consider the Discounted Cash Flow (DCF) method to be appropriate to value Metallica Minerals as a whole as we do not have any reliable information with regard to future cashflows of the entire company. However, we do have reliable information in regard to the future cash flows in the Cape Flattery Silica Sand Project as per the Definitive Feasibility Study and have applied the DCF method to value these resources.

6.2 Sum of Parts

Asset based valuations involve the determination of the fair market value of a business based on the net realisable value of the assets used in the business.

Valuation of net realisable assets involves:

- separating the business or entity into components which can be readily sold, such as individual business units or collection of individual items of plant and equipment and other net assets; and
- ascribing a value to each based on the amount that could be obtained for this asset if sold.

The value of the assets can be determined on the basis of:

- *orderly realisation*: this method estimates fair market value by determining the net assets of the underlying business including an allowance for the reasonable costs of carrying out the sale of assets, taxation charges and the time value of money assuming the business is wound up in an orderly manner. This is not a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value;
- *liquidation*: this is a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value; or
- *going concern*: the net assets on a going concern basis estimates the market value of the net assets but does not take into account any realisation costs. This method is often considered appropriate for the valuation of an investment or property holding company. Adjustments may need to be made to the book value of assets and liabilities to reflect their going concern value.

The value of assets as a going concern is the most appropriate way to value the shares in Metallica Minerals as the company is continuing business in the foreseeable future.

6.3 Surplus assets

Surplus assets are assets that form part of a business entity or company but do not contribute to the earnings or cash flow generation capacity of that business or company. These are assets which, if sold, would not impact on the revenue or profit generating capacity of the entity. There are no surplus assets in Metallica.

6.4 Premium for Control

When valuing a controlling interest, an appropriate allowance should be made for the premium for control, given the strategic benefit that a controlling interest would provide. Empirical evidence on premiums for control indicates that these premiums tend to range between 15% and 40%. In assessing the appropriate premium for control we've considered:

- The company does not derive revenue from the Cape Flattery Silica Sand Project as it is pre-development;
- The company's Cape Flattery Silica Sand Project is in Definitive Feasibility Study stage;
- The Cape Flattery Silica Sand Project is reasonably developed in infrastructure planning relative to Diatreme's projects. Metallica's Cape Flattery Silica Sand Project is at Definitive Feasibility Study stage whereas Diatreme's Northern Silica project is at Scoping Study Stage.
- The company has limited ability to raise capital in its current form, due to illiquidity and low market capitalisation; and
- The company has not been paying dividends.

Our view is that the circumstances mean that the control premium would be at the mid-range and as a result we have selected 30%.

[1] **Empirical Evidence of Control Premia:**

CA ANZ Survey, September 2021: "For those using a standard control premium, the most common range adopted is 20-25%".

RSM Control Premium Study, 2021: "In the 15.5-year period ended 31 December 2020, the average implied 20-day pre-bid control premium for the Australian Market is 34.7%, whilst the median is 27.5%."The research also found premiums in the ranges of 9.5% to 40.6%.

Corporate Finance Institute, 2022: "Typically, control premiums can be in the 20%-30% range of the target's current share price and can sometimes go up to 70%".

Lonergan, Wayne, 'The Valuation of Businesses, Shares and Other Equity': "A typical control premium may be in the order of 25% to 40%".

Halligan & Co, Control Premium Research: "The median takeover premium on the 20-day pre-bid price is 30% based on our analysis of 605 takeovers over 14 years to FY2014".

6.5 Valuation of Cape Flattery Silica Sand Project (CFSS)

Metallica Minerals operates the Cape Flattery Silica Sand Project which has been valued through a discounted cash flow method as per the Definitive Feasibility Study announced in November 2023. SRK was engaged to provide advice to us in respect of certain aspects of the Definitive Feasibility Study (refer to Appendix A) for a description of work that SRK was engaged to undertake. SRK did not identify any significant risks associated with mining. SRK suggests that the key risks are associated with the metallurgical recovery, shipping and product price received.

The Definitive Feasibility Study outlines 49.5Mt of mineral resources with 38.1Mt of Silica sand sales across a 25-year life of mine. The average 2025 sales price in real terms is AUD$80.54 per tonne. The estimated initial construction capital expenditure is $236.7m. The life of mine revenue is forecast to be $3,064.6m.

We were provided with the DCF used to value the project in the Definitive Feasibility Study which involved a valuation of monthly cash flows adjusted for CPI. To value the company on a nominal basis, we have excluded the CPI impact and used these cash flows for valuation. We annualised and mid-pointed the cash flows for timing purposes as projects may face changes in expected cash flows. We implemented a discount rate based upon the weighted average cost of capital (WACC) of 14.12% to 15.91% (see Appendix C), resulting in an estimated value of $153.98m to $194.76m for the Cape Flattery Silica Sand Project.

Table 22: Value of Cape Flattery Silica Sand Project

Value of Cape Flattery Silica Sand Project	
NPV (14.12% WACC)	194,757,804
NPV (15.91% WACC)	153,978,174

Source: AP Analysis

6.6 Valuation of Western Area of EPM 2574 at Cape Flattery

Metallica Minerals holds 12 Mt of Inferred Resources at the western end of the EPM 2574 which is not accounted for in the Definitive Feasibility Study and valuation. However, these resources have been measured as per JORC standards, as such, we've valued them based on an EV/Resource method using comparable silica sand mine multiples summarised below.

Table 23: Metallica Minerals' Western Cape Flattery Valuation

Value of Western Cape Flattery	
Silica Sands (mt)	12
EV/R Multiple	0.46
Value of Project	**5.55**

Source: AP Analysis

We've valued the resources in western Cape Flattery to be $5.55m based on the comparable companies listed in the table below:

Table 24: Comparable companies summary

Company Name	Development Stage	Market Cap (AU$M)	EV (AU$M)	Total JORC Resource (Mt)	Implied EV/Resource
Diatreme	Scoping Study	74.60	63.30	605.16	0.10x
Industrial Minerals Ltd	Exploration	16.50	15.40	12.40	1.24x
VRX Silica Limited	Feasibility Study completed	58.34	57.20	1,380.50	0.04x
Min		16.50	15.40	12.40	0.04x
Average		49.81	45.30	666.02	0.46x
Median		58.34	57.20	605.16	0.10x
Max		74.60	63.30	1,380.50	1.24x

Source: AP Analysis

6.7 Value of Metallica

We have reviewed the assets of the company in the following table including the reviewed valuation of the company's Cape Flattery Silica Sand Project. We have accounted for other mining resources, net cash, and a control premium to determine the fair value of MLM on a controlling basis of $213.66 to $266.67.

Table 25: Metallica Minerals' Valuation Summary

Fair Value of MLM	Low	High
NPV of Project	153.98	194.76
Other Mining Resources	5.55	5.55
Net Cash	4.82	4.82
Equity Value of MLM	**164.35**	**205.13**
Control Premium	30%	30%
Equity Value (Control Premium)	**213.66**	**266.67**

Source: AP Analysis

This represents a per share value below:

Table 26: Metallica Minerals' Valuation on Controlling Basis

Fair Value of MLM on a minority basis	Low	High
Fair value of MLM (incl. controlling premium)	**213.66**	**266.67**
Shares Outstanding	959.92	959.92
Fair Value of MLM shares on a controlling basis	**0.223**	**0.278**

Source: AP Analysis

We have assessed the value of MLM based on the sum of parts method to be in the range of $0.223 to $0.278.

6.8 Share Valuation Cross Check

We have considered all available valuation methods and have concluded that the most appropriate cross-check method is based on Metallica Minerals most recent capital raising in FY23. The company's capital raising history is detailed in section 5.12 of this report. The latest capital raising includes 145,000,000 shares at $0.035 totaling $5,075,000 in funds.

Table 27: Metallica Minerals' Valuation Cross Check

Fair Value of MLM on a minority basis (cross-check)	
Capital Raise Price of MLM	0.035
Shares Outstanding	959.92
Fair Value of MLM	**33.60**
Control Premium	30%
Fair Value of MLM on a controlling basis	**43.677**

Source: AP Analysis

We have assessed the value of Metallica Minerals based on their November 2022 capital raising at $0.035 per share. Based on this valuation method, the fair value of MLM on a controlling basis is $43.677m. However, it should be noted that this capital raising was prior to Metallica's Definitive Feasibility Study and may not represent the fair value of those resources.

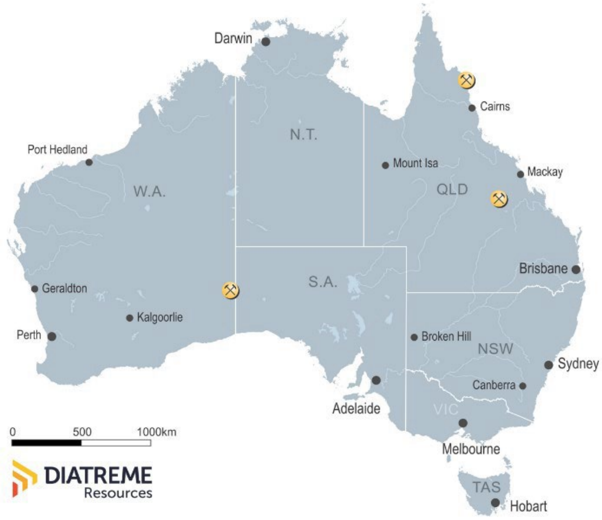
7.0 Diatreme Resources Ltd

7.1 Company overview

Diatreme Resources Limited is an emerging Australian producer of mineral and silica sand based in Brisbane. The company has four key projects, with two focussed on silica sand. Diatreme also has a Copper-Gold Project, which is subject to a farm-out with Metallica Minerals (ASX: MLM). The company also has a Zircon-rich project, which is considered one of a handful of major zircon-rich discoveries in the past decade. This project is well-positioned for development, sale, or joint venture.

Diatreme has an experienced Board and management across all stages of exploration, mine development and financing coupled with strong community engagement skills. The company has resources which play a role in the global decarbonisation and ongoing conversion of power generation to renewable energy sources. Further, the company has a strong focus on ESG, working with Traditional Owners to ensure long-term sustainability including health, safter and environmental stewardship.

Figure 4: Map of Diatreme's Operations



Source: Diatreme Annual Report

7.2 Projects

The table below highlights the key projects and their descriptions.

Table 28: Diatreme Projects Summary

Project	Description	Stage of Development
Northern Silica	Diatreme Resources' Northern Silica Project is a silica sand mining project in early stages. The site is situated in the Hope Vale Aboriginal Shire near Cape Flattery, Far North Queensland and in close proximity to the Cape Flattery Silica Mines and the Cape Flattery Port.	**Exploration Stage:** Completed a Scoping Study. Has not completed a Pre-Feasibility Study (PFS) or a Definitive Feasibility Study (DFS). The Scoping Study has provided Indicated and Inferred Resources and does not provide probable or proven ores in their JORC summary.
Galalar	The Galalar project is located near the world's largest silica sand mine in North Queensland. Diatreme's Galalar Silica Project is capable of producing high quality silica for the Asian solar panel market.	**Exploration Stage:** A DFS was in process until the Northern Silica Project was identified and developed. This project has now been paused until the company's Northern Silica Project is further developed.
Cyclone	Diatreme's Cyclone Zircon Project in Western Australia's Eucla Basin is considered the largest undeveloped high-grade zircon project in the Basin	**Early Development:** Completed a DFS, and Diatreme is looking to raise capital through development partners for this project.

Clermont	The Clermont Copper/Gold Project is situated in the town of Clermont in central Queensland. The project is prospective for porphyry and stratabound bulk tonnage copper/gold deposits along with mesothermal gold deposits.	**Exploration:** Drilling programs results were released, with JV partner (Metallica Minerals) now owning a 51% ownership of this project. Further drilling programs are expected to continue.

Source: AP Analysis

The Northern Silica Project and Galalar Project are owned by Cape Silica Holdings Pty Ltd, in which Diatreme has entered into a joint venture with their second largest shareholder, Sibelco. Diatreme currently has a 73.2% share in Cape Silica Holdings Pty Ltd.

Advisory Partner has concluded that some of Diatreme's projects would be inappropriate to consider in the valuation of Diatreme's shares. The following table highlights the reasoning as to why this is the case.

Table 29: Diatreme's Projects discounted from valuation

Project	Reason
Galalar	This project was not considered in the valuation of Diatreme's shares as it is currently not being developed and has been stopped in its production as a result of DRX's focus on developing the Northern Silica Project. The project is planning to develop a slurry pipeline to the port of Cape Flattery as the main option of exporting silica sand. This constitutes approximately 30km of pipeline infrastructure that is required to cross some rivers and traditional land, subject to various regulatory approval. Moreover, in July 2023, Diatreme Resources formally withdrew its application to prepare an EIS for this project.
Clermont	Clermont was not considered in the valuation of Diatreme's shares as JORC Mineral Resources are yet to be identified. As such, there would be no reliable way of valuing this project because no certainty can be placed on the project's cashflow.

Source: AP Analysis

7.3 Diatreme Resources JORC Ore Reserves and Mineral Resources

Diatreme's Ore Reserves and Mineral Reserves are summarised below in accordance with the JORC (2012) Code.

Table 30: Summary of Heavy Minerals (HM) Ore Reserves and Mineral Resources

Project	Ore Reserve Category	Ore Tonnes Millions	In-situ HM Tonnes Millions	HM Grade (%)
Cyclone	Probable	138	3.52	2.60

Project	Mineral Resource Category	Mineral Tonnes Millions	In-situ HM Tonnes Millions	HM Grade (%)
Cyclone	Measured	156	3.81	2.40
	Indicated	48	0.89	1.90
	Total	**203**	**4.70**	**2.30**

Source: AP Analysis and Diatreme's 2023 Annual Report

Table 31: Summary of Silica Sand Ore Reserves and Mineral Resources

Project	Ore Reserve Category	Ore Tonnes Millions	SiO2 Grade %
Galalar	Probable	32.53	99.2

Project	Mineral Resource Category	Material Tonnes Millions	SiO2 Grade %
Galalar	Measured	43.12	99.21
	Indicated	23.12	99.16
	Inferred	9.22	99.10
	Total	**75.46**	**99.18**
NSP	Measured	49.5	99.33
	Indicated	120.50	99.31
	Inferred	65.00	99.27
	Total	**235.00**	**99.29**
WRA	Indicated	10.3	99.2

	Inferred	81.4	99.38
	Total	**91.7**	**99.36**
Total	**Measured**	**92.62**	**99.21**
	Indicated	**153.92**	**99.16**
	Inferred	**155.62**	**99.31**
	Total	**402.16**	**99.26**

Source: AP Analysis and Diatreme Annual Report

As can be seen from the JORC tables, only two of Diatreme's projects, Cyclone and Galalar have reserves. Diatreme's Northern Silica only has mineral resources and Clermont is in the early drilling stage and there has not been any identification of Mineral Resources according to the JORC Code.

7.4 Key personnel

The Executives and Directors of Diatreme are detailed in the table below.

Table 32: Executives of Diatreme Resources Limited

Name & Position	Description
Neil John McIntyre Chief Executive Officer	Neil J. McIntyre has led Diatreme Resources Limited as CEO since August 26, 2014, bringing over 25 years of senior management experience. Formerly Managing Director of Pacific Capital Limited, his expertise in mining and petroleum sectors, coupled with roles in origination and financing, solidifies his prominence in the industry. McIntyre's contributions extend to various listed and unlisted exploration companies.
Tuan Quy Do CFO, Financial Controller & Company Secretary	Tuan Quy Do, BComm., CA, has been the Company Secretary of Diatreme Resources Limited since May 26, 2011, concurrently holding the positions of Financial Controller and Chief Financial Officer. With over 20 years of experience in senior finance roles for public companies in Australia and New Zealand, Mr. Do's expertise contributes significantly to the company's financial management.
Neil MacKenzie-Forbes Chief Geologist	Mr. Neil Mackenzie-Forbes serves as a Chief Geologist at Diatreme Resources Limited. He served as a General Manager of Columboola Joint Venture of Metrocoal Ltd., from December 14, 2011 to September 30, 2013. Mr. Mackenzie-Forbes served as an Exploration Manager of Metrocoal Ltd. from July 1, 2008 to December 14, 2011. Mr. Mackenzie-Forbes graduated from the Queensland University of Technology with a Bachelor of Applied Science in 1993.
Wayne Swan Chairman of the Board	Wayne Swan, BA Hons, is the Independent Non-Executive Director & Chairman of Diatreme Resources Limited since November 2021. Formerly Australia's Treasurer, he received the Euromoney Finance Minister of the Year award in 2011 and is actively involved in international commissions on inclusive prosperity and corporate taxation. Swan is also the President of the Australian Labor Party.
Michael John "Mike" Chapman Director	Michael John Chapman, also known as Mike, is an Independent Non-Executive Director at White Energy Company Limited since June 01, 2023, and a Non-Executive Director of Diatreme Resources Limited since August 1, 2020. He previously served as Chief Operating Officer at White Energy Company Limited from July 19, 2010, to August 31, 2019, and held a similar role at Yancoal Resources Limited from July 1, 2007. With expertise in the development and management of mining projects, Mr. Chapman brings valuable experience to his roles.
Kara Keys Director	Ms. Kara Keys joined Diatreme Resources Limited as a Non-Executive Director on July 19, 2023, bringing a robust background in finance and board leadership. With prior roles at Cbus Super, Powerlink, and United Super Asset Management, she has a strong financial foundation. Additionally, Ms. Keys has been actively involved in advocacy, serving as the chair of Women in Super and contributing to Indigenous communities through her work at the Australian Council of Trade Unions.

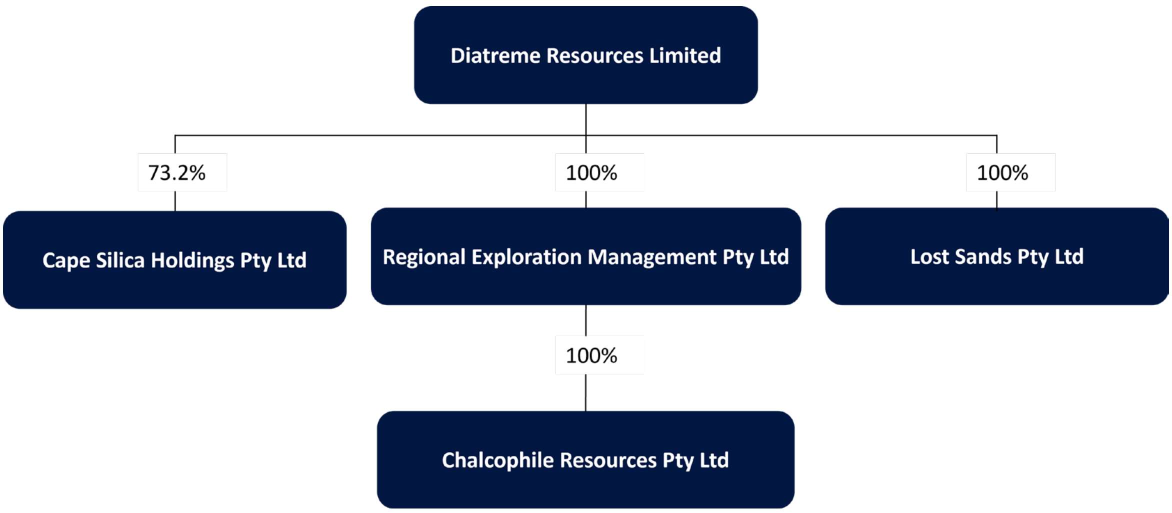
Gregory Barry Starr Director	Mr. Gregory Barry Starr, known as Greg, holds key positions in the corporate sector. Serving as Managing Director, Company Secretary, and CFO of AHP Group Limited, he has directed Candy Club Holdings Limited and serves as Company Secretary at Investor Centre Limited. With executive roles at KBL Mining Limited and memberships in the Australian Institute of Company Directors, he brings extensive experience to various ASX-listed companies, including Admiralty Resources NL and Smart Auto Australia Limited.
Cheng "William" Wang Director	Mr. Cheng Wang, also known as William, is the Director of Investment Banking at AIMS Financial Group and a founding Director of Gulf Alumina Pty. Ltd. With senior management experience in major Chinese state-owned companies like China Poly Group, he has significant business connections in China. Serving as a Non-Executive Director of Diatreme Resources Limited since May 27, 2011, Mr. Wang holds an MBA in finance from the Chinese University of Hong Kong.

Source: Capital IQ

7.5 Ownership and Capital Structure

Diatreme has the following subsidiaries:

Figure 1: Diatreme's Corporate Structure



Source: Capital IQ and AP Analysis

Note: Sibelco has recently completed two tranche investments with Cape Silica Holdings Pty Ltd, yielding a 26.8% Joint Venture. This means that the projects held under Cape Silica Holdings result in 73.2% attributable to Diatreme Resources.

As at 31st of December 2023, Diatreme Resources' top 10 shareholders and total issued ordinary shares are summarised in the table below.

Table 33: Top 10 Shareholders as at 31st of December 2023

As of 31st December 2023 Pre-Takeover DRX Shareholder Name	Number of Ordinary Shares Held	Percentage Held of Issued Ordinary Capital
Ilwella Pty. Ltd.	784,677,120	21.04%
SCR-Sibelco N.V.	742,513,428	19.91%
DELPHI Unternehmensberatung AG	341,307,138	9.15%
Yufeng Zhuang	151,841,819	4.07%
2invest AG	130,434,783	3.50%

Chenfei Zhuang	91,900,000	2.46%
Jie Wu	87,171,308	2.34%
Chenxia Zhou	62,500,000	1.68%
VW Pty Ltd	61,000,001	1.64%
Andrew Tsang	53,177,747	1.43%
Top 10 Shareholders	**2,506,523,344**	**67.20%**
Other Shareholders	1,223,235,782	32.80%
Total Issued Shares	**3,729,759,126**	**100.00%**
Outstanding Options & Performance Rights	66,666,667	
Total Diluted Shares	**3,796,425,793**	

Source: Capital IQ and AP Analysis

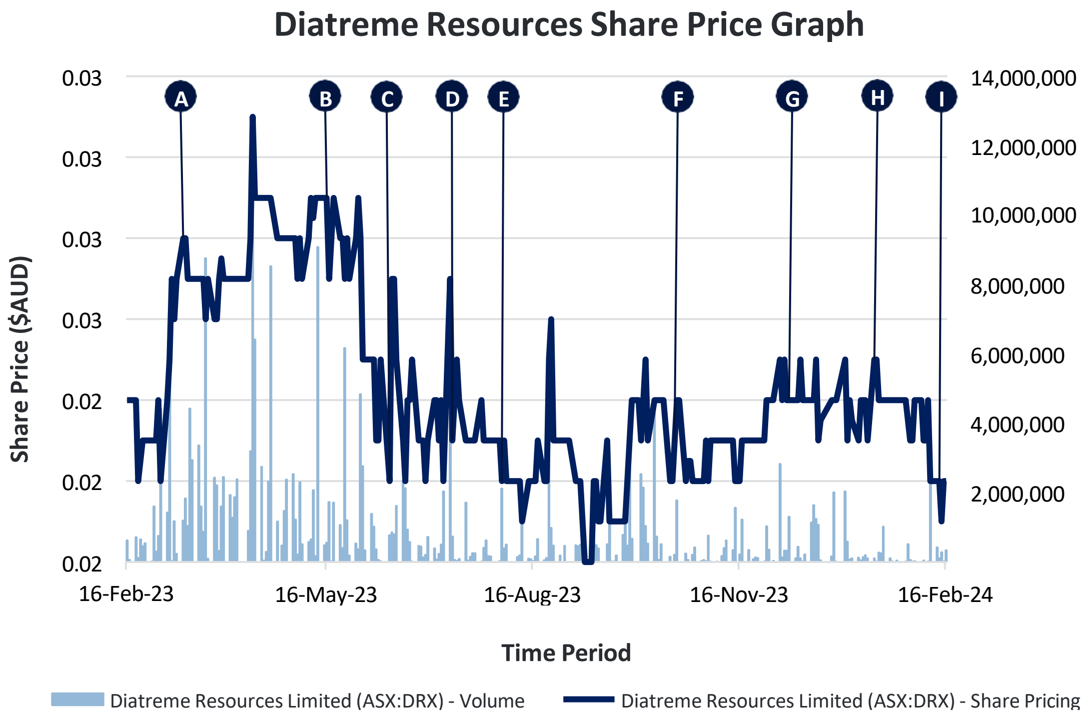
7.6 Share Price Analysis

In order to assess the reliability of using the traded market price of DRX's shares as a basis for determining the fair market value of the shares in DRX we have had regard to:

- the liquidity of the stock over the trading period;
- the 'spread' of ordinary shareholders and the total number of ordinary shares that they hold in the Company, considering any trading or other restrictions applicable to the quoted ordinary shares;
- the level of trading activity of the quoted ordinary shares in the Company (i.e. the volume of trades of the quoted ordinary shares in the market as a percentage of the total quoted ordinary shares, and the frequency of the trades);
- the number and frequency of 'unusual' and/or 'abnormal' trading that takes place in the Company's quoted ordinary shares;
- the presence of any factors that may indicate that trading in the shares is the result of significant speculative trading; and
- the level of knowledge that the 'willing' buyers and sellers have in respect of the Company and the market in which it operates.

We have analysed Diatreme's daily share close price and volume traded during the period from 16th of February 2023 to 16th of February 2024.

Figure 5: Diatreme Share Price Analysis



Source: Capital IQ and AP Analysis

Notable events disclosed by Diatreme's company announcements during the trading period which may have impacted Diatreme's share price movements and trading volumes are set out as follows:

Table 34: Diatreme's Recent Company Announcements

Date	Event	Description
13-Mar-23	A	Major Silica Resource Expansion
19-May-23	B	Permitting Pathway advances for NSP
14-Jun-23	C	Scoping Study for NSP
13-Jul-23	D	Offtake MOU for NSP
03-Aug-23	E	NSP granted Regional Significance Status
17-Oct-23	F	Sibelco 2nd Tranche Investment
06-Dec-23	G	Resources found near NSP
15-Jan-24	H	Diatreme NSP declared a Coordinated Project
16-Feb-24	I	Conditional intention to make a takeover bid for MLM

Source: Capital IQ

The following tables outline Diatreme's trading data. The past 12-months of trading data was used to determine daily turnover and monthly volumes. Typically, the large sophisticated and founding shareholders of small-cap companies are not traders of their shares.

Table 35: Diatreme's Share Overview

Company	Ticker	Shares Outstanding	Free Float
Diatreme Resources Limited	ASX:DRX	3,729,759,126	1,125,940,493

Source: Capital IQ

The following table is a summary of Diatreme's 12-month trading data including average daily volume, low price, high price, and closing price.

Table 36: Diatreme's Trading Data

ASX:DRX	Avg Volume	Share Pricing		
		Low ($AUD)	High ($AUD)	Close ($AUD)
Month Ended				
Mar-23	2,189,076	0.022	0.028	0.027
Apr-23	2,904,536	0.027	0.031	0.028
May-23	1,672,351	0.027	0.029	0.028
Jun-23	850,125	0.022	0.027	0.023
Jul-23	606,599	0.022	0.027	0.023
Aug-23	618,056	0.021	0.026	0.023
Sep-23	692,890	0.020	0.024	0.024
Oct-23	895,300	0.022	0.025	0.022
Nov-23	405,804	0.022	0.024	0.024
Dec-23	686,438	0.023	0.025	0.024
Jan-24	284,285	0.023	0.025	0.023
Feb-24	514,326	0.021	0.024	0.023

Source: Capital IQ & AP Analysis

Given the above data, we note the following regarding DRX's trading data:

- the share price peaked at $0.031 in April 2023 and reached a low of $0.020 in September 2023.
- average daily volumes ranged from 284,285 in January 2024 to 2,904,536 in Apr 2023.

7.7 Liquidity Analysis

The following table displays the volume for each month in the past year, as well as the percentage of total and free float shares for each given month.

Table 37: Diatreme's Liquidity Analysis

Month	Volume Traded	Vol. Traded as % of Total Shares	Vol. Traded as % of Free Float Shares
Feb-24	9,990,525	0.27%	0.89%
Jan-24	11,768,841	0.32%	1.05%
Dec-23	14,822,520	0.40%	1.32%
Nov-23	10,075,778	0.27%	0.89%
Oct-23	18,529,025	0.50%	1.65%
Sep-23	20,032,470	0.54%	1.78%
Aug-23	16,435,796	0.44%	1.46%
Jul-23	16,979,237	0.46%	1.51%
Jun-23	24,234,727	0.65%	2.15%
May-23	45,694,710	1.23%	4.06%
Apr-23	70,653,845	1.89%	6.28%
Mar-23	61,046,491	1.64%	5.42%
Minimum	9,990,525	0.27%	0.89%
Average	26,688,664	0.72%	2.37%
Median	17,754,131	0.48%	1.58%
Maximum	70,653,845	1.89%	6.28%

Source: Capital IQ and AP Analysis

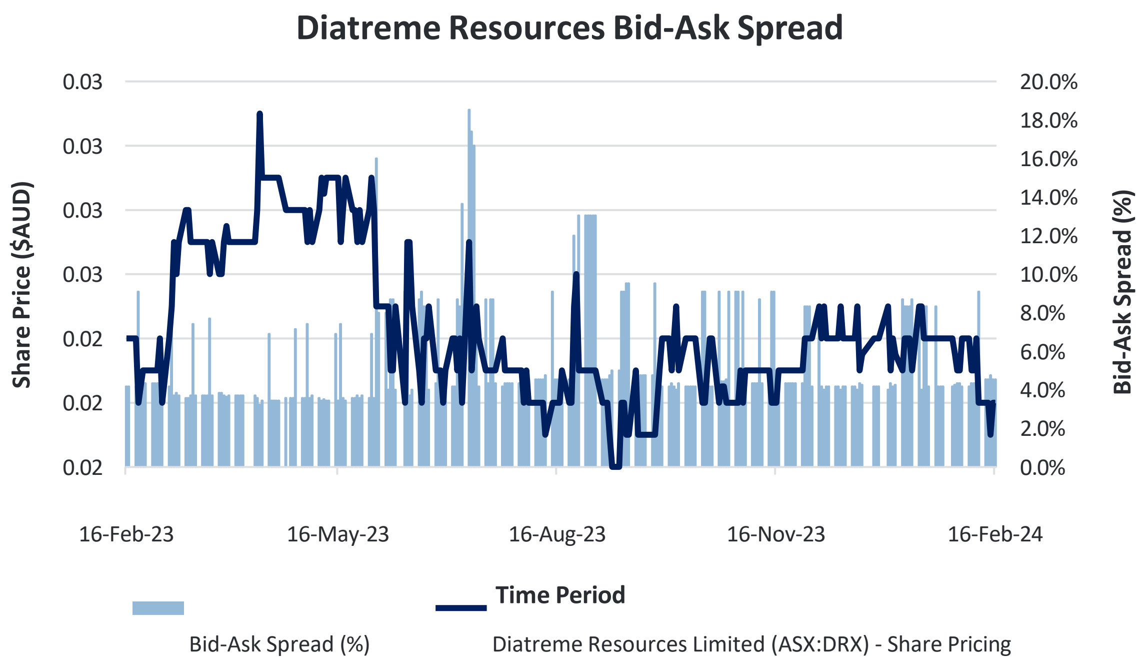
We note the following regarding DRX's volume and liquidity data from March 2023 to Feb 2024:

- the cumulative volume traded of total shares is 8.6% over this period.
- the cumulative volume traded of free float shares is 28.4%.
- monthly volumes ranged from 9,990,525 in February 2024 to 70,653,845 in April 2023.

In accordance with RG 111.86(d), an expert can use the quoted price for a listed security as an appropriate method of valuation, when there is a liquid and active market. Since Advisory Partner identified that less than 10% of trading volume occurred each month over the past year, this method is not considered appropriate.

We have analysed the bid and ask spread in trading data for the previous 12-months. The below chart demonstrates the bid and ask spread from 16th of February 2023 to 16th of February 2024.

Figure 6: Diatreme Bid/Ask Spread



Source: Capital IQ and AP Analysis

In regard to the data provided above, we note the following:

- the minimum spread is 3.23%
- the median spread is 4.35%
- the average spread is 5.61%
- the maximum spread is 18.52%

For a stock to be thinly traded, the stock must have a low volume of trades and also a large bid-ask spread. However, the spread percentage was minimal as the share price difference between the bid and ask prices was one-thousandth of a cent. Therefore, from our analysis, we have determined that Diatreme's shares are thinly traded. As such, we have not used the share price as our primary valuation method.

7.8 Volume Weighted Average Price

We have reviewed the following factors relating to the trading activity of Diatreme's shares on the ASX:

- the daily high, low and closing share price of trades of Diatreme;
- the daily volume of DRX's share trading; and
- the volume weighted average share price ("**VWAP**") of DRX.

Table 38: Diatreme's VWAP

Diatreme VWAP	Low	High	VWAP
Up to 16th February 2024			
1 Day	0.0200	0.0310	0.0220
5 Day	0.0211	0.0303	0.0222
10 Day	0.0214	0.0297	0.0223
1 Month	0.0217	0.0293	0.0229
2 Month	0.0227	0.0287	0.0237
3 Month	0.0229	0.0280	0.0238

Source: Capital IQ & AP Analysis

We note the following regarding with respect to the share price of MLM in the 3-months leading up to the takeover intention announcement.

- The VWAP ranges from $0.0220 (1-day) to $0.0238 (3-month)
- The average VWAP across this range is $0.0228.
- From Advisory Partner's analysis, Diatreme's VWAP has been trading below Metallica's VWAP

7.9 Historical Profit and Loss

We detail below the past 3 years Profit and Loss for Diatreme.

Table 39: Diatreme's Historical Profit and Loss

Income Statement (000's)	Actual		
	CY21	CY22	CY23
Revenue	24	110	456
Other Income	-	8,282	13,848
Total Income	24	8,392	14,304
Expenses			
Employee Benefits	(858)	(1,204)	(1,164)
Exploration expenditure written off	(17)	-	(21)
Share based payment expense	(199)	(339)	(458)
Other Expenses	(887)	(1,578)	(1,951)
Total Expenses	(1,962)	(3,121)	(3,594)
EBITDA	(1,938)	5,271	10,710
Depreciation Expense	(101)	(171)	(214)
EBIT	(2,039)	5,099	10,496
Interest	(111)	(121)	(130)
Pre Tax Income	(2,150)	4,978	10,366
Income Tax	-	-	-
Net Profit	**(2,150)**	**4,978**	**10,366**

Source: Diatreme Annual Reports

7.10 Historical Balance Sheet

We detail below the historical balance sheet for Diatreme as at 31 December 2020, 2021 and 2023.

Table 40: Diatreme's Historical and Current Balance Sheet

Balance Sheet (000's)	Actual		
	CY21	CY22	CY23
ASSETS			
Current Assets			
Cash and Cash Equivalents	6,500	13,641	10,772
Trade and Other Receivables	161	563	314
Total Current Assets	6,662	14,204	11,086
Non-Current Assets			
Investment in joint venture	-	25,117	38,948
Property, Plant and Equipment	254	581	694
Right-of-use Assets	88	29	216
Exploration and evaluation of assets	26,095	15,364	15,540
Other Assets	38	38	47
Total Non-Current Assets	26,474	41,130	55,446
Total Assets	33,136	55,334	66,532
LIABILITIES			
Current Liabilities			
Trade and Other Payables	713	967	1,044

Borrowings	1,518	-	1,525
Lease Liabilities	58	32	96
Provisions	8	9	103
Total Current Liabilities	2,297	1,008	2,768
Non-Current Liabilities			
Borrowings	-	1,509	-
Lease Liabilities	32	-	125
Provisions	46	70	68
Total Non-Current Liabilities	78	1,580	193
Total Liabilities	2,375	2,588	2,961
Net Assets	30,761	52,746	63,571
Equity			
Issued Capital	76,965	93,638	93,638
Reserves	225	559	1,017
Accumulated Losses	(46,429)	(41,450)	(31,084)
Total Equity	30,761	52,746	63,571

Source: Diatreme Annual Reports

7.11 Historical Cash Flow Statement

We detail below the historical Cash Flow Statement for Diatreme as at 31 December 2020, 2021 and 2022.

Table 41: Diatreme Historical Cash Flow Statement

Cash Flow Statement (000's)		Actual	
	CY21	CY22	CY23
Cash from Operating Activities			
Receipts in course of operations	15	17	8
Payments to suppliers and employees	(1,978)	(2,427)	(2,645)
Interest received	9	26	420
Government grants & Incentives	-	-	-
Finance Costs	(193)	(124)	(103)
Net Cash from Operating Activities	**(2,147)**	**(2,508)**	**(2,320)**
Cash From Investing Activities			
Payments for Property, Plant and Equipment	(203)	(480)	(290)
Payments for Exploration and Evaluation assets	(6,349)	(6,583)	(194)
Proceeds from sale of Property, Plant and Equipment	-	108	30
Proceeds from sale of investments	-	-	-
Payments for security deposits	(18)	-	(9)
Net Cash used by Investing Activities	**(6,569)**	**(6,955)**	**(462)**
Cash From Financing Activities			
Proceeds from issue of shares	10,130	17,756	-
Payments for share issue costs	(639)	(1,089)	-
Repayment of Lease Liabilities	(62)	(63)	(86)
Net Cash from Financing Activities	**9,429**	**16,604**	**(86)**
Net Increase / (Decrease) in cash & cash equiv.	712	7,141	(2,868)
Cash and Cash equiv. at beginning of year	5,788	6,500	13,641
Cash and Cash equiv. at end of year	**6,500**	**13,641**	**10,772**

Source: Diatreme Annual Reports

8.0 Valuation of Diatreme's Shares

To arrive at an appropriate valuation of Diatreme's Shares, we have considered various methods as set out in Appendix 2. From our analysis, the most appropriate valuation method applicable is the EV/Resources multiple.

We have based our assessment of EV/Resources on:

- Summary of Diatreme Resources proposed Northern Silica Project Report by Cowie Environmental Services (Appendix E);
- An infrastructure review commissioned by Advisory Partner done by PAEMAC (Appendix D);
- Previous audited annual reports;
- Diatreme's Scoping Study for Northern Silica Project; and
- Any other publicly available information regarding Diatreme's projects.

8.1 Scoping Study

On 14 June 2023, Diatreme announced a 'Positive Scoping Study for Northern Silica Project' which highlighted the proposed operations of the overall Northern Silica Project. Diatreme completed this study with assistance from Ausrocks. In this study, Diatreme estimates a mine life of 25 years with a target production rate of 3Mtpa in the first two years and moving to 5 Mtpa in Phase 2. The study highlights the viability of producing and exporting Silica Sand. The Scoping Study states that it is based on 100% ownership of Cape Silica Holdings Pty Ltd, however this is not the case. Sibelco, Diatreme's second largest shareholder also entered into a joint venture of 26.8%, which implies that Diatreme's ownership of the Northern Silica Project and the Galalar project is 73.2%. This has been accounted for in Advisory Partner's valuation of Diatreme's shares. Furthermore, the Northern Silica Project has no reserves, and only JORC Resources have been identified. NSP's JORC Resources are categorised as Indicated and Inferred, suggesting a lower level of geological knowledge and confidence and does not consider any Modifying Factors.

8.2 Infrastructure

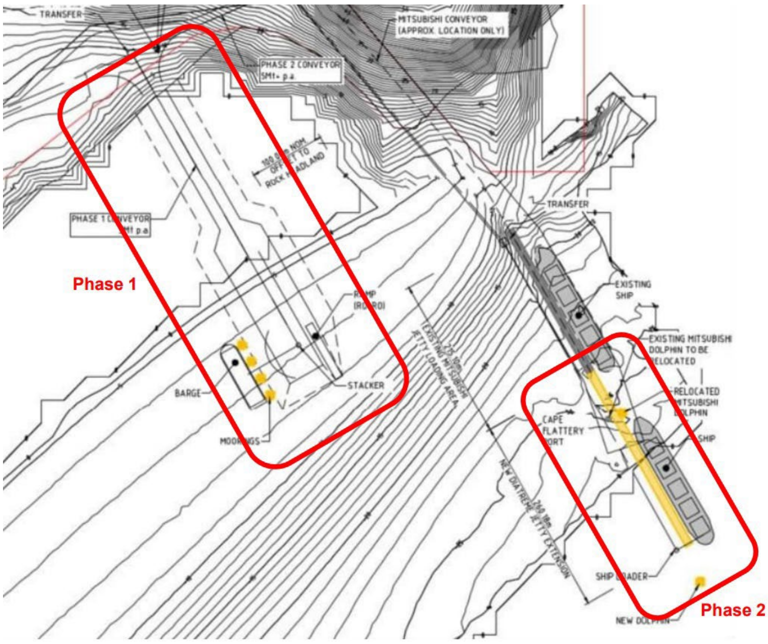
At present, Diatreme's mining and exploration area does not have any infrastructure they can use to generate cash flow. The scoping study highlights key details of the port and site infrastructure that requires development.

Port Infrastructure

To export the material, Diatreme has identified that Ports North Cape Flattery is the most economically viable method. The study highlights two development phases, where Phase 1 involves the construction of a rock wharf to the west of Mitsubishi's existing jetty that is equipped with a conveyor and shiploader system outloading onto 8,500t transhipment barges with an outloading capacity of 3Mtpa. Diatreme's rock wharf is expected to include a concrete roll on-roll off facility.

Phase 2 is an extension of Mitsubishi's jetty to allow for 55,000t bulk carriers to moor directly onto the jetty and be loaded by shiploader. Diatreme expects this to have an outloading capacity of 5 Mtpa. The wharf extension is to be constructed 3 years after the construction of the rock wharf. The figure below outlines the planned infrastructure.

Figure 7: Diatreme's Port Infrastructure Proposal



Source: PAEMAC's Port Infrastructure Report

According to the PAEMAC Report (Appendix D), there are various site constraints during the construction process for the port infrastructure. These include road access, water depth, tidal range, and adverse weather conditions such as Cyclones. These are further explained in the table below.

Table 42: Port Infrastructure Constraints

Constraint	Explanation
Access	Road access to the site is limited to a 4x4 track. It is expected that all material delivery will be through water, with marine plant being mobilised from Cairns or Townsville. Land-side plant for construction of the rock wharf will also need to be mobilised via water and a temporary facility will need to be constructed for the delivery of earthmoving equipment.
Water Depth	Depth at outermost tip of rock wharf is 8m at Lowest Astronomical Tide (LAT)
Tidal Range	Maximum tidal range is 3m, with 95% daily variation falling between 0.34m and 2.57m above LAT
Cyclone and Weather	The site is located in the Eastern Cyclone Zone, with Cyclones typically running from November to April. Provision of Cyclone moorings for all marine construction plant on site would be required Further, previous project experience under these conditions suggest a 15% weather loss to be expected.

Source: PAEMAC's Port Infrastructure Report

To facilitate the construction of Diatreme's wharf extension during Phase 2, the existing mooring dolphin which assists Mitsubishi's current operations will need to be relocated in order to not disturb their operations. However, due to the location of Diatreme's wharf extension, the new dolphin will still be impacted by shipping operations. This will require the periodic relocation of the Self-Elevating Modular Platform (SEMP) to accommodate the passage of vessels for Mitsubishi's operations.

According to PAEMAC's estimate, the overall estimate for the cost of constructing Diatreme's proposed rock wharf is $160.3 million while Phase 2 wharf construction is estimated to cost $236.2 million. These estimates include direct costs, indirect costs, and any contingency provisions. These PAEMAC estimates of the marine infrastructure capital total $396.5m which is significantly higher than the estimated capital costs disclosed in Diatreme's Scoping Study for Off Site Infrastructure, being $175.9m. The PAEMAC Report is detailed in Appendix D.

PAEMAC's report also highlights some key interaction issues with the existing port infrastructure and CFSM Operations. Due to Mitsubishi's operations existing in close proximity, interaction issues are unavoidable and involve the risks detailed in the table below.

Table 43: Port Infrastructure Interaction Issues

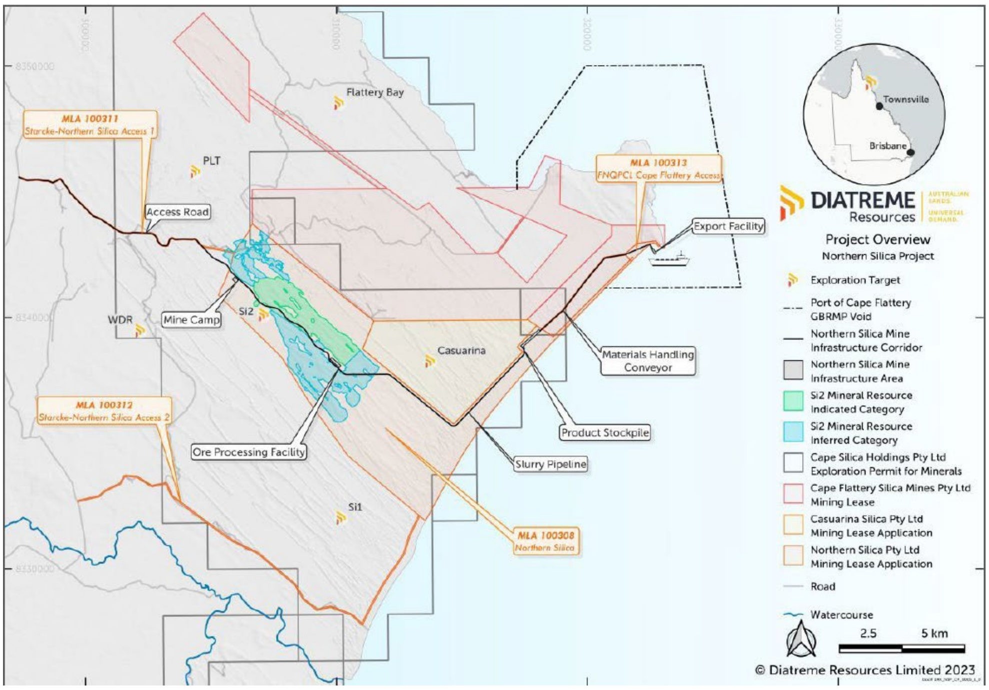
Interaction Issues	Explanation
Phase 1 transhipping	Key risks include interaction/coordination with existing operations and management of shipping operations, operational capacity of transhipping vessels and rate of outloading operations, weather, and capacity of existing dolphins to accommodate simultaneous mooring of bulk- and transhipment-vessels.
Phase 2 Construction	The existing Port of Cape Flattery approach and lack of tugs available means construction area of Phase 2 extension is in the path of incoming vessels. This would mean that all construction activities would need to be coordinated with shipping schedule.
Port Operations post Phase 2 construction	Due to the proximity of both berths, a re-evaluation of current port approach and mooring strategy is required.
Removal/Relocation of Existing Mooring Dolphin	The current existing dolphin is in the path of the construction area and will need to be relocated during the construction phase to reduce impact on current operations.
Safety Issues for Workers	Some key workplace safety considerations include any parting mooring lines that may snap-back.

Source: PAEMAC's Port Infrastructure Report

Site Infrastructure

In regard to the site infrastructure, the study details that site infrastructure will cover approximately 10ha of the Mining Lease and is planned to accommodate roads, parking, mine offices etc which aid in the function of the overall site, while also creating specific areas for non-process areas, such as the Accommodation Village, Water Services and Electrical Services.

Figure 8: Diatreme Project Overview



Source: Diatreme NSP Scoping Study

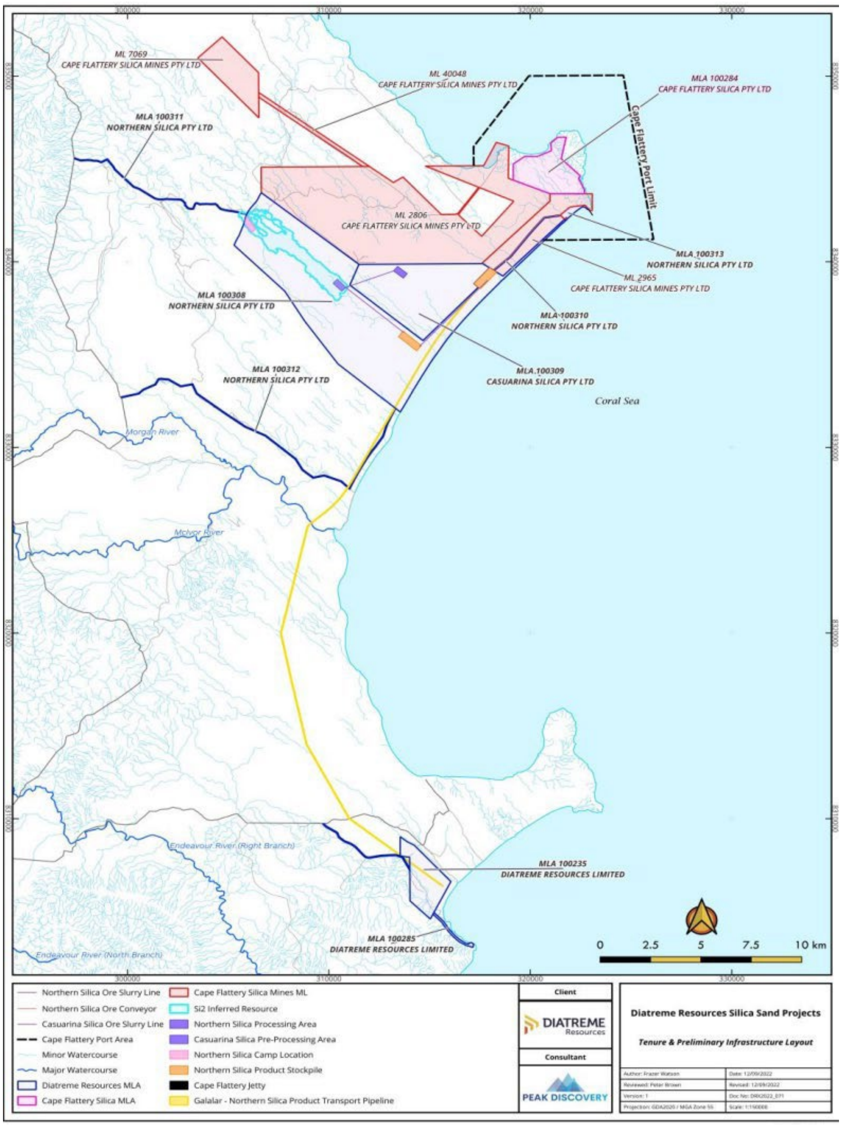
Altogether, the Scoping Study provides the capital cost estimate of $355.6 million when operating at 3 Mtpa and $534.8 million at 5 Mtpa. This estimate includes all direct (process and non-process infrastructure), indirect costs, contingencies, and other allowances. The estimates for marine infrastructure in Diatreme's scoping study are quite low compared to PAEMAC's report. This is because the capital costs in the scoping study outline the total capital cost for the project, while PAEMAC is specific only to the Port Infrastructure.

8.3 Environmental Issues

The Northern Silica Project will trigger a requirement for an Environmental Impact Statement (EIS). Diatreme was recently declared a Coordinated Project. This provides an EIS pathway that supports both an Environmental Authority (EA) and a Controlled Activity Approval. Along with this, it will facilitate any associated permitting requirements that would otherwise be outside the assessment pathways of these approvals such as infrastructure access, maritime infrastructure arrangements and water allocations. The EIS process requires the collection of long-term data and modelling exercises with focus on water allocation, aquatic and terrestrial ecology, marine and coastal environment, soils, and cultural heritage. This will require various plans and analyses to be made such as the Social Impact Assessment.

Diatreme's ASX announcement on 21 October 2022 highlighted a new export option for their Galalar Project. The company plans to build a small diameter (300-500mm) pipeline through its current exploration tenure area EPM 17795 from the Galalar Mine Site to the designated Port area of Cape Flattery as shown below.

Figure 9: Diatreme's Slurry Pipeline Proposal



Source: Diatreme's 'Further export optionality identified for Galalar Project' Announcement

The new export option on the ASX announcement does not outline any costs associated with this option. However, this would require Diatreme to lodge infrastructure applications to the local government, further creating potential for environmental issues for the Galalar project, which has recently withdrawn its application for developing its EIS in 2023.

8.4 Forward Looking Statements

According to ASIC, forward looking statements such as production targets are inappropriate to state unless there are reasonable grounds to do so. The industry standard for reasonable grounds is the JORC Classification. More specifically, ASIC in accordance with Information Sheet 214 highlights that a correctly estimated ore reserve will be sufficient to establish reasonable grounds for a production target.

For Diatreme's Northern Silica Project, the JORC Code shows that only Measured, Indicated and Inferred Mineral Resources are reported. This implies a lower level of geological knowledge and confidence. Further, this classification does not consider any Modifying factors, which are used in the considerations for converting Mineral Resources to Ore Reserves including economic factors. Therefore, we lack confidence that the production target statements mentioned in the Scoping Study hold reasonable grounds for us to rely upon in accordance to ASIC guidelines (RG170). As such, Advisory Partner discounted statements regarding the production target and only used the EV/Resource method to value the shares of Diatreme.

8.5 CFSM Sublease

A lease signed by Mitsubishi's Cape Flattery Silica Mines (Sublessee) with Far North Queensland Ports Corporation Limited (Sublessor) on 02 January 2018, highlights the Sublessee's rights for potential Prospective Users. As Diatreme requires access to this existing infrastructure, the company will be required to enter an agreement with Mitsubishi as either a Full or Part Facility User. As such, the following conditions may need to be met for DRX to use the port facility according to the Lease Document.

Table 44: Key Conditions outlined in the Sublease Agreement

Reference	Description
A.1.7.3	An obligation on the part of the Facility user to concede priority rights for use of the Facility to the the Sublessee.
A.1.7.4	An obligation on the part of a Part Facility User to make good any damage caused to the Facility through its operations or actions of its workers
A.1.7.5	An obligation for Part Facility User to indemnify and release the Sublessor and Sublessee from liability and all claims any way connected with its use of the Facility as a Part Facility User
A.1.7.6	An obligation for Part Facility User to take out and maintain a policy of public liability insurance
B.3	As a Full Facility User, the Sublessee must be informed of the nature, extent and period of operations of the Prospective User. Along with this, the Prospective User must negotiate with the impact on Sublessee's business operations on the Land, the Reserve Throughput Capacity and anything that may be relevant as a result of the Prospective User's use of the facility
B.4	The rights of the Part Facility User under the licence will be subject to the Sublessee's rights of priority in the Essential User Terms referred to in A.1.7.3. This agreement will permit the Part Facility User to have access to and from Sublessor's Property via roads, pathways and other areas.
B.7	Sublessee will consent to a Prospective user who intends to be a Part Facility User to make use of the Sublessor's Property unless the Sublessee considers that the probable consequence would be to materially prejudice, disrupt or interfere with the use that the Sublessee makes of the Facility or the business it conducts from the Land, or the Sublessee will be prohibited from achieving its Reserve Throughput Capacity.
C.10.4	If the Sublessor decided to extend the wharf, a third party making use of the Extended Area may be a Part Facility User or a Full Facility User

Source: AP Analysis

According to Diatreme's Initial Advice Statement (IAS) as highlighted in Cowie Environmental Services report (Appendix E) and taken from the IAS, Diatreme acknowledges that they must gain approval for Mitsubishi's existing marine infrastructure. Extract from the Diatreme NSP IAS states the following:

"Within the Port of Cape Flattery, Diatreme will require access to a barge ramp to support initial construction as well as relevant maritime infrastructure for export of the silica product via an Ocean Going Vessel. At present, the following options (in order of preference) are being considered by Diatreme for maritime infrastructure to support the NSP:

1. *Use of an existing barge ramp operated by Cape Flattery Silica Mine (CFSM) in port limits and the use of the existing Port of Cape Flattery wharf (and conveyor structure) which is owned by the far North Queensland Ports Corporation (trading as Ports North) but operated by CFSM as the lessee. This option involves no new maritime infrastructure being developed for the NSP, although some minor modification*

to existing structures may be required. This option is subject to a suitable commercial and operational agreement being reached with CFSM and Ports North

2. *Construction of a new rock barge facility within the limits of the port to support initial construction and then use of the same structure for transhipment of silica product to a moored ocean-going vessel (OGV). The mooring arrangement for the OGV could either be at the existing berth of the Port of Cape Flattery Wharf (if there is capacity and the activity is permitted by the Port and CFSM) or else the construction of mooring dolphins seaward of the existing wharf.*

3. *Construction of a new barge facility as per option 2 and constructing a permanent extension to the existing wharf (e.g. via lengthening and/or widening of the wharf structure). This option allows for NSP operations to occur completely in parallel with existing CFSM operations.*

There are ongoing commercial discussions between the Far North Queensland Ports Corporation Limited ('Ports North'), Diatreme and CFSM regarding the ability to share existing infrastructure. A 'part user' agreement is being developed that facilitates access to the Ports North land and to the Cape Flattery wharf for investigations to support the EIS. Pending these discussions and further investigations, a final maritime infrastructure option will be selected. However, this is anticipated to take several months and therefore all three maritime infrastructure options (outlined above) will be subject to environmental assessment as part of the EIS process."

If this "part user" agreement is not struck, or any other required agreements with CFSM are not made, Diatreme will be required to reassess their approach for NSP's marine infrastructure which leads to further unknown approval constraints.

The NSP Scoping Study further indicates that Diatreme has intentions to have a production capacity of 3Mtpa initially, then expanding to 5 Mtpa after two years of operations. This combined with Mitsubishi's current production rate, exceeds the current export limit for the facility under the existing Environmental Authority.

8.6 Enterprise value to resource tonne (EV/Resource) Method

As Diatreme has two major resources it explores, the total resources need to be considered. Therefore, different sets of comparable companies were identified. To identify possible comparators, the following screening criteria was used on Capital IQ:

- Industry Classification In Diversified Metals and Mining;
- Business Description includes "Heavy Metals" or "Silica"; and
- Company Type in Public Company.

This screening criteria allowed the search for any Silica Sand or Heavy Metal mining exploration companies which were publicly traded on the ASX. From the list, certain criteria were used to further filter the screen and return the most comparable companies that are applicable for the valuation of Diatreme. These criteria are summarised in the Table below, where green indicates the company meets the criteria, while red indicates that it does not.

Table 45: Silica Sand Comparable Companies

Silica Sand Screen	Silica Sand	EV > $15M	Silica as Major Resource	Market Cap > $20M
Allup Silica Limited				
Australian Silica Quartz Group				
Carbine Resources Limited				
Industrial Minerals Ltd				
Metallica Minerals Limited				
VRX Silica Limited				

Source: Capital IQ and AP Analysis

Table 46: Heavy Metals Comparable Companies

Heavy Metals Screen	Heavy Minerals	EV < $100M	Zircon as majority Grade	Market Cap < $130M
Astron Corporation Limited				
Astute Metals NL				
Base Resources Limited				
Heavy Minerals Limited				
Iluka Resources Limited				
Sheffield Resources Limited				

Source: Capital IQ and AP Analysis

From these tables, companies that met at least three (3) of the criteria were chosen as an appropriate comparable for Diatreme. The tables below outline the EV/Resource multiples for the chosen companies.

Table 47: Silica Sand Comparable Companies Summary

Company Name	Development Stage	Market Cap (AU$M)	EV (AU$M)	Total JORC Resource Silica (Mt)	Implied EV/Resource
Metallica Minerals Limited	Feasibility Study	26.90	22.40	49.50	0.45x
Industrial Minerals Ltd	Exploration	16.50	15.40	12.40	1.24x
VRX Silica Limited	Feasibility Study	58.34	57.20	1,380.50	0.04x
Min		16.50	15.40	12.40	0.04x
Average		33.91	31.67	480.80	0.58x
Median		26.90	22.40	49.50	0.45x
Max		58.34	57.20	1,380.50	1.24x

Source: Capital IQ and AP Analysis

Table 48: Heavy Minerals Mine Comparable Companies Summary

Company Name	Development Stage	Market Cap (AU$M)	EV (AU$M)	Total JORC Resource HM (Mt)	Implied EV/Resource
Astute Metals NL	Scoping Studies	11.91	9.90	127.00	0.08x
Base Resources Limited	Mining	163.74	21.7	57.82	0.38x
Heavy Minerals Limited	Scoping Studies	4.44	4.10	166.00	0.02x
Min		4.44	4.10	57.82	0.02x
Average		60.03	11.90	116.94	0.16x
Median		11.91	9.90	127.00	0.08x
Max		163.74	21.70	166.00	0.38x

Source: Capital IQ

The following observations were made with respect to the comparable companies:

- **Metallica Minerals Limited** is an exploration company, predominantly in Silica sand with their flagship project in the Cape Flattery Region.
- **Industrial Minerals Ltd** is a mineral exploration company with headquarters in Perth, with a portfolio of exploration projects in Western Australia, focussed on Silica Sands.

- **VRX Silica Ltd** is the most advanced pure-play silica sand company that is listed on the ASX and is has most projects located in Western Australia.
- **Astute Metals NL** is a diversified exploration company with operations in the US, Western Australia Northern Territory, with their main focus on the exploration of Heavy Mineral Sands.
- **Base Resources Limited** produces and sells heavy mineral sands in Africa, with a focus on Rutile, Ilmenite and Zircon. The company is dual listed on the ASX and UK's AIM.
- **Heavy Minerals Limited** is an Australian based Industrial minerals company, with projects in Western Australia.

Although these companies vary in their operations to Diatreme, the analysis provides an indicative range of EV/Resources that may be relevant for the purposes of valuing Diatreme. To derive an appropriate multiple, a weighting for each company must be determined. For the Silica Sand screen, all three companies satisfied the criteria, and thus, an equal weighting was given for all three companies. For the Heavy Minerals screening, a different weighting process was required. We ascribed 40% to companies which fulfilled every criterion and deducted 10% weighting for each characteristic missed. The following table highlights our analysis.

Table 49: Multiples Summary

Analysis	EV/Silica Resource	EV/HM Resource
Minimum	0.04x	0.01x
Median	0.45x	0.02x
Average	0.58x	0.04x
Weighted Average	0.58x	0.05X
Maximum	1.24x	0.10x
Skew	0.89	1.68

Source: AP Analysis

To determine the skew, we used the formula below, which highlights the symmetry of a data set:

$$\frac{n}{(n-1)(n-2)}\sum\left(\frac{x_i-\bar{x}}{s}\right)^3$$

Through comparing the comparable list of companies to DRX's business operations, we have determined an appropriate weighting. As a result, we have determined the weighted average multiple and used this as the high end of our range. Furthermore, we have assessed the skew and statistical outliers within the comparable companies and as a such, determined that the median multiple to be used for the low valuation of our range.

As DRX's projects include Silica and Heavy Minerals, the two projects will be valued through a Sum of Parts once an Enterprise Value has been determined for each project. For Diatreme's Northern Silica Project, the appropriate EV/Silica Resource Multiple is determined to be in the range of 0.45x to 0.58x Silica Resource. Similarly, for Diatreme's Cyclone Project, we have determined the appropriate multiple to be in the range of 0.02x to 0.05x HM Resource.

8.7 Surplus Assets

Surplus assets are assets that form part of a business entity or company but do not contribute to the earnings or cash flow generation capacity of that business or company. These are assets which, if sold, would not impact on the revenue or profit generating capacity of the entity. From the analysis of Diatreme's financial statements, cash was concluded to be a surplus asset.

8.8 Valuation conclusion

Advisory Partner's value of Diatreme is derived from the EV/Resources multiple and is summarised as follows:

As Diatreme has excess cash, this was included into the Enterprise Value below. We have used the figures from the latest Annual Report on 31 December 2023 as the most current information on the cash and debt position.

Table 50: Diatreme Net Cash Calculation

Diatreme (Net Debt) / Net Cash	Amount
Cash	30,272
(-) Current Portion of Debt	(1,525)
(-) Long Term Portion of Debt	-
Net Cash	**28,747**

Source: AP Analysis

Our valuation of Diatreme derived from the EV/Resources is summarised as follows. We have used an Resources multiple range of 0.45x to 0.58x for Silica and 0.02x to 0.05x for HM based on the comparable companies listed in section 7.1.

Table 51: Diatreme Valuation Summary

Diatreme Valuation	Low	High
NSP Silica Resources (Mt)	235	235
Comparable EV/Resource Multiple	0.45x	0.58x
Enterprise Value of Silica Projects	106.34	136.3
Enterprise Value Attributable to DRX (73.2%)	**77.84**	**99.77**
WRA Silica Resources (Mt)	91.7	91.7
Comparable EV/Resource Multiple	0.45x	0.58x
Enterprise Value of WRA Resources Attributable to DRX (73.2%)	**30.38**	**38.93**
Heavy Mineral Resources (Mt)	203	203
Comparable EV/Resource Multiple	0.02x	0.05x
Enterprise Value of Cyclone Project	**4.06**	**10.15**
Sum of Parts (AU$M)	**112.28**	**148.85**
Add/ (Less):		
Net Cash	29	29
Equity Value (AU$M)	**141.03**	**177.60**

Source: AP Analysis

This represents a per share value below**:**

Table 52: Diatreme Valuation Per Share

Diatreme Valuation per Share	Low	High
Fair Value of Equity on a Controlling Basis	**141.03**	**177.60**
Fully paid ordinary shares outstanding	3,730	3,730
Outstanding Options & Performance Rights	67	67
Equity Value Per Share	**0.037**	**0.047**

Source: AP Analysis

We have assessed the value of Diatreme based on the EV/Resources method to be in the range of **$0.037** to **$0.047** per share.

8.9 Share Valuation Cross Check

To perform a share valuation cross check, Advisory Partner examined previous capital raises that Diatreme has performed. The five most recent are detailed below:

Table 53: Diatreme's Recent Capital Raisings

Announce Date	Offering Type	Transaction Status	Offering Price	Total Shares Offered	Offering Size (000)
27/06/2022	Common Stock	Priced 27/06/2022	0.03	559,465,000	13,987
27/06/2022	Common Stock	Priced 29/08/2022	0.03	132,111,500	3,303
6/09/2021	Common Stock	Priced 6/09/2021	0.02	438,260,914	10,080
9/10/2020	Share Purchase Plan	Priced 15/10/2020	0.01	253,642,500	2,536
9/10/2020	Common Stock	Priced 9/10/2020	0.01	463,862,800	4,639
6/11/2019	Common Stock	Priced 21/11/2019	0.01	363,428,729	3,634

Source: Capital IQ

From the most recent capital raise of $0.025 per share, it supports Advisory Partner's valuation of Diatreme's shares to be in the range of **$0.025** to **$0.033**.

9 Fair Value of Entity Post-Transaction

9.1 Share Valuation Cross Check

The total value of Diatreme post-transaction on a minority basis is outlined below.

Table 54: Post Transaction Fair Value Summary

Value of entity post-transaction	Low	High
Equity Value of MLM	164.35	205.13
Equity Value of DRX	141.03	177.60
Total value of combined entity	**305.38**	**382.73**
DRX Shares Outstanding	3,729.76	3,729.76
New Shares Issued (1.3319 * MLM Shares)	1,278.52	1,278.52
Total Shares post-transaction	5,008.28	5,008.28
Fair Value of entity post-transaction (minority basis)	**0.061**	**0.076**

10 Assessment of Fairness

In forming our opinion in relation to the fairness of the Offer, we have valued each component of the proposal being the fair market value of a Metallica share and the fair market value of the consideration.

Table 55: Fair Value

Fair Value	Unit	Low Value	High Value
Fair Value of Metallica share on a controlling basis	$	0.223	0.278
Fair Value of combined entity post-transaction (minority basis)	$	0.061	0.076
Premium / (Discount)	%	**-73%**	**-72%**

Source: AP Analysis

Advisory Partner assessed the fair market value of Metallica shares, on a control basis, is between **$0.223** and **$0.278** per share. By comparison, the assessed value of the shares post-transaction is between $0.061 and $0.076. As demonstrated above, the value of the combined entity per share is lower than the value of a Metallica share and as a result, the Offer is considered not fair or reasonable for shareholders of Metallica Minerals.

We note that we have valued the Metallica shares on a controlling basis, which allows for a 30% control premium.

11 Reasonableness

Reasonableness
We deem the offer to be not reasonable to shareholders of Metallica as we consider the disadvantages to outweigh the advantages of the offer. To assist the Shareholders in their decision-making process we have summarized the following:

- The likely advantages and disadvantages associated with the Offer; and
- Alternatives, including the position of Shareholders if the Offer does not proceed.

Shareholders of Metallica should read the full Report, where matters relevant to shareholders are explained in more detail.

Advantages of Approving the Offer
Set out below is a summary of the key advantages to the Shareholders of accepting the Offer.

- **Liquidity of shares**
  Metallica shareholders currently face illiquidity in the trading of their shares. On a typical trading day, Metallica shares are thinly traded and have a wide bid-ask spread. As a result, it is difficult to sell shares in Metallica. The transaction may improve liquidity in the shares of the combined entity by increasing the market capitalisation and outstanding share count.

- **Economies of Scale**
  The combined entity may provide operational improvements for the mines as both companies hold an interest in mines within the same vicinity.

Disadvantages

- **Dilution of Shares**
  As both companies have projects which are pre-development, shareholders are at risk of future capital raising which may dilute minority shareholders. The non-associated shareholders (excludes common shareholders) of Metallica Minerals and Diatreme Resources account for 49.87% of total shares in Metallica Minerals. This takeover offer sees that decrease to 12.73% of total shares in Diatreme. Diatreme's projects hold 513 Mt of resources, while Metallica holds 47 Mt of reserves at their CFS project according to the feasibility study. As such, Diatreme will require substantial efforts to acquire funding for the projects relative to Metallica, which are likely to be through the issuance of new ordinary shares.

- **Voting Power**
  Diatreme has 3.7bn shares outstanding pre-transaction and will issue 1.278bn shares to Metallica shareholders for the transaction. As such, Metallica shareholders will represent 12.73% of total shares post-transaction which is a minor representation in voting power relative to their prior 100% voting power in Metallica Minerals Limited.

- **Project Risk**
  Diatreme's Northern Silica projects are at scoping study stage. This early stage of development has not been proven to be economically viable by an independent technical expert and may face unforeseeable factors in order to develop the project in terms of operational costs, environmental requirements, capital expenditures, and other variables which may impact the value of the mine. By accepting the offer, Metallica shareholders will be exposed to these risks which may determine whether or not these mines are viable and whether they can be funded.

Other Considerations

- **Common Shareholders**
  Metallica and Diatreme have common shareholders. Ilwella Pty. Ltd ("Ilwella") and SCR-Sibelco N.V. (N.V.) are the top two shareholders of both Diatreme and Metallica Minerals. Sibelco publicly backed the takeover offer from Diatreme. Furthermore, Delphi Unternehmensberatung AG (Delphi AG) controls Sparta AG. In particular, Delphi AG owns 100% of VVBeteiligungen AG, a majority shareholder of Deutsche Balaton AG which has a majority ownership of Sparta AG. With Metallica's top three shareholders being Ilwella, Sibelco and Sparta AG this takeover suggests limited dilution for major shareholders who continue to retain a significant ownership of Diatreme post-takeover of Metallica.

- **Mitsubishi (CFSM) Sublease**
  Diatreme is required to build significant port infrastructure near CFSM's operations and wishes to utilise the existing wharf. The Sublease between Far North Queensland Ports Corporation Ltd and Cape Flattery Silica Mines Pty Ltd (CFSM) gives CFSM certain rights that may make this difficult both during operations and construction. However, PAEMAC's report states that the construction of Diatreme's port infrastructure will cause unavoidable disturbances to Mitsubishi's operations. As such, it gives CFSM reasons to not allow Diatreme to access the existing infrastructure or proceed with the planned construction activities. This would impact Diatreme's ability to export.

Shareholder circumstances
Advisory Partner has not considered the effect of the Offer on the particular circumstances of individual Shareholders. Some individual Shareholders may place a different emphasis on various aspects of Proposed Transaction from that adopted in this Report. Accordingly, individuals may reach different conclusions as to whether or not the Offer is in their individual best interests. The decision of an individual Shareholder in relation to the Offer may be influenced by their particular circumstances (including their taxation position) and accordingly, Shareholders are advised to seek their own independent advice.

Other matters
This Report has been requested by the Metallica Directors to assist the Shareholders in their decision to accept or reject the Proposed Transaction.

This Report should not be used for any other purpose and Advisory Partner does not accept any responsibility for its use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of our Report, in whole or in part, should be reproduced without our written consent, as to the form and context in which it may appear.

Advisory Partner acknowledges that this Report may be lodged by the Directors with the ASX.

12 Qualifications, Declarations, and Consents

12.1 Qualifications

Advisory Partner provides corporate advisory services in relation to mergers and acquisitions, capital raisings, corporate restructuring and financial matters generally. One of its activities is the preparation of company and business valuations and the provision of independent advice and expert's reports in connection with mergers and acquisitions, takeovers and schemes of arrangements. Advisory Partner's Director has prepared a number of public expert's reports.

The principal person responsible for preparing this Report on behalf of Advisory Partner is Brett Plant, BBus, MCom, FCA, he is a Director of Advisory Partner. Mr Plant has been actively involved in the preparation of this report. Mr Plant has in excess of 20 years experience in the commerce and the accountancy profession and has been involved in specialist corporate advisory services including company valuations, business sales, due diligence investigations, independent experts' reports as well as other corporate investigations for more than 10 years. Mr Plant has the appropriate experience and professional qualifications to provide the advice offered.

12.2 Declarations

It is not intended that this Report should be used or relied upon for any purpose other than as an expression of Advisory Partner's opinion as to whether the Offer is fair and reasonable and for Shareholders of Metallica as a whole. Advisory Partner expressly denies any liability to any Shareholder who relies or purports to rely on this Report for any other purpose and to any other party who relies or purports to rely on this Report for any purpose.

This Report has been prepared by Advisory Partner with care and diligence and the statements and opinions given by Advisory Partner in this Report are given in good faith and in the belief on reasonable grounds that such statements and opinions are correct and not misleading. However, no responsibility is accepted by Advisory Partner or any of its directors, officers or employees for errors or omissions however arising in the preparation of this Report, provided that this shall not absolve Advisory Partner from liability arising from an opinion expressed recklessly or in bad faith (unless the law otherwise requires).

12.3 Independence

Advisory Partner is entitled to receive a fee of $55,000 to $65,000 (exclusive of GST) for the preparation of this Report. Advisory Partner is also entitled to be reimbursed for any out-of-pocket expenses incurred in the preparation of this Report. Except for this fee and the reimbursement of these expenses, Advisory Partner has not received and will not receive any pecuniary or other benefit, whether direct or indirect, in connection with the preparation of this Report.

Neither the signatory to this Report nor the Advisory Partner holds securities in Metallica Minerals. No such securities have been held at any time over the last two years.

Neither the signatories to this Report nor Advisory Partner have had within the past two years any business relationship material to an assessment of Advisory Partner's impartiality with in Metallica Minerals or its associates.

Prior to accepting this engagement, Advisory Partner considered its independence with respect to Metallica Minerals and any of its respective associates with reference to ASIC Regulatory Guide 112 entitled "Independence of Experts". In Advisory Partner's opinion, it is independent of in Metallica Minerals and its associates.

A draft of this Report was provided to Metallica and its advisors for confirmation of the factual accuracy of its contents. No significant changes were made to this Report as a result of this review and there was no alteration to the methodology, evaluation or opinions set out in this Report as a result of issuing the draft.

12.4 Indemnity

Under the terms of our engagement, Metallica has agreed that no claim shall be made by Metallica or any of its subsidiaries against Advisory Partner, any of their directors, officers, partners, employees or agents (Indemnified Persons) to recover any loss or damage which Metallica or any of its subsidiaries may suffer by reason of or arising out of anything done or omitted in relation to the provision of the services by Advisory Partner, provided that such loss or damage does not arise from the negligence or willful default of any of the Indemnified Persons. Metallica has unconditionally indemnified Advisory Partner and their respective officers, employees and agents against any losses, claims, damages, liabilities, costs, expenses and outgoings whatsoever (Losses) which they may suffer or incur directly or indirectly arising out of:

- Advisory Partner relying on information provided by Metallica or any of its employees, agents or advisers; or
- Metallica failing to provide Advisory Partner with material information in relation to the Proposed Transaction.

Further, Metallica must pay and must indemnify Advisory Partner against any Losses in relation to any investigations, enquiries or legal proceedings by ASIC or any other competent regulatory body arising out of, or in connection with, the Proposed Transaction, including reasonable legal expenses and disbursements incurred by Advisory Partner and fees payable to Advisory Partner attributable to time reasonably spent by its staff assessed at its hourly rates to the extent that investigation, enquiry or legal proceeding is not caused by an act or omission of the Indemnified Persons.

12.5 Consents

Advisory Partner consents to the issuing of this Report in the form and context in which it is to be included in the Target Statement to be sent to the Shareholders. Neither the whole nor any part of this Report nor any reference thereto may be included in, or attached to, any other document without the prior written consent of Advisory Partner as to the form and context in which it appears.

Advisory Partner takes no responsibility for the content of the Target Statement or any other documents provided to the Shareholders, other than this Report.

12.6 Other

The opinion of Advisory Partner is made at the date of this Report and reflects circumstances and conditions as at that date. In particular, Advisory Partner provides no representations or warranties in relation to the future value of shares of Metallica.

Shareholders who are in any doubt as to the action they should take should consult their own independent professional advisers.

Advisory Partner has prepared a Financial Services Guide as required by the Act. The Financial Services Guide is set out at the beginning of this Report.

Appendix A: Sources of Information

In preparing this report we have had access to and relied upon the following principal sources of information:

- In preparing this report, Advisory Partner identified certain matters that required specialist expertise. In particular, given the importance of Metallica's definitive feasibility study (DFS) in our assessment of value, we considered it appropriate to seek a specialist expert assessment of the reasonableness of the assumptions underlying the DFS, the conclusions in the DFS and whether any critical risks have been omitted from the DFS. We also sought some general observations from SRK on the mining and geological information available in Diatreme's scoping study. SRK was engaged by us and provided that feedback and any additional commentary on areas we considered appropriate to confirm. Relevantly, SRK was not engaged to value the Mineral Resources or mining tenements of Metallica, nor provide a report in accordance with the VALMIN Code on any matter nor to review and comment on a final draft of this report. Accordingly, we are comfortable, based on the work that SRK has undertaken under our engagement with them, that our valuation of the Cape Flattery Project, which we have undertaken on a discounted cash flow basis (DCF), is appropriate, is based on reasonable assumptions and is not subject to any critical flaws. In seeking this specialist input from SRK, we are satisfied that SRK is independent of Metallica;
- audited annual reports of Metallica for the years ended 30 June 2021 to 30 June 2023;
- audited accounts for half-year ended 31 December 2023;
- details of Metallica's shareholders and share register as at 30 June 2023;
- historical trading volumes and prices of Metallica's ordinary shares traded on the Australian Stock Exchange ("ASX");
- various ASX announcements;
- meeting with management and management working papers in relation to the transaction;
- Statement on Monetary Policy, Reserve Bank of Australia, February 2023;
- Prime Gain Limited Market Report;
- PAEMAC Report (Appendix D);
- Cowie Environmental Services Report (Appendix E);
- S&P Capital IQ;
- Definitive Feasibility Study July 2023 and Updated November 2023;
- Diatreme NSP Scoping Study June 2023;
- other publicly available information on Metallica and Diatreme.

In addition to the above, Advisory Partner has had various discussions with the management, officers and advisers of Metallica regarding the nature of Metallica's businesses, their operations, financial position and prospects.

Appendix B: Valuation Methods

In conducting our assessment of the fair market value of the Company, the following commonly used business valuation methods have been considered:

Discounted Cash Flow Method

The discounted cash flow **("DCF")** method is based on the premise that the value of a business or any asset is represented by the present value of its future cash flows. It requires two essential elements:

- the forecast of future cash flows of the business asset for a number of years (usually five to 10 years); and
- the discount rate that reflects the riskiness of those cash flows used to discount the forecast cash flows back to net present value **("NPV")**.

DCF is appropriate where:

- the businesses' earnings are capable of being forecast for a reasonable period (preferably five to 10 years) with reasonable accuracy;
- earnings or cash flows are expected to fluctuate significantly from year to year;
- the business or asset has a finite life;
- the business is in a 'start up' or in early stages of development;
- the business has irregular capital expenditure requirements;
    - the business involves infrastructure projects with major capital expenditure requirements; or
    - the business is currently making losses but is expected to recover.

Capitalisation of Future Maintainable Earnings Method

This method involves the capitalisation of estimated future maintainable earnings by an appropriate multiple. Maintainable earnings are the assessed sustainable profits that can be derived by the vendor's business and excludes any one off profits or losses. An appropriate earnings multiple is assessed by reference to market evidence as to the earnings multiples of comparable companies.

This method is suitable for the valuation of businesses with indefinite trading lives and where earnings are relatively stable or a reliable trend in earnings is evident.

Net Realisable Value of Assets

Asset based valuations involve the determination of the fair market value of a business based on the net realisable value of the assets used in the business.

Valuation of net realisable assets involves:

- separating the business or entity into components which can be readily sold, such as individual business units or collection of individual items of plant and equipment and other net assets; and
- ascribing a value to each based on the net amount that could be obtained for this asset if sold.

The net realisable value of the assets can be determined on the basis of:

- *orderly realisation*: this method estimates fair market value by determining the net assets of the underlying business including an allowance for the reasonable costs of carrying out the sale of assets, taxation charges and the time value of money assuming the business is wound up in an orderly manner. This is not a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value;

- *liquidation*: this is a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value; or
- *going concern*: the net assets on a going concern basis estimates the market value of the net assets but does not take into account any realisation costs. This method is often considered appropriate for the valuation of an investment or property holding company. Adjustments may need to be made to the book value of assets and liabilities to reflect their going concern value.

The net realisable value of a trading company's assets will generally provide the lowest possible value for the business. The difference between the value of the company's identifiable net assets (including identifiable intangibles) and the value obtained by capitalising earnings is attributable to goodwill.

The net realisable value of assets is relevant where a company is making sustained losses or profits but at a level less than the required rate of return, where it is close to liquidation, where it is a holding company, or where all its assets are liquid. It is also relevant to businesses which are being segmented and divested and to value assets that are surplus to the core operating business. The net realisable assets methodology is also used as a check for the value derived using other methods.

These approaches ignore the possibility that the company's value could exceed the realisable value of its assets.

Share Market Trading History

The application of the price that a company's shares trade on the ASX is an appropriate basis for valuation where:

- the shares trade in an efficient market place where 'willing' buyers and sellers readily trade the company's shares; and
- the market for the company's shares is active and liquid.

Constant Growth Dividend Discount Model

The dividend discount model works best for:

- firms with stable growth rates;
- firms which pay out dividends that are high and approximate free cash flow to equity;
- firms with stable leverage; and
- firms where there are significant or unusual limitations to the rights of shareholders.

Special Value

Special value is the amount which a potential acquirer may be prepared to pay for a business in excess of the fair market value. This premium represents the value to the potential acquirer of potential economies of scale, reduction in competition or other synergies arising from the acquisition of the asset not available to likely purchases generally. Special value is not normally considered in the assessment of fair market value as it relates to the individual circumstances of special purchases.

Appendix C: Discount Rate

Overview

When applying the discounted cash flow method, the cash flows expected to be generated by an asset are discounted to their present value by using a discount rate that reflects the relative risk of the investment, as well as the time value of money.

Selection of an appropriate discount rate to apply to the forecast cash flows of a company fundamentally is a matter of judgment. There is a formulaic approach that can and is derived by theory; however, a mechanistic application of financial theory can result in a discount rate that is not applicable in reality. Hence, it should be stressed that there is no "correct" discount rate. Despite the growing acceptance and application of various theoretical models, many company may rely on less sophisticated approaches and use relatively arbitrary "hurdle rates" which do not vary significantly over time despite interest rate movements.

There are three main considerations to the determination of an appropriate WACC, namely cost of equity, cost of debt and debt/equity mix.

The cost of equity was derived from the Capital Asset Pricing Model ("CAPM") methodology. The CAPM is probably the most widely accepted and used methodology for determining the cost of equity capital. However, while the theory underlying the CAPM is rigorous, the practical application is subject to shortcomings and limitations and the results of applying the CAPM model should only be regarded as providing a general guide.

Weighted Average Cost of Capital (WACC)

To ensure consistency with the cash flow projections of Metallica, the WACC should be on a nominal post tax basis. The standard formula used to calculate a nominal post tax WACC under a dividend imputation system is given by:

$$WACC = r_e \frac{E}{V} + r_d \frac{D}{V}\left(1 - t_c(1-\gamma)\right)$$

Where:

V	sum of debt and equity values;
E	value of equity;
D	value of debt;
Re	cost of equity;
Rd	cost of debt;
t_c	the corporate tax rate; and
γ	the value of imputation tax credits (gamma)

This is an after-tax discount rate to be applied to nominal ungeared after-tax cash flows.

Overview of the CAPM Framework

The CAPM provides a theoretical basis for determining a discount rate that reflects the returns required by diversified investors in equities. CAPM is based on the assumption that investors require a premium for investing in equities above risk free investments (such as Australian government bonds). The premium is commonly known as the market risk premium and notionally represents the premium required to compensate for investment in the equity market in general.

The risks associated with an investment in a company can be classed as either specific risks or systematic risks. Specific risks are risks that are specific to a particular company or business and are unrelated to movements in equity markets. Systematic risk is the risk that returns from an investment or business will vary with market returns in general. If returns on an investment are expected to be perfectly correlated with returns on the market, then the return required on the investment would be equal to the return required from the market (ie. the risk-free rate plus the market risk premium).

CAPM postulates that the return required on investment or assets can be estimated by applying to the market risk premium a measure of systematic risk described as the equity beta factor. The equity beta for an investment reflects the covariance of the return from that investment with the return from the market as a whole. Covariance is a measure of relative volatility and correlation. The equity beta of an investment represents its systematic risk only. It is not a measure of the total risk of a particular investment. In general, an investment with an equity beta greater than 1 is riskier than the market and an investment with a beta of less than 1 is less risky.

The formula for deriving the cost of equity using CAPM is as follows:

$$R_e = R_f + \beta(R_m - R_f)$$

Where:

R_e	is the expected return on equity;
R_f	is the risk free rate;
β	is the equity beta factor;
R_m	is the expected market return; and
$R_m - R_f$	is the market risk premium.

The equity beta for a company is normally estimated by observing the historical relationship between returns from the company or comparable company and returns from the market in general. In our analysis, we have chosen to observe the historical 3-year relationship between returns from comparable companies to Metallica.

Risk free rate

The risk-free rate compensates the investor for the time value of money including the expected inflation rate over the investment period. In practice, for going concern Australian companies, the ten-year Commonwealth Government Bond rate is a widely used and accepted proxy for the risk-free rate. This rate is a nominal rate and therefore includes inflation.

For the purpose of this report, Advisory Partner has adopted the ten-year Australian Government Bond rate as at 1st of March 2024 at 4.12% as a proxy for the risk-free rate in determining the cost of equity for Metallica.

Equity market risk premium

The market risk premium (Rm - Rf) represents the additional return that investors require to invest in equity securities as a whole over a risk-free investment which is not observable and therefore a historical premium is used as a proxy. Australian studies [1] have been limited but indicate that the long run average premium has been in the order of 6.0-6.5% measured over more than 100 years of data.

The market risk premium is not constant and may change over time as investors perceive that equities are more risky than at other times and will increase or decrease their expected premium.

A market risk premium of 6.0-6.5% has been assumed which Advisory Partner believes is within the range of generally accepted figures of long-term market risk premiums in the Australian capital market.

Beta

The beta coefficient is a measure of the expected volatility and therefore risk of a company's stock relative to the market portfolio.

The beta of a stock is determined by the characteristics of the firm and is generally based on three factors:

- the nature of revenue and the extent to which it is cyclical;
- operating leverage; and
- financial leverage.

The expected beta cannot be observed; therefore, the historical beta is usually used as a proxy for the expected beta. A beta can be estimated by regressing the excess returns of the stock or comparable against the excess returns of the index representing the market portfolio.

Equity Beta estimate

To obtain an equity beta, Advisory Partner has considered the betas of coal explorers and producers listed on the ASX. The betas for listed silica sands comparable companies and other mining companies that may be considered comparable to Metallica are listed below.

Ticker	Name	Total Debt	Mkt. Cap.	Debt / Capital	Levered Beta (5-year)	Unlevered Beta
ASX:DRX	Diatreme Resources Limited	1.53	78.30	1.91%	0.67	0.66
ASX:IND	Industrial Minerals Ltd	0.14	14.40	0.96%	-0.71	-0.71
ASX:ASQ	Australian Silica Quartz Group	0.00	14.10	0.00%	0.88	0.88
ASX:FL1	First Lithium Limited	0.00	26.30	0.00%	0.12	0.12
ASX:INF	Infinity Lithium Corporation Limited	0.00	33.80	0.00%	1.36	1.36
ASX:MMC	Mitre Mining Corporation Limited	0.00	25.40	0.00%	0.51	0.51
ASX:EV1	Evolution Energy Minerals Limited	0.00	25.90	0.00%	0.73	0.73
ASX:ZNC	Zenith Minerals Limited	0.00	30.00	0.00%	1.49	1.49
ASX:GRE	GreenTech Metals Limited	0.00	23.10	0.00%	1.03	1.03
ASX:VRC	Volt Resources Limited	0.00	26.80	0.00%	1.21	1.21
ASX:AZI	Altamin Limited	0.00	21.90	0.00%	1.66	1.66
ASX:SRX	Sierra Rutile Holdings Limited	0.00	35.60	0.00%	NA	NA
ASX:MLM	Metallica Minerals Limited	0.40	26.90	1.47%	1.05	1.04
Min		0.00	14.10	0.00%	-0.71	-0.71
Median		0.00	26.10	0.00%	0.88	0.88
Mean		0.14	29.63	0.24%	0.81	0.81
Max		1.53	78.30	1.91%	1.66	1.66

1. The impact of differing capital structures is removed in the calculation of the unlevered betas (Asset Beta).

There are significant measurement issues with beta, which means that only limited reliance can be placed on such statistics. Even measurement of historical betas is subject to considerable variation. It requires a considerable degree of judgement.

The beta is measured on the cash flows returned to equity holders and is therefore after interest. Accordingly, a firm's beta also reflects its capital structure. Since financial leverage is likely to alter between firms it is generally erroneous to make comparison of betas between firms without regard to each firm's leverage. Accordingly, the Company's target debt and equity mix is relevant.

The betas can all be degeared (or 'delevered') to remove the impact of leverage. The method is set out below:

$$Beta(ungeared) = \frac{Beta(geared)}{\left(1 + \frac{D}{E} \times (1 - t)\right)}$$

The ungeared or 'asset' betas can then be analysed to determine an appropriate asset beta for the subject of the valuation, and it can be regeared (or 'relevered') to reflect the appropriate capital structure. Rearranging the above equation, we have:

$$Beta(geared) = Beta(ungeared) \times \left(1 + \frac{D}{E} \times (1 - t)\right)$$

The table on the previous page indicates that the median beta for comparable business is approximately 0.88, and when unlevered is approximately 0.81.

Given the differences between Metallica and the comparable companies, at best we regard the data as relevant and informative but not determinate.

We have adopted the average unlevered beta of 0.81 and 0.88 for the low and high our analysis.

Cost of Debt Capital

The rate of return required by providers of debt capital is the rate a prudent debt investor would require on interest bearing debt. This rate should reflect the long-term rate of interest required by a debt provider to a business such as the business subject to valuation.

Metallica does not carry any interest-bearing debt, however, for the purposes of evaluating a discount rate under the WACC/CAPM framework, we've anticipated borrowing costs of the company over the forecast period. The management team of Metallica have provided an unsigned term sheet for a $100m debt facility at 12% interest rate. We've used this as a proxy to estimate the cost of debt and believe a range of 10-15% is appropriate.

In recognition that WACC is applied to ungeared after tax cash flow projections and that interest payments to debt providers creates a tax shield, the resulting adjusted debt rate for inclusion in the WACC calculation is 0%.

The rate of tax used for calculating the tax shield adjustment is 30%, representing the corporate rate of tax.

Imputation Credits (Gamma)

The WACC set out above assumes a "classical" tax system. The CAPM model is constructed to derive returns to investors after corporate taxes but before personal taxes. Under the US classical tax system, interest expense is deductible to a company but dividends are not. Investors are also double-taxed on dividends received.

Under Australia's dividend imputation system, domestic equity investors now receive a taxation credit (franking credit) for any tax paid by a company, hence eliminating the double taxation associated with US dividends. There are schools of economic thought that argue that the taxation benefits of dividend imputation should be incorporated into any analysis of value. However, Australian studies of the relative value of dividend imputation are controversial and have produced mixed results.

It is worth noting that franking credits can only be utilised in the hands of domestic Australian investors and to a lesser extent, superannuation funds who are eligible for a refund of unused imputation credits (provided that franking credit trading rules are met). Foreign investors are unable to access attached franking credits and hence attribute no additional value to franking credits.

While a number of studies point towards the proposition that some value should be attributed to dividend imputation, Advisory Partner considers that the evidence provided by the different schools of thought as to the value that investors attributes to dividend imputation is unclear and as a result we have attributed no value to the Imputation Credits.

Debt and equity mix

According to the principles of modern portfolio finance theory on capital structure an investor, as owner, in a business would seek to utilise an appropriate amount of debt capital in the financial structure of the business on the basis that debt capital is generally cheaper than equity capital and the cost thereof is generally tax deductible. This proposition is balanced, however, with the fact that as the proportion of debt is increased, the financial risk of the business is increased. Accordingly, a target proportion of debt to total capital employed in the business is sought which balances the advantages of this source of funds with the disadvantages attached thereto.

Modern finance theory does not provide a solution to determine the optimum level of gearing in a business, however the use and amount of debt used by participants in the market is observable. Consequently, we have made reference to the debt/capital of comparable companies noted on page 48 in order to benchmark an appropriate level of gearing to assume for the purposes of deriving the WACC applicable to the business of Metallica. We have also had regard to MLM's current gearing level.

In arriving at an appropriate capital structure for Metallica we have had regard to the capital required to fund the initial capex for the project. According to the discounted cash flow analysis, the company requires $240m in capital expenditures from July 2025 to July 2027. Metallica has provided a term sheet, unsigned, which offered $100m in debt. As such, we've assumed the remaining $140m is to be equity.

We consider the appropriate capital structure is based upon the capital required to fund the project. Based on this, we have used a target capital structure of 40% debt and 60% equity.

Specific Company Risk

A company's cost of equity as derived by the CAPM reflects the level of systematic (or non-diversifiable) risk borne by the company. It does not reflect non-systematic or company specific risks that are inherent in Metallica's operations.

- **Project Risk**
  There are general operational risks associated with mining that may cause delays in production or affect expected cashflows from the project. These may include equipment and maintenance, variability in quality of deposits, labour disputes, groundwater issues and other risks which may impact the project value.

- **Financial Risk**
  There are great financial funding requirements to develop a mining project. There are risks associated with Metallica Minerals' ability to raise the capital required to fund the project. The raising of equity capital may be required to develop CFS, as such, there is a risk that shareholders will face dilution. In addition, there are risks that development will exceed expected costs and cause

project delays. Further, the price of the product may shift due to changes in the supply and demand of the market.

- **Environmental Risk**
  Mining projects face unique environmental risks which impact production including habitat disruption, water pollution, or air emissions. There are regulatory and legal requirements to fulfill which may take longer than expected, or these requirements may change during the pre-development phase. Metallica had previously faced delays due to the Department of Climate Change, Energy, the Environment, and Water (DCCEEW) decision to require an Environmental Impact Statement (EIS) for the project.

- **Weather Risk**
  The feasibility study plans that the mine will be operational 365-days per year and is based on a Time Usage Model (TUM). This has been historically demonstrated by the nearby Mitsubishi mine, however, there is risk of significant weather events as the project operates in tropical northern Queensland and is exposed to cyclone risk.

A specific company risk premium of 7.00% has been included to adjust the cost of equity for these company specific risk factors.

These company-specific risks in this situation include a number of the legal risks discussed in this report but also include issues associated with the size and lack of liquidity in the stock.

Summary of WACC Parameters

The table below summaries the parameters used and Advisory Partner's determined WACC range.

Weighted Average Cost of Capital	Low	High
Cost of Debt		
Pre-Tax Cost of Debt	10%	15%
Tax Rate	30%	30%
After-Tax Cost of Debt	**7.0%**	**10.5%**
Cost of Equity		
Unlevered Equity Beta	0.81	0.88
Relevered Equity Beta	1.19	1.29
Equity Market Risk Premium	6.50%	6.50%
MLM Equity Risk Premium	7.75%	8.39%
Risk Free Rate	4.12%	4.12%
Specific Company Risk	7.00%	7.00%
Cost of Equity	**18.87%**	**19.51%**
Proposed Capital Structure		
Debt % Mix	40%	40%
Equity % Mix	60%	60%
Capital	100%	100%
Debt/Equity	0.67	0.67
Weighted Average Cost of Capital (WACC)	**14.12%**	**15.91%**

Source: Capital IQ Pro and AP Anal

NORTHERN SILICA SAND PROJECT

ROCK WHARF CONSTRUCTION AND PORT OF CAPE FLATTERY JETTY EXTENSION

BASIS OF ESTIMATE

Document Number
E0533-BOE-001

Approvals

C	04/04/2024	PH	DS	AS
B	18/03/24	PH	DS	AS
A	11/03/2024	PH	DS	AS
Rev	**Date**	**Author**	**Checked by**	**Approved by**

Amendments

Rev	Section	Type of Revision	Date
A	All	Document creation	11/03/2024
B	13	Amendment	18/03/24
C	5.2.4	Minor update	04/04/2024

1 Contents

2 Purpose

DRX have produced a Study Document titled “Northern Silica Sand Project Scoping Study Summary” (June 2023). The Study Document details various costs associated with the project including the marine component. PAEMAC have been engaged by Advisory Partner Pty Ltd to review and provide an independent report (BoE) on the capital expenditure required to construct the marine component (only) of the DRX project which is the subject of the study document.

For the avoidance of doubt the marine component consists of those items detailed in Figure 2. This report details the assumptions and methodology used to develop the construction cost estimate for the marine component at Cape Flattery in Far North Queensland (Figure 1) namely:

- Construction of a new rock wharf; and
- Extension of the existing Port of Cape Flattery (PCF) shiploader jetty.

The PCF jetty is owned by Ports North (PN) and is operated by Cape Flattery Silica Mines Pty Ltd (CFSM). The existing PCF consists of a 220 metre, single trestle jetty and conveyor running from the mine to a 220m offshore berth and ship loader. There is also a general-purpose wharf for the import of fuel and other supplies for the mine and for the mooring of two line boats which assist in ship berthing.

Figure 1: Site Location

As indicated within the Study Document, the proposed new development will be undertaken in a staged approach (Figure 2):

- Phase 1 involves the construction of a rock wharf to the west of the existing PCF jetty with a conveyor and shiploader system outloading onto 8,500t transhipment barges. The rock wharf will also include a concrete roll on – roll off (RORO) facility to handle logistics for the mining operation. This is expected to have an outloading capacity of 3 million tons per annum (Mtpa).
- Phase 2 is the extension of the existing PCF jetty to allow for 55,000t bulk carriers to moor directly to the jetty and be loaded by shiploader. This phase is expected to have an outloading capacity of 5 Mtpa. The wharf extension will be constructed using piled foundations with a steel truss deck structure to support the conveyor system. Phase 2 is expected to commence operations 3 years after construction of Phase 1.

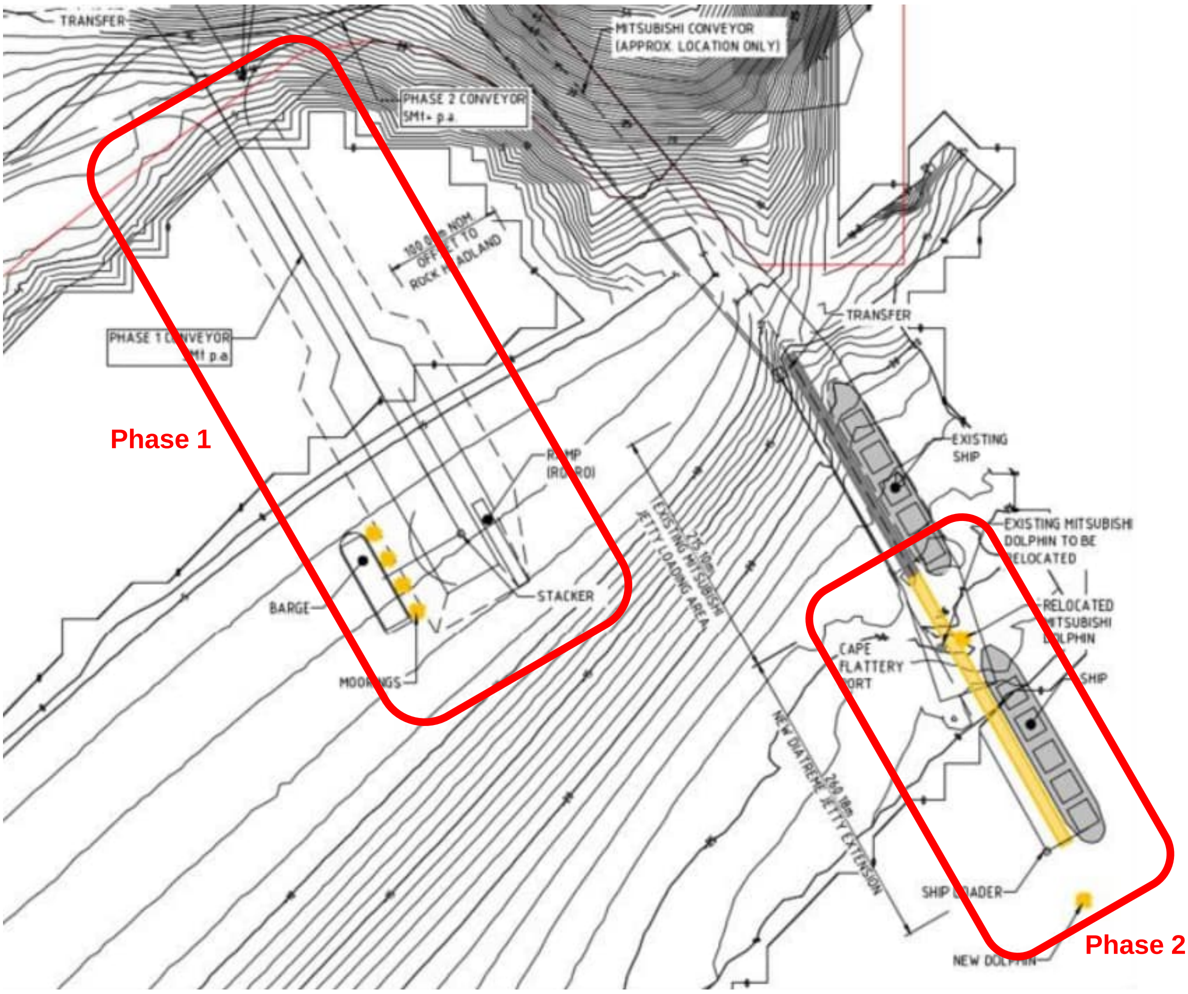


Figure 2: Site plan and general overview of phased construction approach

3 Terminology/Abbreviations

Table 1: Abbreviations

Acronym	Meaning
AUD	Australian Dollars
CAPEX	Capital Expenditure
Base Estimate	Estimated costs excluding contingency
BoE	Basis of Estimate
CFS	Cape Flattery Silica (Metallica Minerals)
CFSM	Cape Flattery Silica Mines (Mitsubishi Corporation)
Contractor	Contractor, Supplier
DRX	Diatreme Resources Limited
DWT	Deadweight Tonnage
EPCM	Engineering, Procurement and Construction Management
EWP	Elevated Work Platform
FEL	Front End Loader
GST	Goods and Services Tax
HAT	Highest Astronomical Tide
HLS	Heavy Lift Ship
LAT	Lowest Astronomical Tide
MOF	Material Offloading Facility
MSL	Mean Sea Level
Mtpa	Million tons per annum
MTO	Material Take-Off
OPEX	Operational Expenditure
PCF	Port of Cape Flattery
PN	Ports North
QLD	Queensland (AU)
RORO	Roll on Roll off
SEMP	Self-Elevating Modular Platform
SIMOPS	Simultaneous Operations
Study Document	Northern Silica Sand Project Scoping Study Summary (June 2023) by DRX
SOW	Scope of Work
TOS	Top of Steel
TSV	Trans-Shipment Vessel
WBS	Work Breakdown Structure

4 Estimate Scope

The Estimate is a Class 5 estimate in accordance with the principles of The Association for the Advancement of Cost Engineering (AACE) Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries.

The construction estimate is based on the preliminary concept contained within the Study Document for the rock wharf and jetty extension and associated works (Figure 3). In developing this report, a number of assumptions have been made on methods, design and construction which is consistent with the class of estimate.

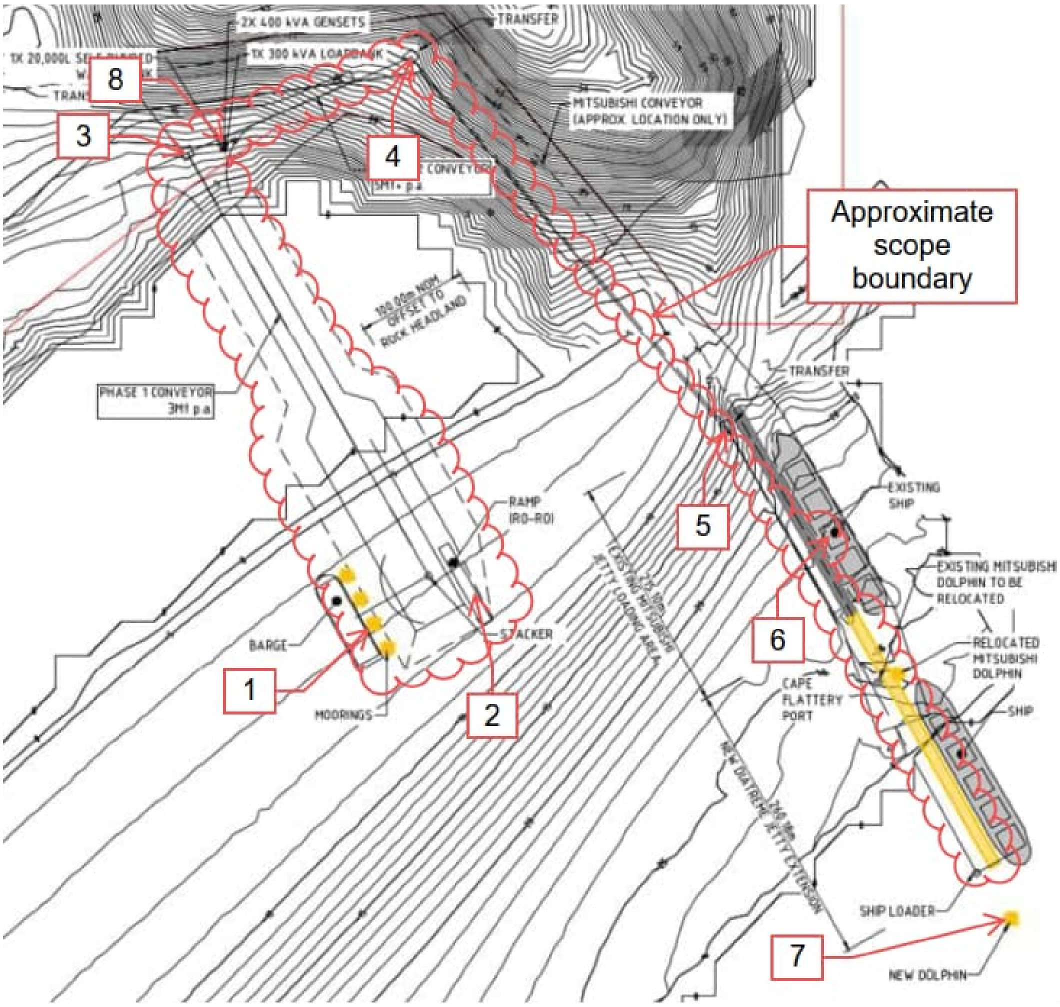


Figure 3: Scope of estimate

The scope of work is summarised as follows with reference to Figure 3:

- Phase 1: Construction of new rock wharf to the west of existing PCF jetty.
  - Transport of quarry fill material to site.
  - Construction of rock wharf.
  - Local winning of fill material.
  - Transport and installation of rock armour.
  - Construction of transhipment barge mooring [1].
  - Construction of concrete RORO facility [2].
  - Installation of conveyor back to the land side transfer tower, including transfer tower shown at [3]. This transfer tower forms the battery limit of material handling costing.
  - Reticulation of power and water from on-site generation and water storage/treatment [8].

- Extension of existing PCF wharf
  - Construction of new conveyor support trestle structure, incl. transfer towers [4, 5].
  - Relocation / replacement of existing dolphin [6].
  - Construction of wharf extension using piles and modular steel superstructure.
  - Construction of 1 x mooring dolphin [7].
  - Construction of 5 x berthing dolphins incl. fenders, bollards and quick release hooks.
  - Fabrication, delivery and commissioning of shiploader.
  - Reticulation of power and water from on-site generation and water storage/treatment [8].

The estimate includes direct costs to construct the Project under a Construct Only contracting model with the works expected to be completed by specialist contractors engaged directly by the Owner.

The estimate includes the direct costs to deliver the Works:

- Contractor preliminaries, mobilisation and demobilisation.
- Construction of shiploader jetty and dolphins using marine equipment.
- Supply and delivery of shiploaders.
- Land-based construction of abutments.
- Engineering design and support during construction.
- Temporary works and safe access platforms.
- Pre/post construction hydrographic survey.
- Contingency.

The estimate is based on the following inputs:

- Diatreme Resources ASX Announcement: Positive Scoping Study for Northern Silica Project strengthens development plans dated 14/06/2023.
- Diatreme Resources Northern Silica Sand Project Scoping Study Summary dated June 2023.
- Queensland Land Registry Sublease 718758708 dated 21/05/2018.
- As-built drawings CF-S-005(3), -022(3), 051(5).
- 2001 upgrade works as-built drawings 7681-(101 to 110).
- Email communication between dated 01/03/2024.
- Tide data from AusTides Cape Flattery (Australian Hydrographic Office).
- Maps from Queensland Globe (State of Queensland 2023).
- Ports North Annual Report 2022-23.
- Department of Transport and Main Roads Port Procedures and Information for Shipping - Ports of Cape Flattery, Cooktown and Port Douglas (January 2024).
- Ports North Long Term Maintenance Dredging Management Plan, Port of Cape Flattery.

Exclusions from the estimate include:

- Owner costs, including:
  - Project management and contract administration.
  - Working capital.
  - Operating costs.
  - Costs incurred due to losses in productivity during construction.
  - Finance and escalation.
  - Environmental approvals.
  - Sunk costs for studies or investigations.
- Dredging in any form.
  - Phase 1: Long length of rock wharf reaches water of sufficient depth for transhipment vessels (TSV).
  - Phase 2: Per Ports North document "Long Term Maintenance Dredging Management Plan – Port of Cape Flattery", "The natural deep-water location, and coastal hydrodynamics are sufficient mechanisms to avoid the need for maintenance dredging."
- Transhipment vessels, permanent cyclone moorings, offshore moorings, tugs and line boats.

- Approvals (environmental, state and/or federal).
- Access roads, haul roads, and supporting infrastructure.
- Demolition (other than the existing Mitsubishi mooring dolphin)
- Site rehabilitation or remediation.
- Removal of Phase 1 rock wharf after completion of Phase 2.
- Land side feed conveyors outside of the scope boundary shown in Figure 3
- Power generation and water storage/treatment (assumed hired and maintained as OPEX cost).
- Land side utility infrastructure (electricity, water, communication, etc.) outside of the scope boundary shown in Figure 3.
- Escalation.

5 Construction Methodology

5.1 Assumptions

The following assumptions were made during the build-up of the methodology:

- The new wharf extension is accessible by a heavy lift ship (HLS).
- While there is a 4x4 track to the site, all construction plant and materials are to be brought in by landing craft and barges.
- 1/3rd of the fill material for the construction of the rock wharf will be imported from commercial quarry operations near Cairns, while the remaining 2/3rds of core materials will be won locally from borrow pits.
- Rock wharf batter slope was assumed to be 1:1.5.
- No sealing (asphalt/concrete) would be installed on the rock wharf top surface. A capping layer of 0.5m thick imported rock has been included.
- Provision has been made for accommodation for Contractor's workforce on or near to site.
- Camp and office accommodation mobilized to site via landing craft ex. Cairns.
- Staff will fly in and out via helicopter (noting use of existing airstrip is not possible, and transit times via vessel too long).
- Battery limits as per boundary indicated in Figure 3.
- The shiploader in Phase 1 was assumed to be purchased and retain 50% of its value for resale after three years.
- No allowance was made for the removal of the rock wharf and/or conveyor system (Phase 1) after Phase 2 comes online.
- Nil provision for nightshift construction works.
- Nil provision for escalation.
- No legislative impediments to construction (such as environmental license conditions).
- Labour, staffing and plant costs based on 2024 rates for resource project works.
- Working calendar assumed at 2 in 1 roster & 7 working days per week.
- Provision included for fuel at $2.10/litre.

5.2 Site Constraints

5.2.1 Access

Road access to the site is understood to be limited to a 4x4 track. For this reason, all material delivery will take place via water, with marine plant being mobilised from Cairns or Townsville.

Land-side plant for the construction of the rock wharf (e.g., articulated dump trucks, excavators, front-end loaders) would also need to be mobilised via water, likely via landing barge. A temporary facility will need to be constructed for the first delivery of earthmoving equipment (Figure 5 and 5).

Figure 4: Construction of the offloading facility

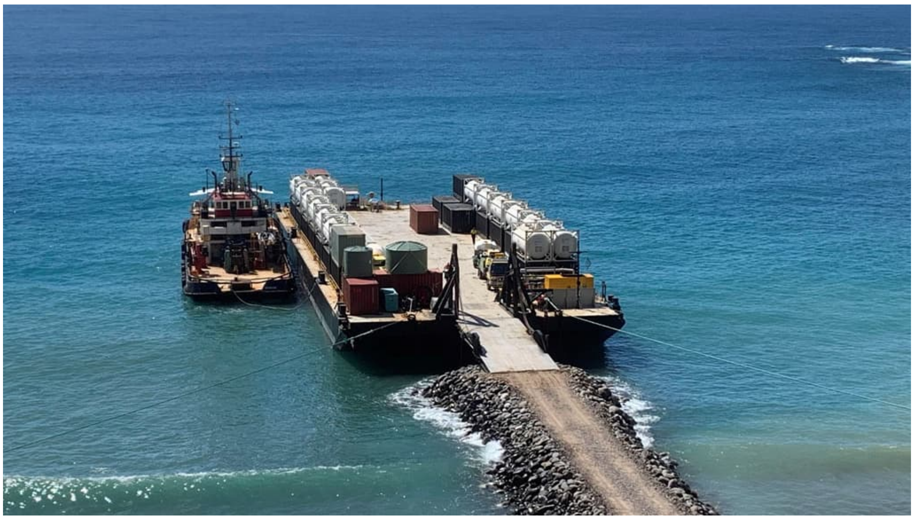


Figure 5: Temporary barge offloading facility

Delivery of the wharf extension modules and shiploader will be via Heavy Lift Ship (HLS) (Figure 6).

Figure 6: Modulated wharf construction using HLS

All crew will be flown in an out via helicopter (Figure 7) operating from a temporary helipad, carrying 6 crew per flight.

Figure 7: Helicopter used for crew transfer to and from site

5.2.2 Water Depth

Water depth at LAT along the existing wharf increases from 17m at BD-5 to 24m at MD-1. Depth at the outermost tip of the rock wharf was taken at 8m at LAT.

5.2.3 Tidal Range

The maximum tidal range is 3.0m, but 95% of the daily variation should fall within twice the standard deviation, between 0.34m and 2.57m above LAT (Figure 8).

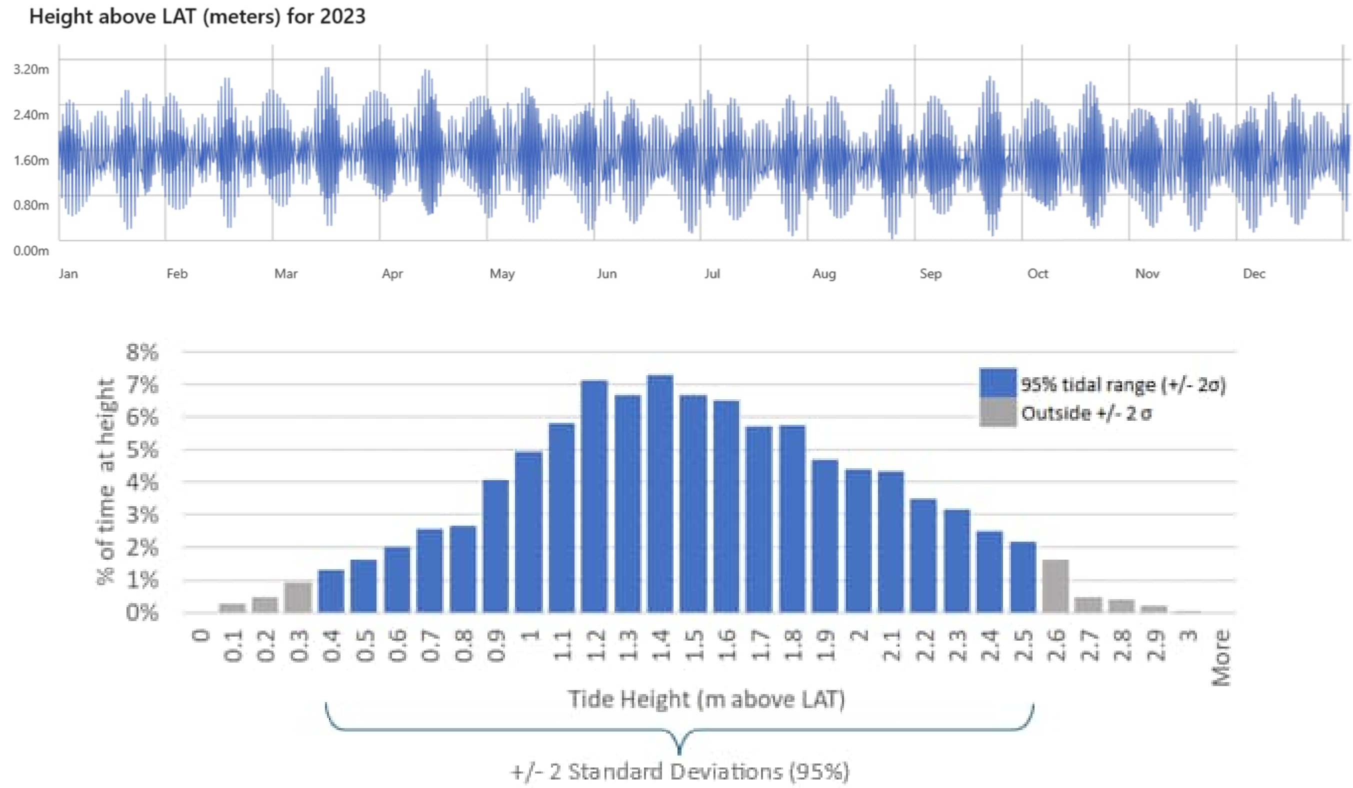


Figure 8: Forecast tidal range for Cape Flattery, 2023. Metres above LAT (0m LAT = 0m CD) (Source: AusTides, Australian Hydrographic Office)

5.2.4 Cyclones and Weather

The site falls inside the eastern cyclone zone, with the season typically running from November to April, although tropical cyclones can and do occur outside of this period. The long-term average number of tropical cyclones in this zone using data from 1969-2022 is 4, with a 76% chance of fewer storms occurring (source: BOM Australian Tropical Cyclone Outlook for 2023-24). Provision of cyclone moorings for all marine construction plant on site during this period would be required.

The local prevailing wind direction is SE (37.82%) followed by SSE (26.26%) (5-year data from WillyWeather Cape Flattery), indicating that the site is exposed to the prevailing wind. Local annual wind speed data suggests less weather loss would be experienced between October and March (Figure 9). However, this does coincide with cyclone season, so stand-down allowance and suitably rated moorings would need to be included. Previous project experience under these conditions suggests a 15% weather loss is to be expected (averaged over a continuous year). This represents time lost due to a combination of poor weather and seastate caused by rain, wind, swell, waves and other adverse conditions.

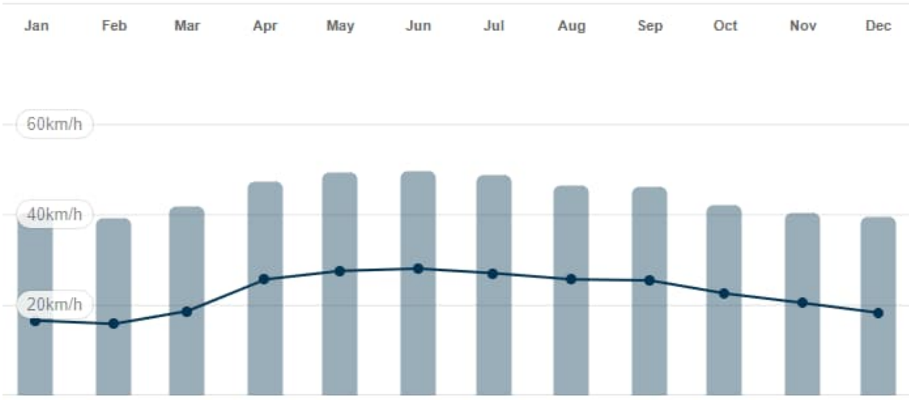


Figure 9: Max and average wind speed, 2013-23 average (Source: WillyWeather Cape Flattery)

5.3 Project Schedule

The estimate has been aligned with a high-level schedule of works based on a working calendar of a 2 in 1 roster with 7 working days per week.

Phase 1 construction of the rock wharf has been assumed to take 50 weeks on site from mobilisation to completion (not including any preliminary works and/or procurement).

Phase 2 construction has been assumed to take 60 weeks on site from mobilisation to completion (also excluding any preliminary work and/or procurement).

5.4 Phase 1 - Transhipment Facility

5.4.1 Rock Works

The proposed rock wharf is 450m long and 35m at the apron, extending into water depths of approximately 8m below LAT (Figure 10) with dimension interpolated from the Study Document. The wharf is assumed to consist of a crushed rock core, protected by geofabric followed by filter and armour rock layers (Figure 11). The assumed fill specification consists of 1/3rd imported rock fill material, and 2/3rds sand material locally won on site (Figure 12). The outer primary and secondary armour material is assumed as all imported. Provision was made in the estimate for a surveyor and an on-site laboratory for QA/QC during construction.

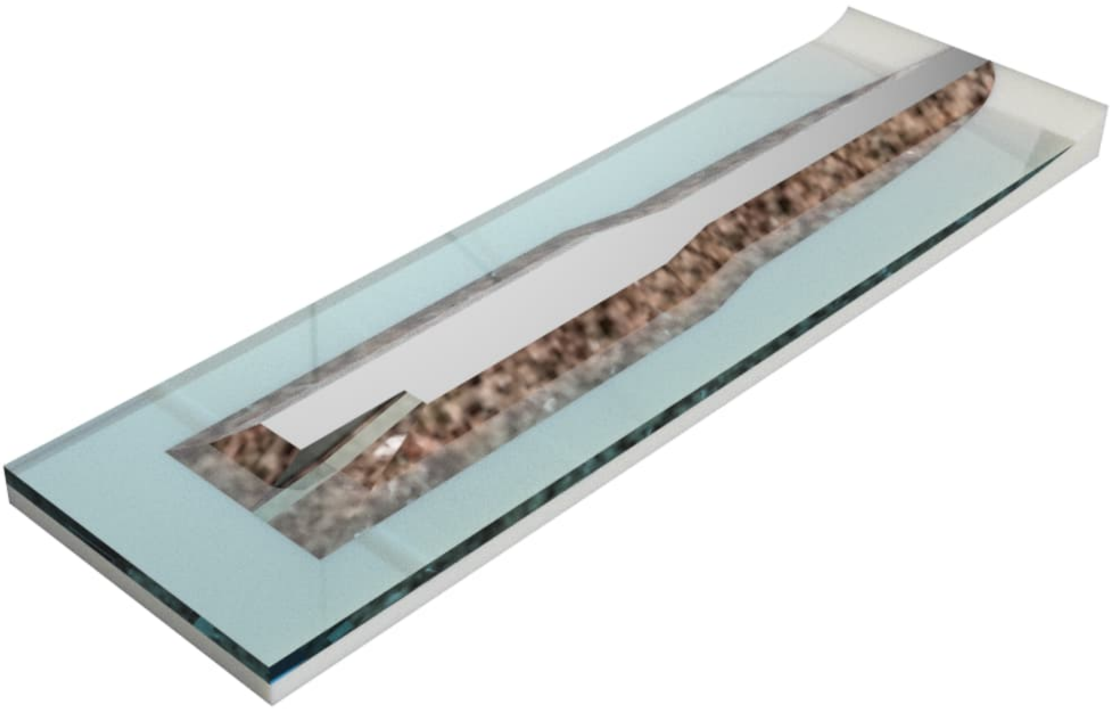


Figure 10: Interpolated approximate layout for rock wharf. Tide shown at LAT.

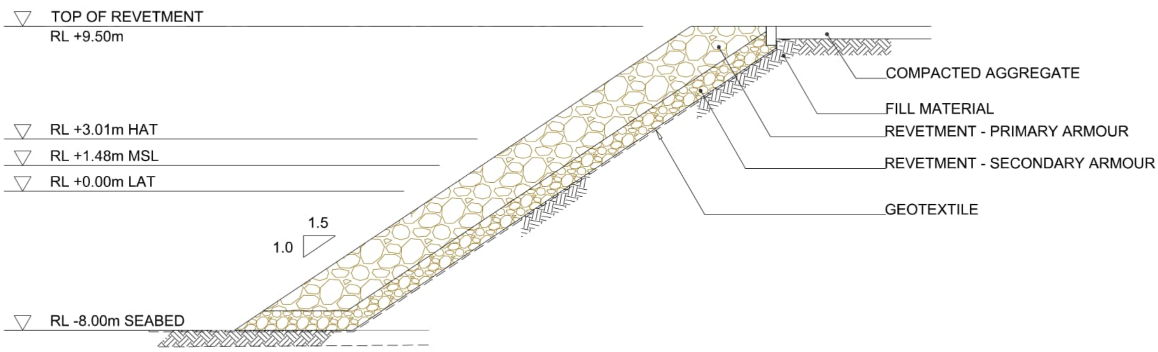


Figure 11: Assumed cross section of wharf construction showing fill and armour

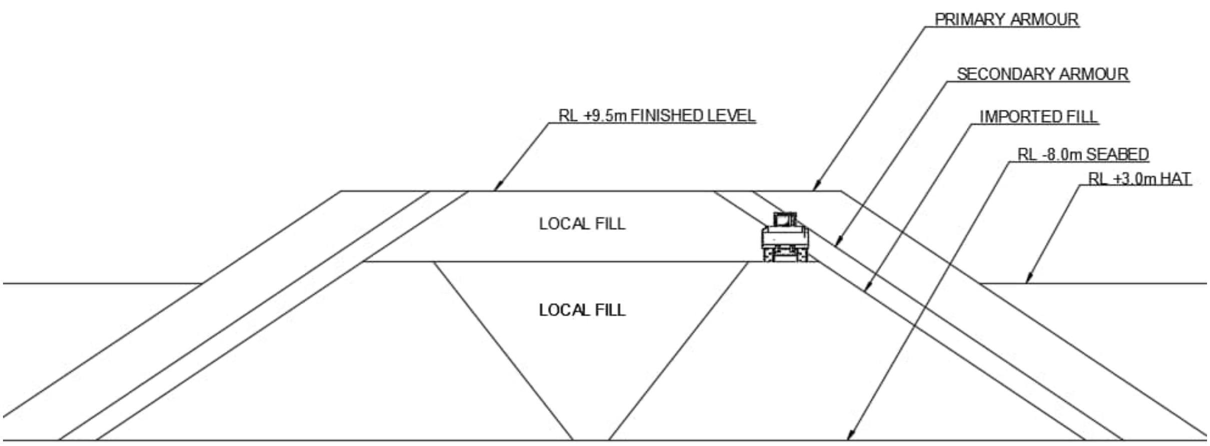


Figure 12: Assumed cross section of rock wharf illustrating proposed construction methodology

Imported materials will be brought in on rock barge from Cairns using 4 x rock barges, each bringing 2500t - 5000t to site per load (Figure 13). These barges would likely need to be sourced from Singapore. A temporary loadout facility will need to be constructed from locally won materials to enable offloading of rock barges. A small landing craft would be used to offload plant to create the loadout facility and a temporary helipad. As an indication of the complexity of this operation, this equates to over 120 barge loads of rock materials.

Figure 13: Typical rock barge being loaded by front-end loader

It is noted that the Phase 1 rock load out concept would benefit from significant design refinement and value engineering. The quantity of rock to be imported, coupled with the remote, environmentally sensitive location means construction costs are significant. Without specific design details for Phase 1 assumptions have been used to develop the basis of costing. The site is exposed to prevailing weather conditions and susceptible to both erosion and coastal processes. No outer breakwater, overtopping protection or revetment structure has been indicated as required within the Study Document, however without protection from seastate, vessels using the facility are susceptible to the prevailing site conditions. As such no additional provisions for seastate protection have been considered within the BoE.

Figure 14: Typical rock barge being offloaded by front-end loader

Construction of the wharf is completed by creating two bunds of imported crushed rock material (imported to ensure quality). These bunds are pushed out from landside using a combination of front-end loaders (FEL), excavators and articulated dump trucks. The bunds are then filled in and the entire wharf brought to final height using locally won sand material to limit the quantity of imported material. Once the core has been completed, it is covered by geofabric followed by a layer of secondary armour rock. Finally, a layer of appropriately sized armour rock is installed. The top surface of the rock wharf consists of compacted aggregate, with compaction achieved using a pad roller.

Figure 15: FEL, excavator and dump truck working to place fill for typical armoured rock wharf

Figure 16: Installation of geofabric on top of fill

Figure 17: Installation of primary and secondary rock armour on top of geofabric

5.4.2 Transhipment Berthing Structure

The single TSV berth will be constructed on the western edge of the rock wharf. It was assumed to follow the structure of a similar facility (Figure 18) suitable for 8,500 DWT self-propelled barges. The berth will consist of 4 vertical piles braced back to the rock wharf with struts, anchored into the wharf via concrete blocks. Fenders will be mounted to the front face of the vertical piles.

Figure 18: Reference transhipment barge berth

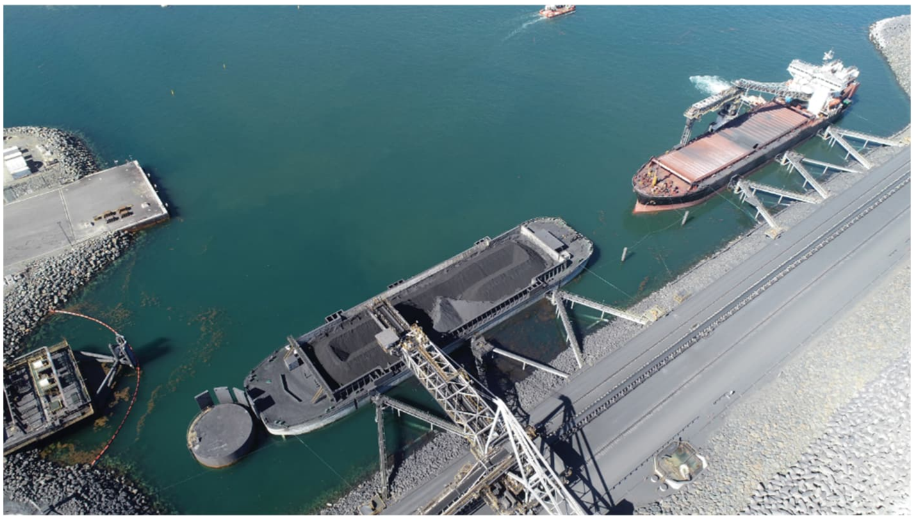


Figure 19: Reference transhipment barge mooring structure

Installation of the 4 mooring piles would be completed using a piling frame mounted to a Self-Elevating Modular Platform (SEMP) (Figure 20). The frame is fully manoeuvrable and is fitted with two installation gates which secure the pile in location and ensures the pile is installed within construction tolerances.

The land-side concrete works necessary for anchoring the struts will be completed using a small concrete batch plant (Figure 21). Struts will be installed using a crane mounted on the SEMP, in conjunction with an Elevated Work Platform (EWP) and a access systems attached to the piles.

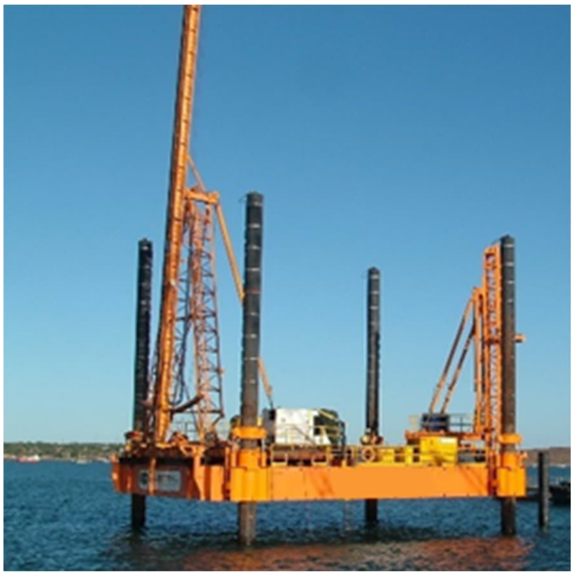


Figure 20: SEMP used to install mooring piles.

Figure 21: Small mobile concrete batch plant

5.4.3 Landing Ramp

The concrete landing ramp extends from the southeastern corner of the rock wharf for access by RORO vessels or landing craft. The ramp is constructed in-situ. The ramp is required to allow additional port logistics access for mining operations which has been interpreted to mean a RORO vessel capable of vessel-to-shore transfer of track and wheel mounted mining equipment as listed in Table 4-3 of the DRX Scoping Study.

Figure 22: Landing ramp for RORO vessel or landing craft

5.4.4 Shiploader

The shiploader is assumed to be a radial type with an extendable boom for TSV loading (Figure 23). The conveyor will feed to the shiploader pivot hopper before being loaded onto the barge. The shiploader was assumed to be purchased for the Phase 1 period (i.e. 3 years) and sold at 50% value upon completion of the Phase 2 works.

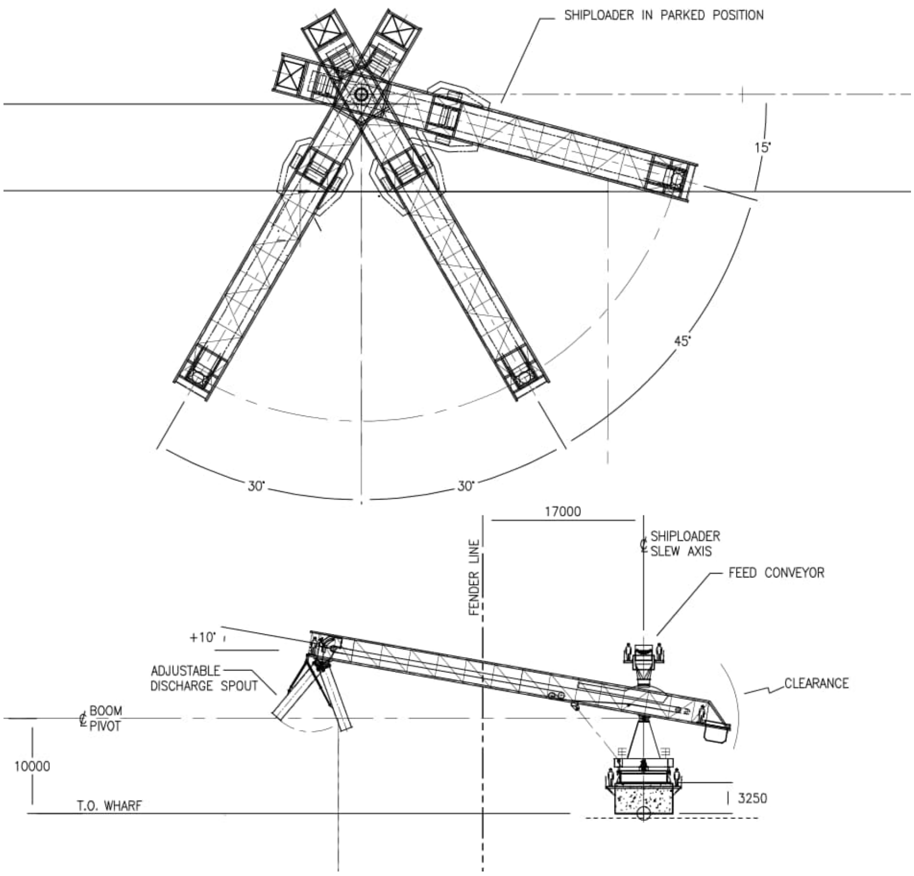


Figure 23: Typical radial shiploader for barge loading

5.4.5 Site Office and Camp Facilities

A construction camp in the vicinity of the construction site (Figure 24) has been included in the estimate for the full Phase 1 construction duration (Table 2). These facilities are on site for the full Phase 1 construction duration. All facilities are mobilised to site using a landing craft ex. Cairns (Figure 25) onto the temporary loadout facility.

Figure 24: Typical construction camp using transportable buildings

Table 2: Breakdown of temporary site office and camp facilities

Site Facilities	Description	Quantity
Main Office	12X6-Office	1
Cribs	12X3-Cribs	2
Toilet	Toilet	2
Access Stairs	Access-Stairs	1
Water Tanks	5000l Water Tanks	2
Waste Tanks	5000l Waste Tank	1
Water Pumps	Pumps (incl. UV filter)	2
Power	50Kva Genset	1
Diesel	2500l Diesel Tank	1
Bunded Fuel Storage	Fuel Tank Bund & Pump	1

Camp Facilities	Description	Quantity
Accommodation	4 Bed Ensuite	8
Bathrooms	General	4
Kitchen	Commercial	1
Refrigeration	20ft Container	1
Dry Stores	20ft Container	1
Maintenance Store	20ft Container	1
Luggage Store	20ft Container	1
Laundry and Line Store		1
Rec. Room/Wet Mess		1
Gym		1
Office	12X6-Office	2
Waste Water Treatment Plant		1
Water Storage Tanks	5000l Water Tanks	2
Elec Generator Package	50Kva Genset	1
Diesel	2500l Diesel Tank	1

Figure 25: Typical landing craft used for camp mobilisation and on-going weekly supply

5.5 Wharf Extension

The Port of Cape Flattery wharf extension necessary for Phase 2 of the project is assumed to be constructed using a modern modular philosophy, with piles being installed and braced prior to delivery and installation of pre-made deck modules. Once installed and shiploader rails aligned, the shiploader can be delivered and commissioned. The feed conveyor will require a separate structure due to lack of space on the existing wharf.

5.5.1 Piling

Piling will be completed using a SEMP equipped with crane and piling frame (Figure 26). The SEMP will work in conjunction with a storage barge and a Multicat style workboat. The water depth and likely pile size suggest the SEMP will need to have a capacity of 500t approximately.

Figure 26: Pile top drill rig and piling frame mounted to SEMP

Piling will be completed using the "drive, drill, drive" (DDD) piling technique consistent with the methods used previously in constructing the existing PCF wharf (Figure 27). This method is used in situations where conventional pile driving methods might encounter challenges such as hard soil or bedrock. This method was assumed to be necessary due to the low pile penetrations noted in the “Berthing Dolphin Upgrade” drawings (±3m). This technique involves a three-step process:

1. Drive: Initially, the pile is driven into the ground using a hydraulic or vibratory hammer. This initial driving phase aims to penetrate the soil or soft rock layer to a certain depth. Once the pile reaches a layer that cannot be penetrated effectively using conventional driving methods, the process moves to the next step.
2. Drill: In the second stage, a drill rig is used to create a borehole or pilot hole into the hard layer of soil or rock. This drilling process involves using drilling equipment mounted to the pile top (Figure 27), to penetrate the hard layer. The borehole is typically slightly wider than the pile diameter to allow for easy insertion of the pile.
3. Drive: Once the borehole is drilled to the desired depth, the pile is inserted into the hole. The pile is then driven further into the ground using pile driving equipment. This driving phase ensures that the pile is securely seated within the drilled hole, providing the necessary stability and load-bearing capacity for the construction project.

Figure 27: Pile top drill rig used for DDD pile installation

Wharf piling is expected to take 24 weeks to install the wharf piles. Following completion of the piling, the piles will be braced using temporary bracing, and walkways installed to allow for pile top access (Figure 28).

Figure 28: Pile bracing and walkways installed

5.5.2 Mooring Dolphin Relocation

In order to mitigate the disruption caused by the relocation of the Mitsubishi dolphin on current Port operations, a new dolphin structure has been budgeted for. This facilitates a faster transition between using the existing dolphin to the new dolphin upon its completion and minimises impact on existing shipping operations. Subsequently, the old dolphin can then be dismantled and removed, with the piles cut at the seabed level. However, due to the location, construction of the new dolphin will still be impacted by shipping operations, necessitating the periodic relocation of the SEMP to accommodate the passage of incoming and outgoing vessels, as discussed in Section 13: Interaction with Existing Port Infrastructure and CFSM Operations.

Allowance was made for 50% of the assumed 6 raked piles (based on existing dolphin, Figure 29) to be anchored, with the remaining 50% to be installed using the DDD technique. This was based on the limited pile penetration during construction of the main PCF wharf. Following installation of the 6 piles, the pile caps and headstock can be installed prior to the installation of the dolphin deck and mooring bollards/quick release hooks. Furniture such as handrails and ladders can then be installed.

The new mooring dolphin as well as the 5 x new berthing dolphins will be completed using the same methodology. The mooring and berthing dolphins need to be completed prior to the arrival of the HLS to allow it to moor safely.

Figure 29: Mooring dolphin structure consisting of 6 raked piles

5.5.3 Deck Installation

The 5 x prefabricated deck modules will be delivered to site on an HLS, which will be berthed using the newly constructed mooring and berthing dolphins (Figure 30). The deck modules can then be lifted into position using the HLS cranes before being aligned and fully welded.

Figure 30: HLS transporting prefabricated modules

Figure 31: HLS installing prefabricated deck modules

5.5.4 Conveyor (Marine)

The existing PCF access jetty and roadway does not have sufficient space to install an additional conveyor (Figure 32), and as such a new conveyor structure is required and is expected to approximately follow the red line shown (Figure 33). Allowance was made in the estimate for construction of a new piled trestle parallel to the existing jetty (Figure 34). This red line conveyor may be similar to the smaller conveyor jetty shown closer to land (used by Mitsubishi). Piles will be installed using the same technique as the wharf extension, albeit using smaller piles. The conveyor structure will be brought in as modules on the same HLS used to transport the deck modules.

Figure 32: Lack of space on existing conveyor structure for a second conveyor.

Figure 33: Potential location for Phase 2 conveyor

Figure 34: Concept for additional conveyor parallel to jetty structure

5.5.5 Conveyor (Landside)

Simply supported reinforced concrete footings have been assumed to be suitable for the purposes of supporting the landside conveyor.

Figure 35: Concept conveyor on footings feeding radial shiploader to TSV

5.5.6 Shiploader

The shiploader will be designed and built offshore specifically for the application. The entire shiploader will be brought in as a complete unit on an HLS and lifted directly onto the rails on the deck using the HLS cranes (Figure 36).

Figure 36: HLS lifting a fully assembled shiploader

6 Estimate Basis and Methodology

6.1 Estimate Basis

The Cost Estimate is:

- Developed to produce an AACE Class 5 Capital Cost Estimate (Figure 37).
- Based on an Owner-led direct execution framework.
- Based on basic layout as illustrated in Diatreme Resources Northern Silica Sand Project Scoping Study Summary (Study Document).
- Estimate base date is Q1, 2024.
- Expressed in Australian Dollars.
- Exclusive of GST.

	Primary Characteristic	***Secondary Characteristic***		
ESTIMATE CLASS	**MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges at an 80% confidence interval
Class 5	0% to 2%	Functional area, or concept screening	SF or m^2 factoring, parametric models, judgment, or analogy	L: -20% to -30% H: +30% to +50%

Figure 37: Class 5 estimate (Source: 56-08R AACE Cost Estimate Classification System)

6.2 Estimate Methodology

The estimate methodology uses:

- Quantities estimated from drawings and dimensions provided and built-up using knowledge of the construction methodology and modern wharf design philosophies.
- Direct workhours based on first principles build-up of crews and production cycles.
- Labour crew rates developed using a marine contractor's labour agreement.
- Contractor distributables determined from first principles and estimated based on durations.
- Labour, plant and equipment based on market rates and recent budget quotations.
- A contingency allowance of 30% has been adopted.

6.3 Estimating Software

The estimating software used to develop the Estimate is Expert Estimation.

7 Estimate Summary

The capital cost estimate for each project phase is summarised below with complete detail attached in the Estimate Report (see Appendix A. Estimate Submission Schedule and Summary).

7.1 Phase 1 – Rock Wharf

Table 3 outlines the financial breakdown for Phase 1, detailing both direct and indirect costs in AUD. Direct costs encompass contractor preliminaries, rock works, marine structures, and product handling, totalling $107,200,000. Indirect costs, including engineering and temporary facilities, amount to $16,100,000. Additionally, a contingency provision of $37,000,000 is allocated, bringing the total project expenditure to $160,300,000. The project cost breakdown is illustrated in Figure 38.

Table 3: Phase 1 Estimate Summary

Phase 1 Transhipment Facility	Amount (AUD)
Direct Costs	
Contractor Preliminaries	$23,100,000
Rock Works	$64,700,000
Marine Structures	$5,600,000
Product Handling	$13,800,000
Indirect Costs	
Engineering	$3,800,000
Temporary Facilities	$12,300,000
Contingency	
Contingency Provision	$37,000,000
Total	$160,300,000

7.2 Phase 2 – Wharf Extension

The Phase 2 estimate is summarised in Table 3, detailing direct and indirect costs, as well as contingency in AUD. Direct costs include contractor preliminaries, berthing and mooring dolphins, the jetty extension, approach jetty structure, product handling and loadout, and services, totalling $169,200,000. Indirect costs, encompassing engineering and temporary facilities, amount to $12,500,000. Additionally, a contingency provision of $54,500,000 is included bringing the total project expenditure to $236,200,000.

Table 4: Phase 2 Estimate Summary

Phase 2 Wharf Extension	Amount (AUD)
Direct Costs	
Contractor Preliminaries	$44,900,000
Berthing and Mooring Dolphins	$19,500,000
Jetty Extension	$35,700,000
Approach Jetty Structure	$13,400,000
Product Handling and Loadout	$42,600,000
Services	$13,100,000
Indirect Costs	
Engineering	$5,900,000
Temporary Facilities	$6,600,000
Contingency	
Contingency Provision	$54,500,000
Total	$236,200,000

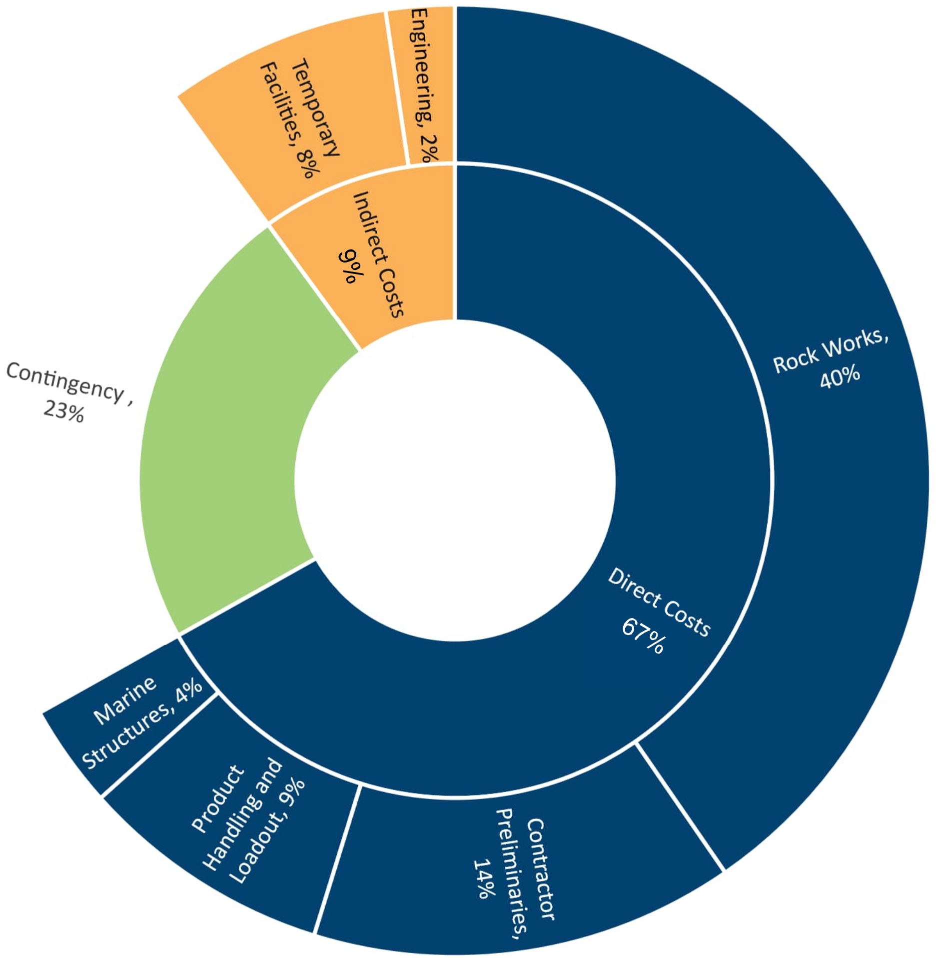


Figure 38: Phase 1 estimate breakdown

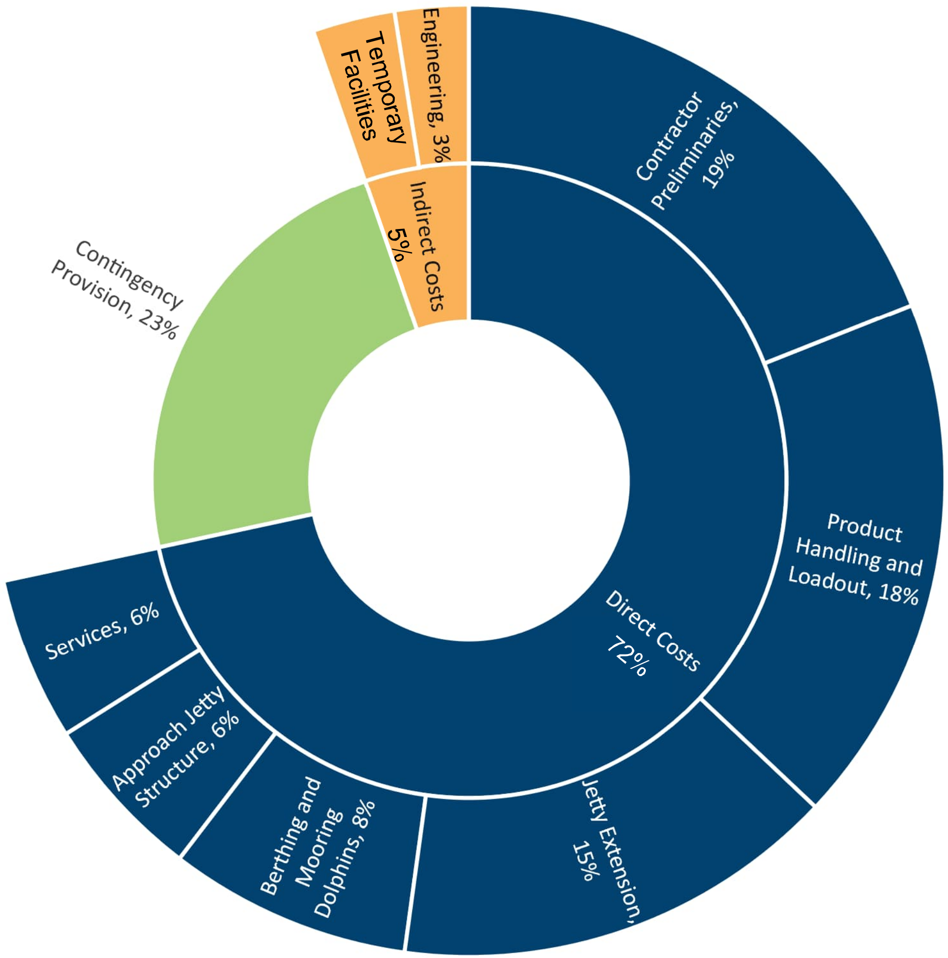


Figure 39: Phase 2 estimate breakdown

8 Direct Costs

8.1 Quantity Development

The general approach to the estimate quantification and scope has been:

- Construction scope has been quantified from the details referenced within this report.
- Quantities inferred from concept drawings and reference to other projects.
- Landside conveyors and abutment construction has been assumed as no detail has been supplied.
- Quantities were expressed measured neat in place. The estimate makes additional allowances for sundries and waste.

8.2 Pricing Development

Table 5 outlines the source of pricing for key resources.

Table 5: Estimate cost basis

Discipline	Description
Marine plant	Database rates from recent projects Q12024.
Cranes and support equipment	Database rates from recent projects Q12024.
Construction costs, equipment and labour	First principles cost estimate based on resource costs applied against schedule of works. Productivity rates are from PAEMAC database and recent marine projects with losses allowed for weather and interface.
Construction materials	Database rates from recent projects Q12024. First principles cost estimate based on estimated quantities.
Contractor Preliminaries	First principles cost estimate based on resource costs applied against schedule of works.

8.3 Site Labour

8.3.1 Labour Rate

Labour rates were calculated using a representative Enterprise Agreement for a marine contractor for FIFO work in rural Queensland.

Calculations are based on an average 84-hour week with 12-hour day x 7 working days / week.

These base rates include site allowances, location allowance, long service leave, annual leave, sick leave, leave loading, public holidays, payroll tax, workers compensation and shift allowance.

The labour cost rate in the estimate includes the costs for:

- Flights (based on industry standard charter rates)
- Accommodation and meals (Phase 1 based on mobilisation/demobilisation and industry standard 30-person mobile camp for similar accommodation. Phase 2 based on use of existing mine camp).

8.3.2 Site Construction Work Hours

The daily output of each crew is determined using task durations completed during an effective day calculation. The effective day has been reduced to reflect the restricted access to the worksite and accounts for daily losses due to prestart toolbox talks and breaks.

8.4 Contractor Distributable Costs

The following items are directly calculated and allocated by task and duration to the specific line items within the Work Breakdown Structure:

- Contractors Project Management.
- Supervision.
- Insurance, guarantees and corporate indirects.
- Temporary facilities (office, crib and ablutions).
- Mobilisation and demobilisation.
- Construction plant and equipment.
- Indirect labour.
- Task specific and general craneage.
- Small tools and consumables.

The following indirect Contractor costs are distributed throughout the estimate and spread as a percentage across the calculated direct costs:

- Contractor's overheads and profit.
- Expected weather losses.

8.5 Owner Supplied Items

Supply items that have been identified as Owner supply and assumed free issue to Contractor:

- Land for Contractor laydown area, temporary camp and land-side access to site.
- Management of or integration with any PCF operations to provide Contractor access for Phase 2 Works.

These items are excluded from the Cost estimate. All other temporary, permanent materials and services required to undertake the Works are to be provided by Contractor.

8.6 Freight and Transportation

All materials (incl. waste) within the direct costs include transport from Port of Cairns, QLD.

Allowance has been included in the estimate for costs to transport plant and equipment between site and Port of Cairns, QLD using a combination of landing craft and towed barges.

8.7 Growth Allowance

Growth allowance considers changes to both quantity and cost to cover unknown but expected increases.

Growth allowance has been excluded in the assessment.

9 Indirect Costs

9.1 Engineering Design

Engineering costs associated with the construction works, including design, construction support, lift studies and design of temporary works have been included as Engineering Design and Support. This was calculated as 3.5% of the direct costs.

9.2 Owners Costs

Owner's costs have been excluded from this Estimate. These can include, but are not limited to:

- Permits and Statutory Approvals.
- Owners project procurement and management team.
- Corporate Management.
- Loss of operations, asset, revenue and profit associated with construction of the Works.

9.3 Goods and Services Taxes

Goods and Services tax has been excluded from the Estimate.

10 Contingency

Contingency is an allowance for uncertainty and risk in the estimate to cover undefined items of work that must be performed, or to cover elements of cost within the defined scope of the estimate that cannot be explicitly foreseen or identified at the time the estimate is being developed. The Class 5 estimate includes a Contingency allowance of 30%.

Key risk factors contributing to the contingency are summarised below:

- Specialist Contractor and plant scarcity.
- Site delays, including plant breakages and equipment failure.
- Weather and seastate.
- Staff and labour scarcity impacting cost and / or progress of the Works.
- Approval conditions and restrictions to work methods.
- Remote location.

11 Escalation

Escalation analysis is required to determine the amount of money necessary to compensate for cost increases due to occur from the base date of the estimate to the date of project completion.

Escalation has been excluded from the estimate.

12 Estimate Reviews

The following estimate reviews have been performed:

- Estimating internal review.
- Peer review for Client submission.
- Benchmarked against similar projects, making allowance for:
    - The Phase 2 construction location necessitates drilling and anchoring of piles, which is more costly than traditional piling.
    - The PCF location is remote and largely inaccessible form land, necessitating the transport of all construction plant, materials and temporary supporting infrastructure via sea, increasing costs.
    - Complex conveyor system with multiple transfer towers and additional supporting infrastructure required for Phase 2 increasing costs.

13 Interaction with Existing Port Infrastructure and CFSM Operations

Interaction issues with the existing Cape Flattery Silica Mine's (CFSM) infrastructure during construction will be unavoidable, noting the proximity of the construction to CFSM's wharf and the requirement to move the Mitsubishi mooring dolphin. The main risks associated with construction and operations interface are:

1) Phase 1 transhipping to bulk carriers moored at existing wharf.
2) SIMOPs interaction between Phase 2 construction and CFSM vessels.
3) Port operations following completion of Phase 2 construction.
4) Removal / relocating of the existing Mitsubishi mooring dolphin.
5) Parting mooring lines.

Phase 1 transhipping to bulk carriers moored at existing wharf

In the description of the Phase 1 operational concept, the DRX scoping study summary states that "The product will then be transhipped to bulk carriers anchored at the existing wharf".

The existing conveyor outloading capacity of 1300 t/hr[1] and average vessel capacity (52 264t) suggests that vessels will be on berth for 3 days (including arrival and departure times). Transfer from barge to moored vessel would therefore need to exceed a gross outloading capacity of 1300t/hr in order for the berth to have sufficient capacity (without impacting on current operations). Specific outloading capacity will need to be significantly higher to allow for TSV loading and turn-around time. Key risks would be:

1. Interaction/coordination with existing operations and management of shipping operations.
2. Operational capacity of TSV(s) and rate of transhipment outloading operations.
3. Weather limiting transhipment operations and TSV movement.
4. Capacity of existing dolphins to accommodate simultaneous mooring of bulk- and transhipment- vessels.

SIMOPs interaction between Phase 2 construction and CFSM vessels

Per Department of Transport and Main Road document Port Procedures and Information for Shipping, Ports of Cape Flattery, Cooktown and Port Douglas, "There are no tugs at the port. Ships anchors will be used extensively to assist berthing and unberthing."

The existing PCF approach (Figure 40) and lack of tugs available means the construction area for the Phase 2 extension is directly in the path of incoming vessels. This would likely mean that all construction activities would need to be coordinated with the shipping schedule to ensure the SEMP is not endangered by an approaching vessel. 2023 saw 58 vessels berth at Cape Flattery[2], averaging slightly more than 1 per week. This would likely have a significant impact on construction productivity due to the duration required to relocate the SEMP and associated equipment with every vessel arrival and departure.

Mitigation measures may include:

- The provision of tugs to assist in CFSM vessel berthing.
- Stand down of construction operations and relocation of construction equipment away from Port prior to vessel berthing and departure.

Port operations following completion of Phase 2 construction

Upon the completion of Phase 2 construction and the commencement of operations at both berths, the close proximity of the berths to one another will require re-evaluation of the current port approach and mooring strategy. Potential risk mitigation strategies could include the use of tugboats for every vessel arrival and departure. This will need to be assessed by Ports North.

[1] Ports North Long Term Maintenance Dredging Management Plan, Port of Cape Flattery
[2] Ports North Annual Report 2022-23

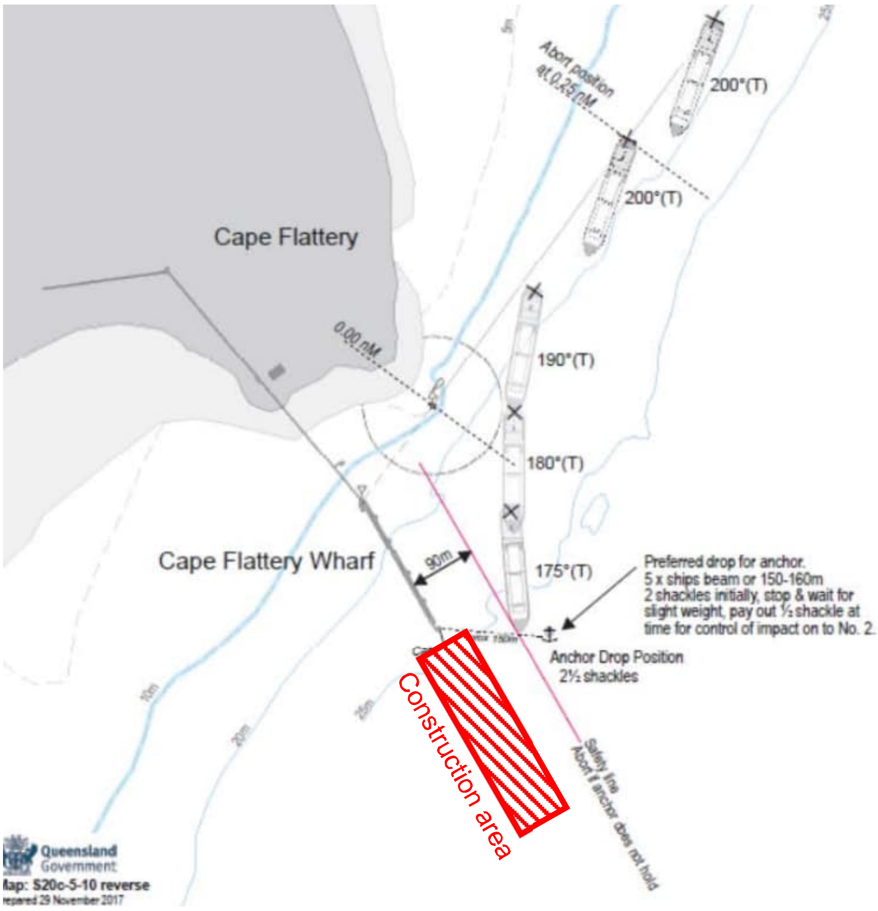


Figure 40: PCF approach and anchorage

Removal / relocation of the existing mooring dolphin

The existing PCF jetty mooring dolphins Mooring Dolphin 1 (MD1) and Breasting Dolphin 1 (BD1) are the southernmost dolphins used for berthing Panamax (or larger) vessels by CFSM. The proposed new jetty extension dissects the vessel mooring lines when berthed at the PCF. The extent of the interface with the works is shown in Figure 38.

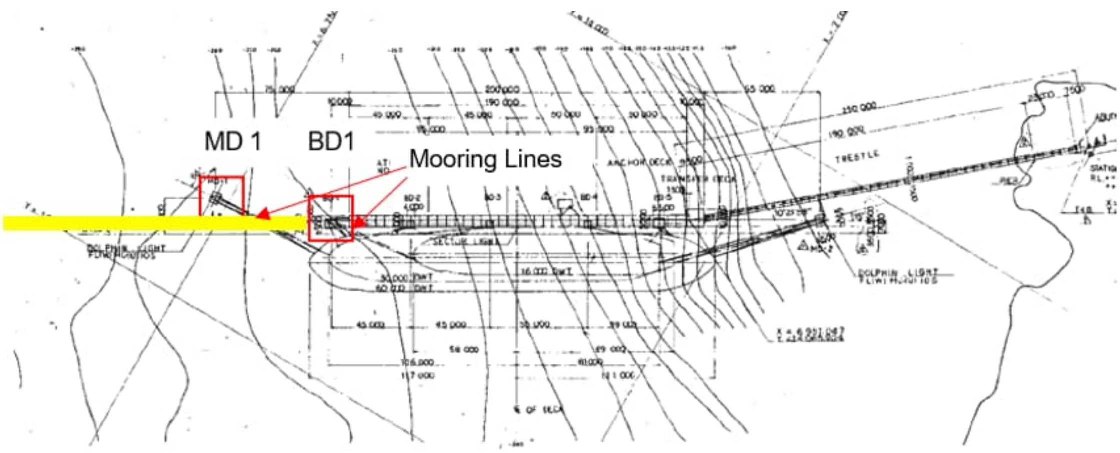


Figure 41: PCF Dolphins

As MD1 is located to the rear of the proposed new berth extension, the mooring lines attached to both the vessel at PCF Jetty and MD1 will dissect the proposed construction area / new berth extension. During the detailed design phase of the works, consideration will need to be given to constructing either a temporary mooring dolphin MD1 away from the works area interface or incorporating MD1 into the design of the permanent structure such that is does not impede operations at the new PCF berth but can also be constructed without impeding existing operations.

Parting mooring lines

Parting mooring lines presents a risk to worker's safety when conducting activities around berthed vessels. Snap-back occurs when a tensioned mooring line breaks, releasing stored energy and causing the line ends to recoil violently towards or past their secured ends. When a synthetic mooring line breaks, the snap-back effect can be extremely powerful, and the rope ends may reach a high velocity as they recoil. Anyone standing within the snap-back zone at either end of the line risks serious injury or death. The design of the new structure will need to consider worker safety during construction or relocating of the proposed jetty extension and conveyor supporting infrastructure sufficiently away from the existing jetty to avoid interaction with mooring lines.

14 Appendix A. Estimate Submission Schedule and Summary

Refer attachment.

AACE Class 5 Estimate
Northern Silica Project - Phase 1 RevA

Item #	Description	Unit	Quantity	Unit Rate	Amount
1000	**PHASE 1 - TRANSHIPMENT FACILITY**				
1100	**Contractor Preliminaries**				
1110	Contractor Recurring Costs for Project Management, Survey, Temporary Facilities, Indirect Costs	Lot	1.0	14,336,433.23	14,336,433.00
1120	Securities and Insurances	Lot	1.0	691,082.84	691,083.00
1130	Project Mobilisation	Lot	1.0	4,052,987.98	4,052,988.00
1140	Project Demobilisation	Lot	1.0	3,987,170.56	3,987,171.00
1200	**Rock Works**				
1210	Rock Wharf - Procure Quarry Material	Lot	1.0	29,138,814.48	29,138,814.00
1220	Rock Wharf - Logistics & Delivery of Quarry Materials to site by barge	Lot	1.0	26,667,396.38	26,667,396.00
1230	Installation of Rock Wharf core, filter, armour and fabric	Lot	1.0	8,897,021.50	8,897,022.00
1300	**Marine Structures**				
1310	Transship Berthing Structures	Lot	1.0	4,822,678.46	4,822,678.00
1320	RORO Ramp Facility - allow for construction of Ramp as per Concept Image	Lot	1.0	803,637.59	803,638.00
1400	**Product Handling and Loadout**				
1410	Shiploader Package - Design, Supply, Delivery & Installation	Lot	1.0	8,101,152.17	8,101,152.00
1420	Feed Conveyor along Rock Wharf (400m long from Transfer Tower to barge loader)	Lot	1.0	4,288,173.74	4,288,174.00
1430	Transfer Tower Phase 1 CV	Lot	1.0	658,174.14	658,174.00
1440	Feed Conveyor Landside of Phase 1 transfer tower	Excluded			
1480	Services reticulation Phase 1 (provision)	Lot	1.0	708,800.89	708,801.00
1490	Gensets and loadbank - excluded (assumed hired and maintained as OPEX cost)	Excluded			
	Subtotal - Phase 1 Direct Costs				107,153,524.00
	Indirect/Owner Costs				
6000	**Engineering**				
6100	Engineering Design and Construction Support	Lot	1.0	3,750,276.23	3,750,276.00
7000	**Temporary Facilities**				
7100	Temporary Facilities - Construction Camp	Lot	1.0	9,994,491.45	9,994,491.00
7200	Temporary Facilities - Access, Enabling, Haul Roads, Water - Excluded	Excluded			
7300	Charter Flights Package - Brisbane to Site (wkly)	Lot	1.0	2,340,269.81	2,340,270.00
8000	**Owner Costs**				
8100	Project Management Team	Excluded			
8200	Owners Costs / Approvals	Excluded			
	Subtotal - Phase 1 Indirect Costs				16,085,037.00
9000	**Contingency**				
9100	Contingency Provision (nominally 30% Class 5 AACE Estimate)	Lot	1.0	36,963,059.88	36,963,060.00
9500	Escalation - Excluded	Excluded			
	Subtotal - Phase 1 Contingency				36,963,060.00
	PHASE 1 - TOTAL PROJECT COST (Q1,2024 Basis)				160,201,621.00

AACE Class 5 Estimate
Northern Silica Project - Phase 2 RevA

Item #	Description	Unit	Quantity	Unit Rate	Amount
2000	**PHASE 2 - JETTY LOADOUT FACILITY (5 Mtpa)**				
2100	**Contractor Preliminaries**				
2110	Contractor Recurring Costs for Project Management, Survey, Temporary Facilities, Indirect Costs	Lot	1.0	22,958,855.59	22,958,856.00
2120	Securities and Insurances	Lot	1.0	2,017,048.29	2,017,048.00
2130	Project Mobilisation	Lot	1.0	13,037,167.44	13,037,167.00
2140	Project Demobilisation	Lot	1.0	6,864,992.70	6,864,993.00
2200	**Marine Structures**				
2210	**Berthing and Mooring Dolphins**				
2211	Berthing Dolphins	no.	5.0	3,166,632.23	15,833,161.00
2212	Mooring Dolphin	no.	1.0	3,068,313.88	3,068,314.00
2213	Demolition of Existing Mitsubishi Mooring Dolphin	no.	1.0	555,550.83	555,551.00
2220	**Jetty Extension**				
2221	Jetty Piling	Lot	1.0	18,026,125.64	18,026,126.00
2222	Jetty Pilecaps	Lot	1.0	2,298,812.40	2,298,812.00
2223	Steel Jetty Deck Structure	Lot	1.0	15,424,911.72	15,424,912.00
2230	**Approach Jetty Structure - to support new feed CV and Tranfer Tower**				
2231	Piled Conveyor Support Structure	Lot	1.0	8,783,166.27	8,783,166.00
2232	Transfer Tower Piled Support Structure	Lot	1.0	4,586,302.08	4,586,302.00
2300	**Product Handling and Loadout**				
2310	Feed Conveyor - Overland (670m total from Phase 1 Transfer Tower to Jetty Transfer tower)	Lot	1.0	6,178,188.10	6,178,188.00
2320	Feed Conveyor - Marine (in 475m long truss conveyor from Transfer Tower to feed shiploader)	Lot	1.0	9,627,416.10	9,627,416.00
2330	Transfer Towers (in 2 No)	Lot	1.0	2,298,486.21	2,298,486.00
2340	Shiploader - Design, Supply, Delivery & Installation	Lot	1.0	24,487,881.05	24,487,881.00
2400	**Services**				
2410	Services provision - Electrical, Hydraulic and Cathodic Protection	Lot	1.0	13,148,166.68	13,148,167.00
2420	Services headworks and landside services - excluded	Excluded			
	Subtotal - Phase 2 Direct Costs				169,194,546.00
	Indirect/Owner Costs				
6000	**Engineering**				
6100	Engineering Design and Construction Support	Lot	1.0	5,921,157.31	5,921,157.00
7000	**Temporary Facilities**				
7100	Temporary Facilities - Phase 2 construction crew accomodated in established mine camp	Lot	1.0	3,966,861.65	3,966,862.00
7200	Landside Facilities - Access, Enabling, Haul Roads, Water - Excluded	Excluded			
7300	Charter Flights Package - Brisbane to Site (wkly)	Lot	1.0	2,628,374.00	2,628,374.00
8000	**Owner Costs**				
8100	Project Management Team	Excluded			
8200	Owners Costs / Approvals	Excluded			
	Subtotal - Phase 2 Indirect Costs				12,516,393.00
9000	**Contingency**				
9100	Contingency Provision (nominally 30% Class 5 AACE Estimate)	Lot	1.0	54,517,933.69	54,517,934.00
9500	Escalation - Excluded	Excluded			
	Subtotal - Phase 2 Contingency				54,517,934.00
	PHASE 2 - TOTAL PROJECT COST (Q1,2024 Basis)				236,228,873.00

Brett Plant
Director
Advisory Partner Connect Pty Ltd
Level 18/324 Queen Street,
Brisbane City Qld 4000

Memo

Prepared by:	Santiago Lam
Cc:	Brendan Cowie
Date:	5 March 2024
Re:	**Summary of Diatreme Resources proposed Northern Silica Project - silica sand mine at Cape Flattery**

EXECUTIVE SUMMARY

Cowie Environmental Service Pty Ltd were engaged to complete an environmental review of Diatreme Resources Ltd (Diatreme) current projects. Diatreme is an emerging Australian producer of mineral and silica sands with a current project portfolio that includes proposed mineral and silica sands mines within Queensland and Western Australia.

The aim of the assessment was to understand the environmental constraints that the current projects are presented with. This assessment was based on factual publicly available data.

Diatremes key standalone projects include the Galalar Silica Sand Project at Cape Bedford, the Northern Silica Project (NSP) at Cape Flattery and the Cyclone Zircon Project in Western Australia. Diatremes main focus at present if the NSP, which has a significant resource of high-purity silica sand with the potential for long-term extraction. The NSP project was classified as a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (ref. EPBC 2023/09485) on June 14, 2023 and on the January 12, 2024, the project was designated as a coordinated project under the *State Development and Works Organisation Act 1971*.

Diatreme's export focus as referred to in their IAS for the NSP is to gain approval to use existing marine infrastructure at Mitsubishi's silica sand mine. Should approval not be granted to use this infrastructure, NSP will have to refocus on other noted options which may result in a redesign and rethink of their project approach This has the potential to impact their supply distribution methodology and infrastructure, which may present some additional currently unknown environmental approvals constraints.

PURPOSE

This memo has been developed by Cowie Environmental Services Pty Ltd (Cowie) to summarise the status to date of the proposed Diatreme Resources Ltd (Diatreme) silica sand mines in and around Cape Flattery. The memo includes a summary of Diatreme as a company, details on the proposed silica sand mines, where it is in the approvals process and a summary of the full approval pathway. This memo has been prepared using publicly available information on Diatreme and predominantly refers to the proposed silica sand project known as the Northern Silica Project (NSP).

SUMMARY OF DIATREME RESOURCES LIMITED

Diatreme Resources Ltd (ASX:DRX) is an emerging Australian producer of mineral and silica sands based in Brisbane. Diatremes key standalone projects include the Galalar Silica Sand Project at Cape Bedford (EPM17795) and the NSP which is adjacent to Mitsubishis Cape Flattery Silica Mine (CFSM) at Cape Flattery. Diatreme also has the Cyclone Zircon Project in Western Australia, which is considered the largest undeveloped high-grade zircon project in the Eucla Basin.

NORTHERN SILICA PROJECT

NSP has an established indicated and inferred resource of 235 million tonnes of high purity silica sand, with potential for further expansion. A Scoping Study released in June 2023 highlighted the potential for a valuable long life mining operation, of significant scale and in close proximity to existing marine infrastructure. The study indicated a potential production rate of 5 million tonnes per annum (Mtpa) could be sustained for 25 years, with potential for further resource expansion.

The project is proposed as a drive-in, drive-out operation creating 120 jobs and training opportunities for the local community. Diatreme's website (https://diatreme.com.au/northern-silica) also mentions metallurgy tests have indicated the NSP's ability to produce a high purity, low iron silica product suitable for solar panel manufacturers and other specialty glass makers.

In June 2022, Diatreme announced a transformational strategic partnership with global material solutions leader Sibelco. A leading supplier of silica to the Asian market for specialty glass, Sibelco brings world-class silica processing and technical knowledge along with marketing and development expertise based on its 150 years of international experience.

Sibelco completed in December 2022 its first tranche investment ($11m) to hold a 9.99% project interest, with a second investment tranche undertaken in October 2023 ($24m) taking its total project interest to 26.8%, with the balance (73.2%) held by Diatreme.

NSP PROGRESS TO DATE

The Federal Minister for Environment and Water classified NSP as a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) *(ref. EPBC 2023/09485)* on June

14, 2023. Consequently, an Initial Advice Statement (IAS) for NSP was prepared and submitted on November 29, 2023. On January 12, 2024, the project was designated as a coordinated project under the *State Development and Works Organisation Act 1971*. Currently, NSP is awaiting the Terms of Reference (ToR) to be prepared for the Environmental Impact Statement (EIS).

Figure 1 shows the current coordinated projects occurring in the Cape Flattery region. The site consists of different areas designated for Northern Silica mining operations. MLA100308 is where the main mining activities, processing, and stockpile areas occur alongside related infrastructure. There is one dune lake within MLA100308 which is approximately 0.85km^2 in size. MLA100310 is a planned area for mining infrastructure that will create a pathway for a conveyor linking MLA100308 to the Port of Cape Flattery, crossing an existing mining lease. The Port is located adjacent to ML100313 which is owned by Ports North and operated by Mitsubishi. It is also noted that as of the 4th of March 2024 Diatreme does not have approval to access this port. MLA100313 provides access over land owned by Ports North at the Port of Cape Flattery. MLA100311 and MLA100312 represent proposed mining infrastructure access roads from the Starcke Highway to the site, offering two alternative routes.

Figure 1: Coordinated Projects Map, Queensland Government (2021)

ADDITONAL PROJECTS

Since 2019, Diatreme have been involved in the planning and approvals for the Galalar Silica Sand Project (GSSP), located east of the Hope Vale township between Cape Bedford and Nob Point (Figure 2). However, it should be noted that the NSP, following extensive exploration, resource definition and export optionality studies has become Diatreme's priority for development. In accordance with this, the EIS process for the GSSP has currently been withdrawn (including withdrawing of referral EPBC 2020/8626). Whilst the GSSP's established resource remains important to Diatreme, the development timeline for the GSSP will occur after the NSP becomes fully operational.

The Cyclone Zircon Project is located in Western Australia with an estimate of up to 203Mt at 2.3% HM (https://diatreme.com.au/cyclone). With a mining lease secured and definitive feasibility studies indicating a profitable venture with a 13.2-year mine life, Diatreme Resources has entered into partnerships with Chinese companies for off-take, investment, and construction services. The project's value is further enhanced by the inclusion of the strategic metal hafnium. On Wednesday, 6 September, 2023 Pursuant to section 45 of the Environmental Protection Act 1986, as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 1052, be amended as specified in this Statement. This change included an extension of the conditional approvals for another five years from the date on the Statement (https://www.epa.wa.gov.au/sites/default/files/Ministerial_Statement/Ministerial%20Statement%201210.pdf).

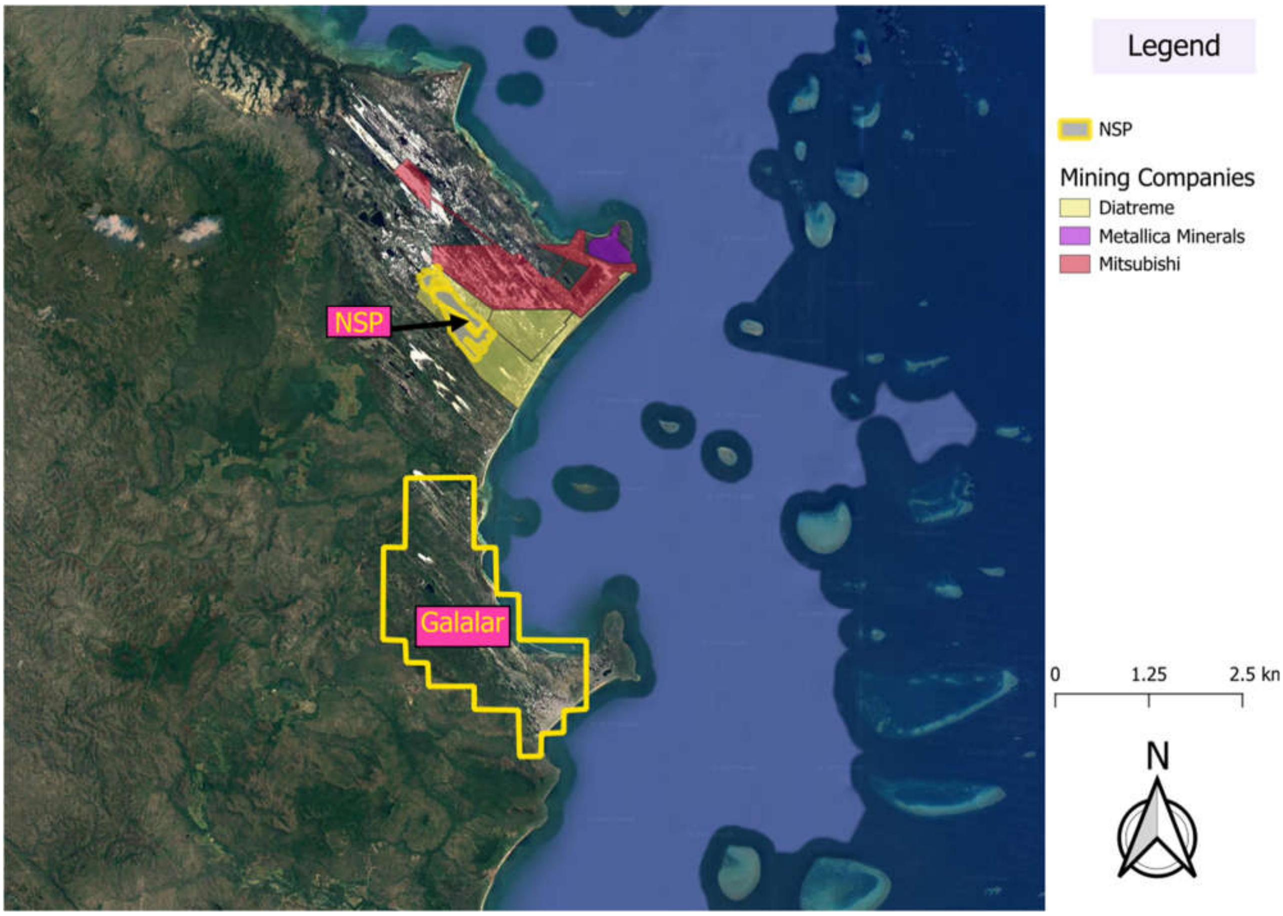


Figure 2: Diatreme projects overview, Cowie (2024)

NSP APPROVAL PATHWAY

Upon declaration as a coordinated project, a draft EIS terms of reference (ToR) will be prepared (which Diatreme expected Q4 2023 or Q1 2024, shown in figure 4) by the Office of the Coordinator General (OCG), this may be followed by a public consultation period for feedback. Once finalised, the proponent prepares a draft EIS (expected Q4 2024), which is then publicly released and evaluated by the OCG. Additional information may be requested during evaluation, and upon revision, the final EIS is released as a formal report if all conditions are satisfied by the OCG (expected Q1 2025 or Q2 2025). Figure 3 displays the full coordinated project process.

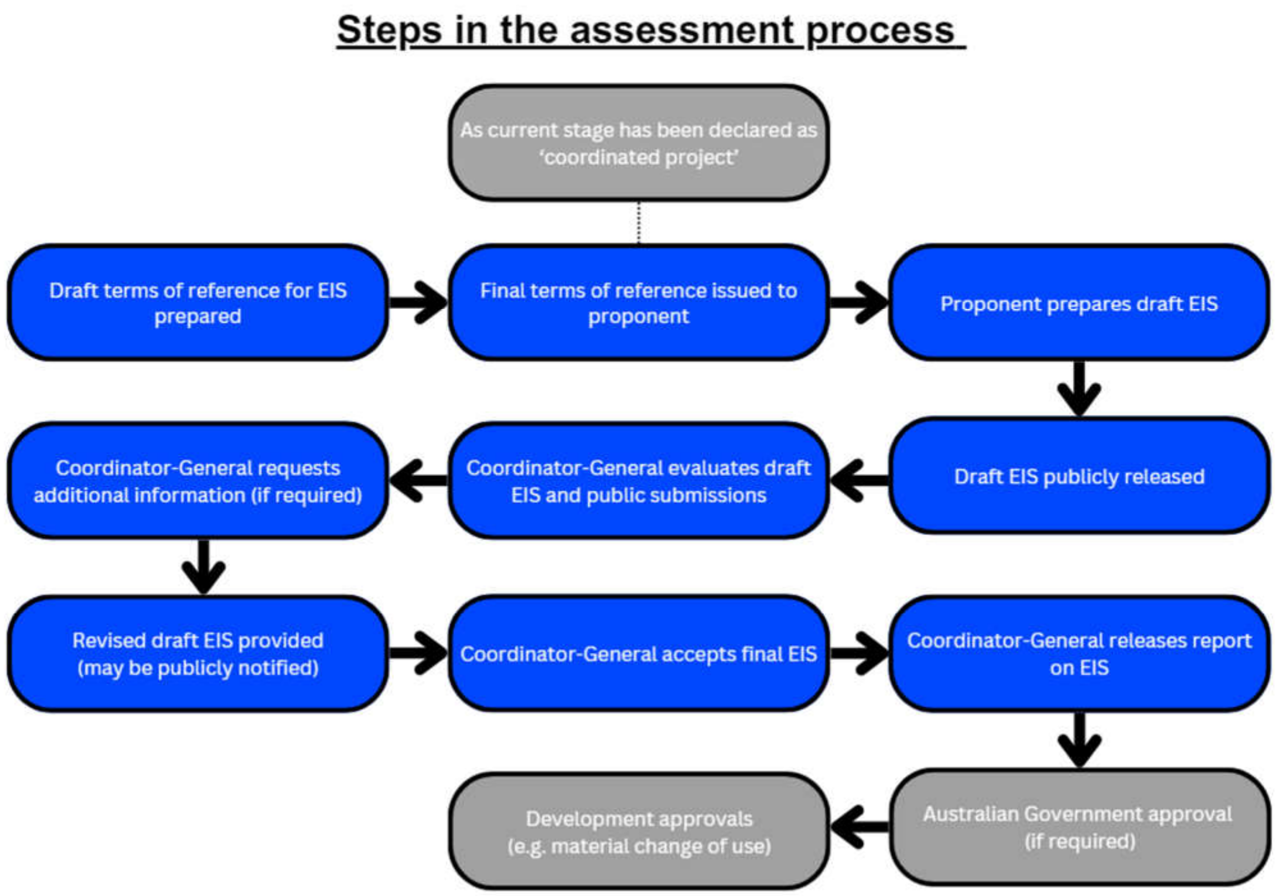


Figure 3: Assessment process, Queensland Government (2021)

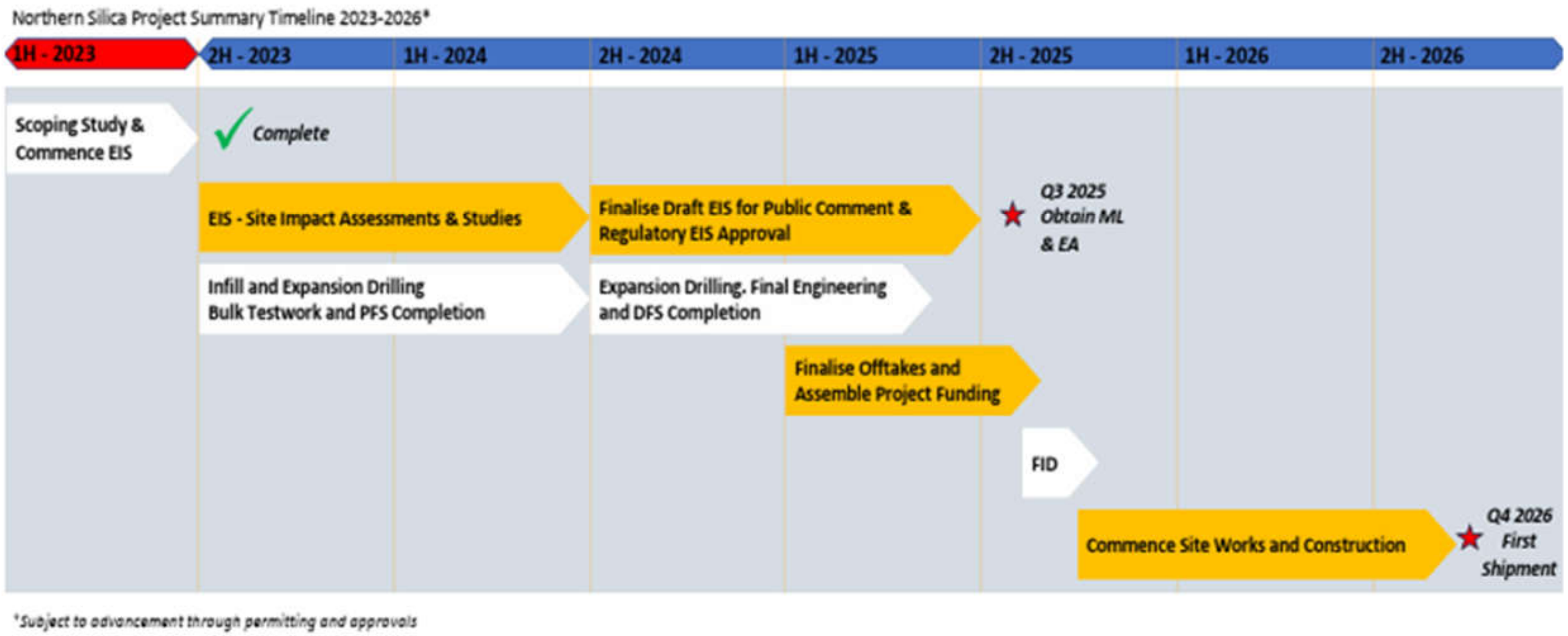


Figure 4: Diatreme expected pathway, BMT (2023)

ADDITIONAL APPROVALS

Due to the complexity of NSP, a series of approvals would be required beside the Coordinator-General's Evaluation Report (CGER), as detailed in Table 1 and Table 2 below:

Table 1: All stated approvals of NSP, BMT (2023)

Legislation	Approval	Project element	Administering authority	Assessment benchmarks / guidelines	Coordinated project EIS scope
SDPWO Act	Coordinator-General's Evaluation Report	Whole of project	Office of the Coordinator-General	ToR issued for the project	Yes – seeking imposed conditions
ACH Act	CHMPs	One for each Aboriginal Party within the overarching project	Native Title body / Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	CHMP guidelines	No – to be developed in parallel with the EIS
SSRC Act	SIA and SIMP	While of project	Office of the Coordinator-General	SIA and SIMP guidelines	Yes – assessed as part of the EIS
EP Act	Resource EA and EAs for ERA 31, 8 and 63	Mining activities and mining infrastructure, including vegetation clearing	DES	EP Act / EP Regulation requirements / Mining Model Conditions (as applicable)	Yes – seeking stated conditions
EP Act	EA for ERA 50	Export	DES	EP Act / EP Regulation requirements	Yes – seeking stated conditions
EP Act	PRCP	Mining activities	DES	Guideline ESR/2019/4964 Progressive rehabilitation and closure plans	Partial – seeking stated conditions associated with rehabilitation to align with PRCP but recognise actual PRCP approval is granted alongside EA
Water Act	Water licence	Water extraction and use	RDMW	N/A	Yes – seeking stated conditions or recommended stated conditions

Table 2: All stated approvals of NSP, BMT (2023)

Legislation	Approval	Project element	Administering authority	Assessment benchmarks / guidelines	Coordinated project EIS scope
Planning Act	Development Permit for concurrence ERA	Mining activities, export	State Assessment and Referral Agency	State code 22	Yes – seeking stated conditions or recommended stated conditions
Planning Act	Development Permit for tidal works	Maritime infrastructure	Ports North / State Assessment and Referral Agency	State code 7 and state code 8 Port of Cape Flattery Land Use Plan and development codes	Yes – seeking stated conditions or recommended stated conditions
Planning Act	Development Permit for waterway barrier works	Infrastructure crossings of waterways	State Assessment and Referral Agency	State code 18	Yes – seeking stated conditions or recommended stated conditions
Planning Act	Development Permit for marine plant disturbance (if applicable)	Clearing of marine plants	State Assessment and Referral Agency	State code 11	Yes – seeking stated conditions or recommended stated conditions
NC Act	Protected Plant Permit	Clearing or translocating protected plant species	DES	Protected Plants Assessment Guidelines	No, but to be considered in general recommendations for the CGER
NC Act	Species Management Program	Affecting the breeding habitat of a species	DES	Information sheet: Requirements for tampering with a protected animal breeding place in Queensland	No, but to be considered in general recommendations for the CGER
Environmental Offsets Act	Agreed Delivery Arrangement	Any significant residual impact	DES	Significant Residual Impact Guidelines	Yes – EIS to include a biodiversity offset strategy or equivalent if required

It is also noted that additional assessments may be required as a result of the above listed approvals. Such as the requirement to undertake an assessment against State code 11 for clearing of marine plants.

The Project Area is located within the Cape Flattery Dune Lakes system, which is a listed wetland of national importance on the *Directory of Important Wetlands in Australia (DIWA) (No. QLD059*). Lacustrine and palustrine waterbodies are classified as high ecological significance (HES) wetlands (Figure 5). HES wetlands are mapped across the north-western transport route, throughout the main mining area (MLA100308) and to the north-east. Therefore, the project will require a Development Approval for operational works in a wetland protection area as the NSP will impact the highly ecologically significant wetland under the *Environmental Protection Act 1994 (EP Act 1994)*. Diatremes IAS states there are littoral rainforests on the mine site which are Matters of National Environmental Significance (MNES), however it does not mention the protected wetlands and their regulatory requirements.

NSP would also need development permits, the EA for export operations and environmental management plans which show how you'll avoid and minimise the impacts of a project you've referred under the EPBC Act. These are tertiary approvals as they relate primarily to operationally specific activities that can only be resolved through more detailed design.

NSP has proposed an initial production capacity during Phase 1 of 3.75Mtpa which then will expand to 6.25Mtpa during Phase 2. This surpasses existing operations, potentially straining the capacity of the wharf at Mitsubishi. While discussions are ongoing with Mitsubishi's CFSM for access, access continues to be refused. Access to the wharf may only be able to be secured under Section 316 of the *Mineral Resources Act 1989*, which allows the Minister for Resources to facilitate this access without the consent of the lease holder if, '[it] would optimise the development and use of the State's resources to maximise the benefit for all Queenslanders'. While the Coordinated Project pathway cannot direct an outcome related to a Ministerial-level decision under an Act, it can assist to assess, analyse and demonstrate that the criteria around optimisation of State resources is met should a section 316 access easement be sought for the NSP in future. Additionally, constructing a new rock barge facility within the port's limits is proposed to support construction initially and later facilitate silica product transhipment to ocean-going vessels (OGV). This may trigger additional development permits in the future pathway.

LEGEND

Figure 4 - HES wetlands surrounding NSP

Project Elements
- Camp, CFP Onshore Lease, Infrastructure Coridor CFSM, Process and Infrastructure, Revised NRP MLA, Stockpile 1 & 2
- Si2 Nth Extension Drilling
- Si2 Nth Resource
- Port Limits
- Marine Park - Highly Protected Zones

MSES
- Reefs and Shoals
- Seagrass
- High Ecological Significance Wetlands
- Regulated Vegetation 100m from Wetland
- Selected Mining Leases

Title:

MSES Wetlands and Coastal Habitats around the Project Area

Figure: 4.6

Rev: A

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

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Figure 5: Wetland on NSP, Cowie (2024)

ENVIRONMENTAL CONSTRAINTS

Land

Soils at NSP consist of primarily Daunt soil units, prone to blowouts, with vegetation consisting of mainly heath and perched lakes common at the site. NSP may contain acid sulphate soils which could acidify and degrade water quality. There is no identified known contamination present on the site. Additionally, the area does not currently engage in active agriculture. National parks in Cape York Peninsula are unaffected by the project (Figure 6).

LEGEND

Land Boundaries

Project Elements

Camp, CFP Onshore Lease, Process and Infrastructure, Infastructure Corridor, Revised NRP MLA Stockpile 1 & 2

Si2 Nth Extension Drilling

Si2 Nth Resource

Figure 6 - NSP in relation to National park

Title:

Local National Parks and Cape York Peninsula Aboriginal Land

Figure: 4.2

Rev: A

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

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Water

As there is limited water supply available from other allocation holders and sources, this water allocation will be subject to an approval process under the *Water Act 2000* and *Water Plan (Cape York) 2019* to allow for access to the strategic reserve. The total volume of water sought from the reserve is 3,500ML/yr for the life of the mine. While the limit for a water license from the Strategic Reserve is 25, 000ML, the proposed water licence is therefore within the water license limit. However, the NSP's IAS only mentions 3186ML/yr without clarifying the additional 400ML (Figure 7).

Usage	Description	Water loss	ML/year
Processing water usage			
Product water loss	5Mtpa product to stockpile	15% water drains to ground	882
Reject sand water loss	1.33Mtpa reject sand to mine rehabilitation	40% water drains to ground	887
Fine rejects water loss	0.34Mtpa fine reject to mine rehabilitation	80% water drains to ground	1,360
Evaporation	10ha wet area	2m evaporation	20
Processing sub-total			**3,149**
Facilities and services water usage			
Accommodation camp and amenities	100-person camp, offices, work facilities	100 people x 300L/day	11
Road maintenance	Maintenance and dust control	20kL trucks, 2 per day	15
Workshops and equipment maintenance	Cleaning vehicles, machinery, equipment	$30m^3$ per day	11
Facilities and services sub-total			**37**
Total site water usage			3,186

Figure 7: NSP water consumption, BMT (2023)

Mining processes include groundwater extraction and reinjection. The operation also involves direct discharge of contaminants from mining operations to waterways or water bodies other than re-injection of clean water back to the groundwater aquifer. The mining footprint should avoid and be buffered from wetlands, waterbodies and waterways on the mining lease area and demonstrate 'no change' to groundwater and surface water quality offsite.

Diatreme has commenced water quality monitoring for the site, this remains in a preliminary stage, it is not clear how Diatreme propose to achieve 2 years of water quality data prior to their EIS process which Diatreme expects to finish in 2024.

There is currently no evidence to suggest that diversion of surface water or other surface waterbodies will occur as part of the project. With GIS investigation of NSP, it appears that the site intersects a number of waterways under the *Fisheries Act 1994* and potential watercourses under the *Water Act 2000* (Figure 8). If this is the case the proposed mine activities will trigger additional approvals not already identified. Confirmation is required from both the Department of Agriculture and Fisheries and Department of Regional Development, Manufacturing and Water as to the waterway and watercourse determination of the water features on site.

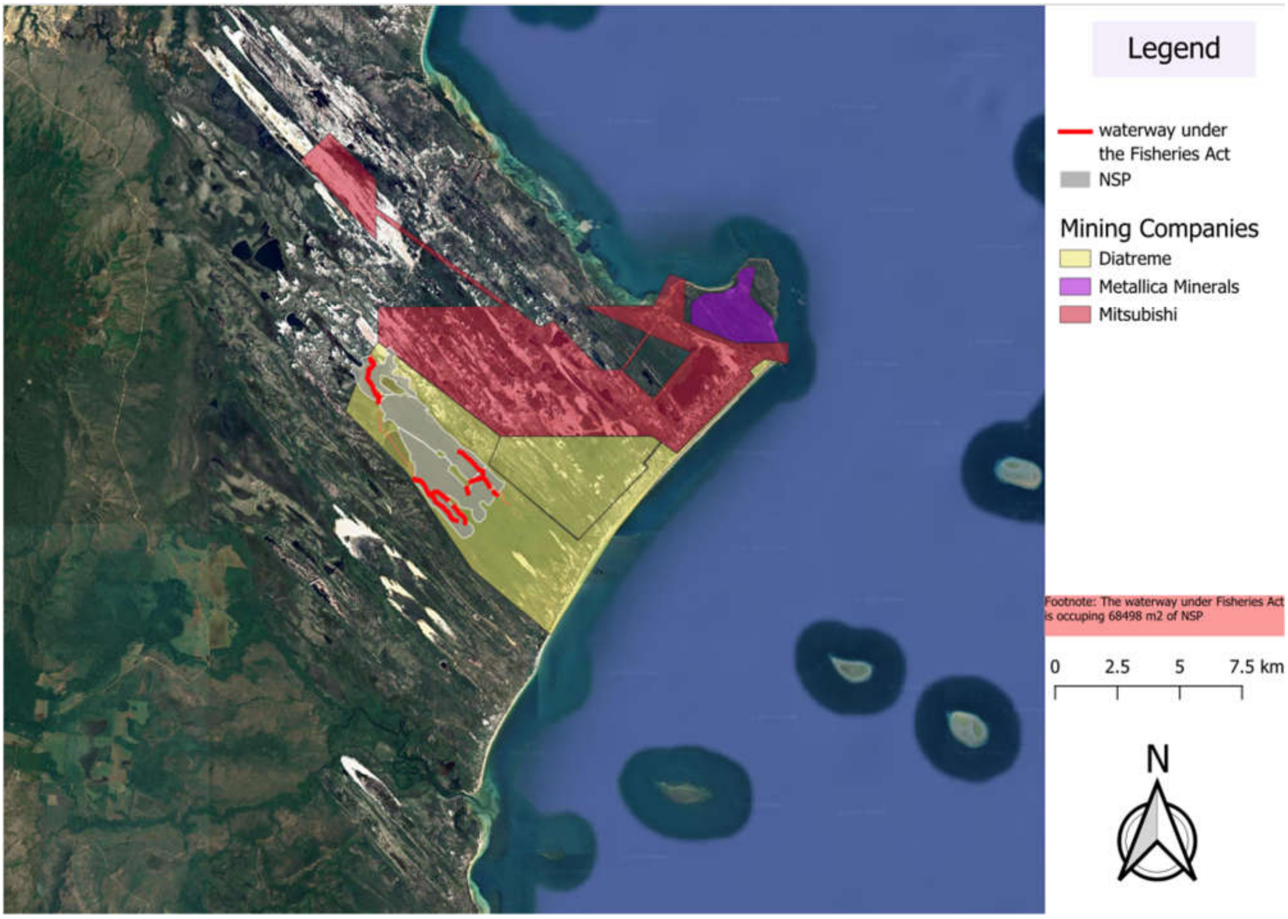

Figure 8: NSP's area impacting Fisheries Act waterways, Cowie (2024)

Flora and fauna

NSP is part of a coastal dune system, it hosts a diverse range of vegetation communities and habitats supporting various flora and fauna typical of littoral environments. High ecologically significant wetlands are present within the proposed mine footprint. No reefs or shoals that are directly adjacent to the area are impacted based on the current project, The NSP IAS includes reference to requiring further investigations for rocky shores, sparse macroalgae and coral species in the broader marine study area to inform the EIS.

With GIS investigation, areas impacted by Matters of State Environmental Significance (MSES) are shown in figure 9. The MSES contains local endanger species or protected vegetation.

Figure 9: NSP area impacted by MSES, Cowie (2024)

Costal environment

NSP overlaps with coastal management districts as shown in figure 10. If mining operations occur within these areas, there is potential for the mine footprint to enter the tidal area and highest astronomical tide zone. NSP also involves the construction of new infrastructure in the coastal zone (e.g. conveyor, new maritime infrastructure), and may impact on the foredune and marine habitats which supports shorebirds and marine turtles. The controlled action includes the potential for turtles to be present on the beach where the conveyor or slurry pipeline will be.

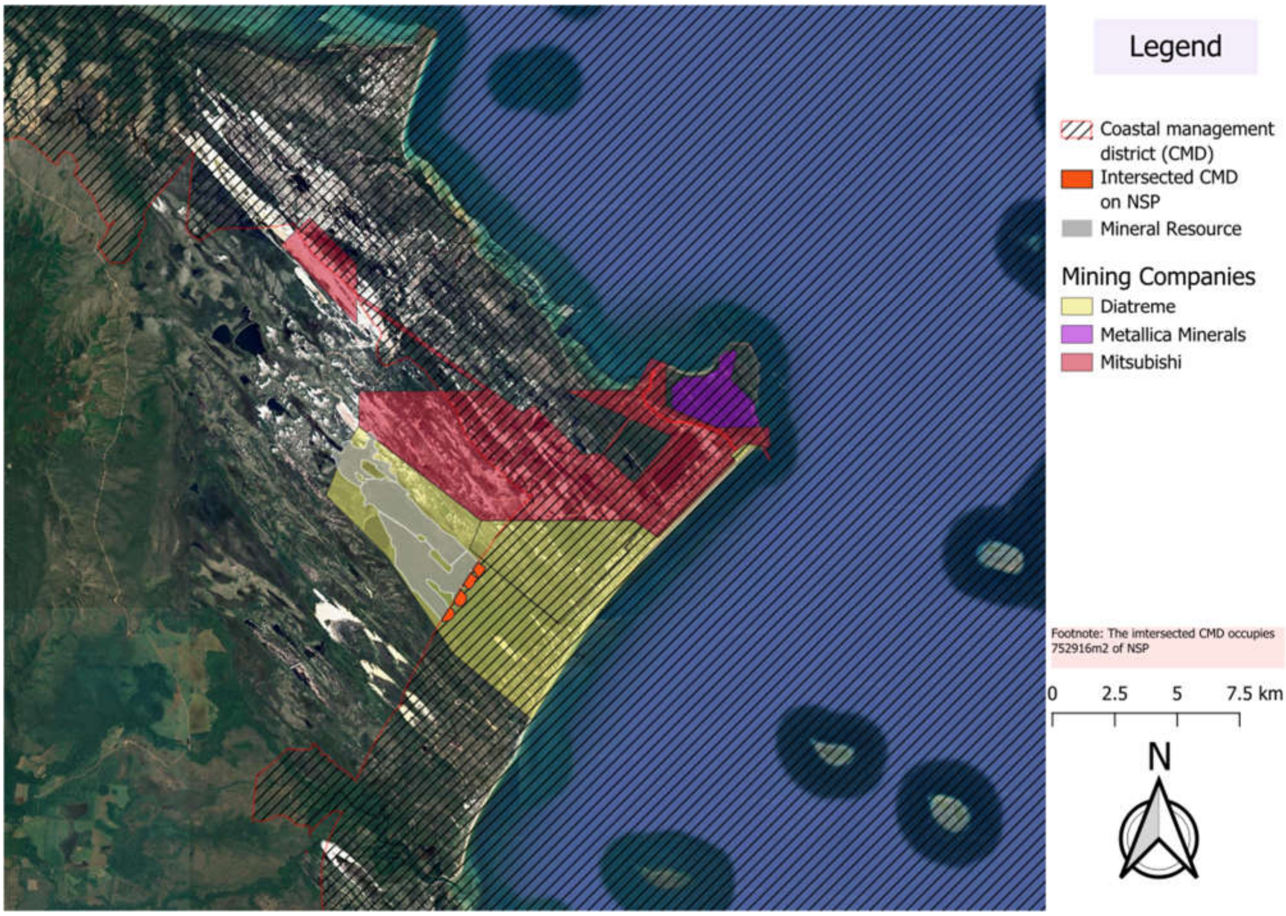

Figure 10**:** NSP overlap with CMD, Cowie (2024)

Flooding and regulated structure

NSP is not designated as a flood zone under Hope Vale Aboriginal Shire Council local planning schemes. No regulated structures like dams or levees are planned for the project area. Therefore, there is a risk of flooding to the site and access road which could lead to restricted movement during the wet season.

Air quality

Minimal industrial emissions are expected from NSP, with no local air quality monitoring available. Anticipated emissions include dust and plant emissions from mining and port activities.

Noise and vibration

Noise sources in the NSP are anticipated to be minimal, primarily from mining activities and Port of Cape Flattery operations. Sensitive receptors, such as the Australian Kite Surfari hotel, are located over 20 km away, therefore any noise impact on important amenity is anticipated to be minimal.

Community

Diatreme intend to employ a local workforce, focusing on housing and community wellbeing in the townships of Hope Vale and Cooktown. Any employees living in the wider community will be accommodated in Hope Vale and Cooktown during construction and transported to site via bus.

Traditional land ownership (TLO)

NSP is undertaking close consultation with the local Registered Native Title Body Corporates (RNTBCs) and Traditional Owners in the area to identify and avoid areas of cultural heritage significance. Mining Project Agreements (MPAs) will be established with Traditional Owner representative organizations to confirm equity sharing arrangements and employment opportunities. Negotiations for these agreements are ongoing and expected to conclude by the end of 2023. However, there is no indication of any completed agreements at the time of this memo.

All quantifiable constraints

Upon GIS analysis of all relevant constraints, the analysis indicates that the above detailed constraints would impact a total area of 282.8113 hectares as shown in Figure 11.

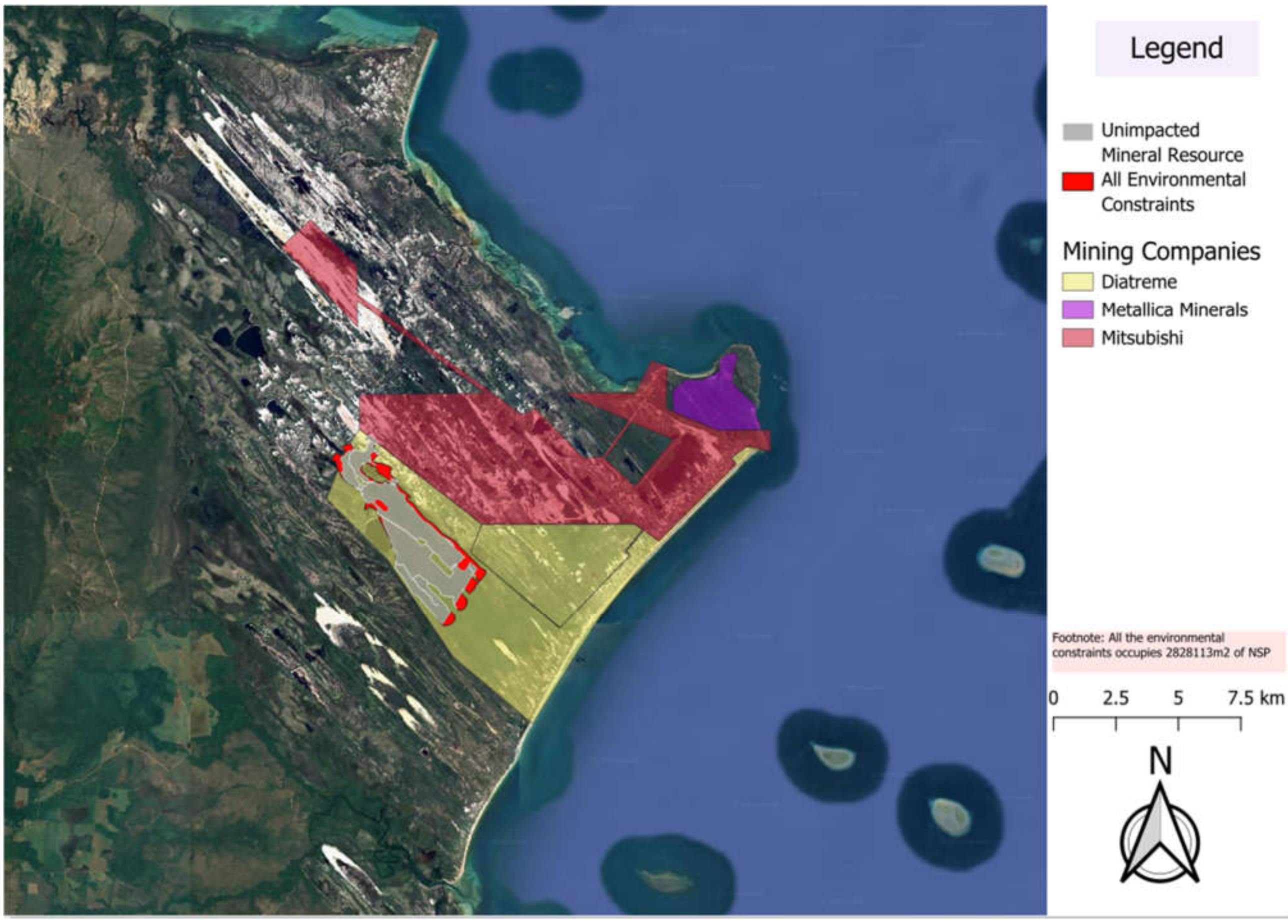

Figure 11: All relevant impactful constraints on NSP, Cowie (2024)

SUMMARY

A series of approvals will be required for the NSP, including the Coordinator-General's Evaluation Report (CGER) under the SDPWO Act and Controlled Activity Approval under the EPBC Act. Furthermore, there will be a need to apply for and be granted additional environmental approvals that may not yet be identified in the NSP IAS. Any additional environmental approvals may result in future restrictions or amendments to the design/layout and scale required.

Diatreme's export focus as referred to in their IAS for the NSP is to gain approval to use existing marine infrastructure at Mitsubishi's silica sand mine. Should third party approval not be granted to use this infrastructure, NSP will have to refocus on other noted options which may result in a redesign and rethink of their project approach This has the potential to impact their supply distribution methodology and infrastructure, which may present some additional currently unknown approvals constraints.

Yours sincerely,

BCowie

Brendan Cowie

Principal Environmental Scientist and Managing Director
Cowie Environmental Services Pty Ltd

REFERENCE LIST

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