ASX Announcement

11 September 2020

Orokolo Bay Industrial Sands Project DFS confirms low cost operation with strong economics.

Mayur Resources Limited (ASX:MRL) has completed its Definitive Feasibility Study (DFS) for the company's Orokolo Bay Industrial Sands Project in Papua New Guinea (PNG) which reinforces its status as a simple, low CAPEX, and financially robust project with multiple product revenue streams.

The DFS confirmed that the project, which will produce a number of products including vanadium titano-magnetite (VTM), DMS magnetite, construction sands and a zircon-rich valuable heavy mineral concentrate and produces a post-tax (real) NPV of US$131 million (10% discount rate) and IRR of 103.7%.

An operational design with an initial CAPEX of US$20.48 million has been calculated to establish a five million tonne per annum mining and processing operation and is forecast to be paid back in just over a year.

Mayur Managing Director Paul Mulder said the DFS not only reconfirmed the robust economics of the Pre-Feasibility study but also improved them with further project definition and optimisation.

In a deal struck in January 2019, China Titanium Resources Holdings (CTRH) is to provide up to $US25 million in funding for the project and an operational delivery solution to earn up to 49% of the Mayur's wholly owned subsidiary that houses the project and the company's wider industrial sands portfolio (thus providing a fully funded solution without needing to raise capital from Mayur Resources shareholders).

"The results of the DFS are extremely encouraging and confirms the value of Mayur's 51% share in the Orokolo Project of circa US$67 million, which is roughly equivalent to the entire market value of Mayur Resources today," Mr Mulder said.

"The market currently is effectively ascribing no value in the company's other projects including our flagship Central & Cement Limestone Project which was recently awarded a Mining Lease and has a US$352 million NPV, the Lae Energy Enviro Park, our coal assets or our copper and gold portfolio," he said.

Mr Mulder added that in addition to the already received environment permits for the project by the Conservation and Environmental Protection Authority a Mining Lease Application would now be submitted for the Orokolo Bay Industrial Sands Project which was expected to leave a lasting legacy for local landowners through the proposed post-mining sustainability land use initiative of mechanised Sago plantations.

Considerable progress has already made at Orokolo this year. In May *(ASX announcement 28 May 2020)* , Mayur announced an increase in JORC Resources to 243 million tonnes for the project while site enabling works for a pilot plant have been completed *(ASX announcement 26 March 2020)* at the project site which will produce up to 100,000 tonnes of iron ore sands per annum to provide test scale shipments of product to potential off takers.

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Key outputs of the DFS are:

- Post-tax (real) NPV of US$131 million (10% discount rate) and IRR of 103.7% (Compares to NPV of US$106 million (10% discount rate) and IRR of 93.5% in the 2017 Orokolo Bay Pre-Feasibility Study)
- Forecast life-of-project (LOP) revenue of US$969m and Life-of-Project EBITDA[1] of US$380m over an estimated 15-year life
- Low initial CAPEX of US$20.48 million to establish a 5 Mtpa (ROM) mining and processing operation
- Payback of 1.1 years from start of operations
- Supported by the maiden Ore Reserve and 15-year production target for the Project as announced on 2 July 2020[2]
- Project to be financed entirely via equity under the current JV agreement in place with CTRH[3]
- Optimised mine schedule has resulted in achieving a higher DTR cut-off (i.e. 5.5% DTR), a longer Life of Mine (15 years) and also a higher average DTR grade of 10.58% (this compares to the 12-year LOM at an average DTR grade of 10.1% as included in the 2017 Orokolo Bay Pre-Feasibility Study)
- Production of VTM - 0.4 Mtpa, magnetite for Dense Media Separation (DMS) - 0.1 Mtpa, zircon concentrate – 8,000 tpa, and silica construction sands - 1.0 Mtpa
- Pricing assumptions for VTM product (excluding DMS) are calculated at approximately 77% of the 62% Fe CFR China long term reference price of US$66.30/t. This pricing is consistent with Mayur's existing offtake arrangements.
- Average All in Sustaining Operating Cost (AISC) on a CFR basis of US$25.23/t (on a combined basis of all products). The allocated AISC on a CFR basis for the VTM product is US$ 30.34/t

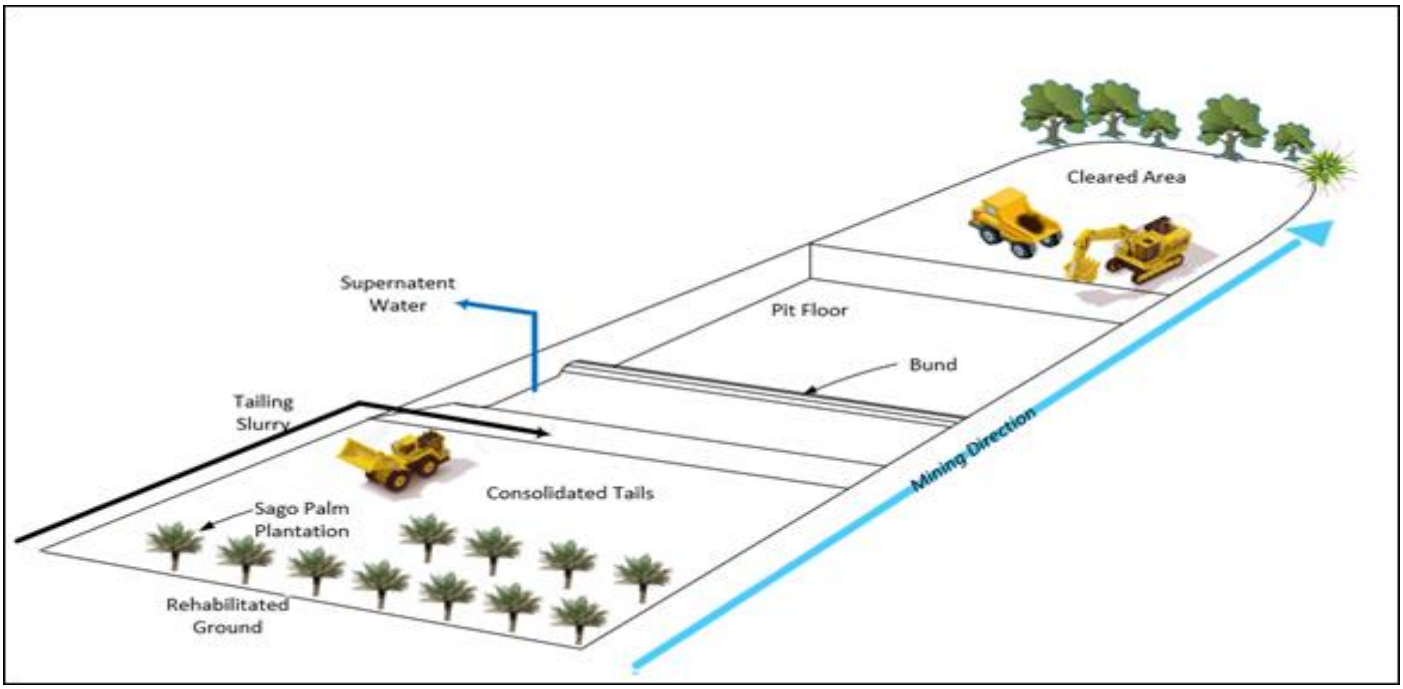
Next steps:

- Submission of Mining Lease application during October 2020
- Pilot Plant construction and commissioning by Q2 2021 (dependent on COVID-19 travel restrictions)
- Pilot plant operations and commercial-scale product trial shipments Q2 2021
- Mining Lease grant target date (Q1 2021)
- Targeting FID and cashflow by Q2 2021 (dependent on COVID-19 travel restrictions)

[1] EBITDA, NPV, IRR and project payback are non-IFRS measures, refer to Appendix at the end of this release.

[2] The Company confirms it is not aware of any new information or data that materiality effects the previously disclosed information and that all material assumptions and technical parameters underpinning the estimates in that information continue to apply and have not materially changed

[3] Refer to announcement dated 7 January 2019



Orokolo Bay Project operations schematic

This announcement was authorised by Mr. Paul Mulder, Managing Director of Mayur Resources Limited.

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DFS Summary

Delivery team

Given the integrated nature of the project, the company assembled a multi-disciplined team of industry and technical experts to advise and input the various key aspects of the DFS as outlined in Table *1* below.

Area	Consultants
DFS lead and study management	Siecap Pty Ltd
Resource and Reserve Estimation	Groundworks Plus
Mine Planning and Design	Groundworks Plus
Metallurgical Test work	IHC Robbins / CRL
Plant Design	CRTH / Siecap Pty Ltd
Barging System Design	Siecap Pty Ltd / TAMS
Environmental	Coffey/Tim Omundsen
Social	Social Environmental & Research Consultancy Limited / Tim Omundsen
Financial Modelling and Evaluation	Siecap Pty Ltd

Table 1: DFS Delivery team

Geology and Mineral Resources

In May 2020, Mayur announced an increase to the JORC Resources at Orokolo Bay that formed part of the 2017 PFS. The overall resource estimate for the project (Western + Eastern Areas) was increased by over 40 percent from 172.7 to 243 million tonnes. The upgrade was obtained in the Western Area of the Project, that lies within EL2305, which saw a rise from 139.2Mt to 209.5Mt (cut-off 5.25% Fe). The 2016 resource estimate for the Eastern Area, that lies within the adjacent EL2150, remains unchanged at 33.5Mt (cut-off 7% Fe, for a total Project Resource of 243 Mt). (*Refer ASX announcement 28 May 2020*)[4]

[4] The Company confirms it is not aware of any new information or data that materiality effects the previously disclosed information and that all material assumptions and technical parameters underpinning the estimates in that information continue to apply and have not materially changed

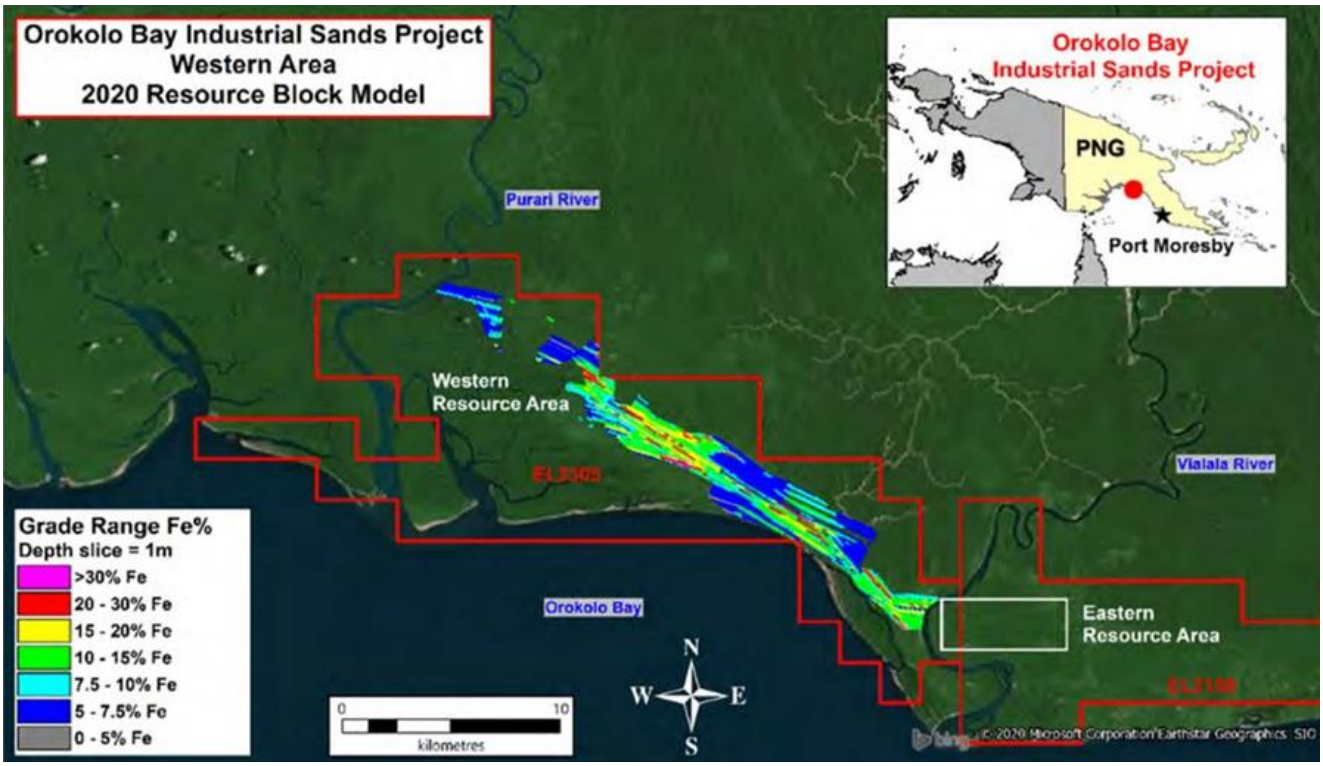

Figure 1 – Orokolo Bay Resource Block Model

Metallurgical test work

A significant amount of metallurgical test work has been conducted by Mayur and previous explorers on the Orokolo Bay resource. Over the life of the project, numerous metallurgical testing programs have been undertaken to develop a robust and comprehensive metallurgical definition for Orokolo Bay. Figure 2 shows the chronological steps behind the development of the metallurgical definition for the resource.

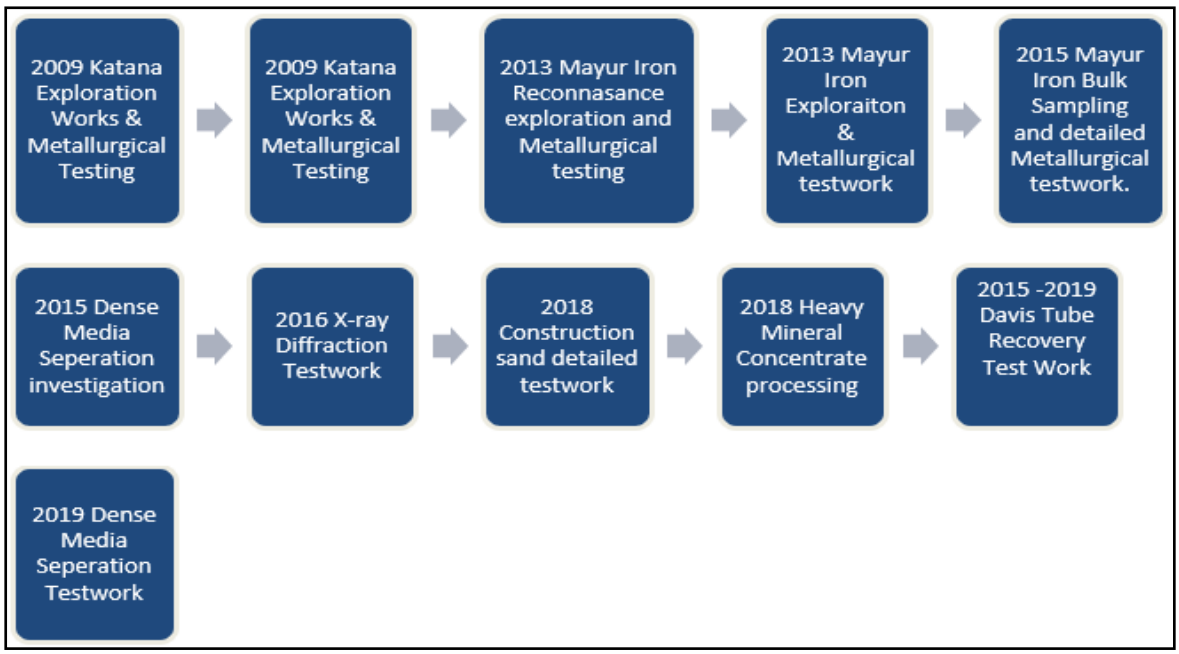

Figure 2: chronology of metallurgical test work

In summary the metallurgical test work concluded the following:

- 58% to 61% Fe, 9% to 11% TiO2 VTM product can be achieved using Davis Tube
- Al2O3 and SiO2 in the range of 1.5% to 3%, which is very low.
- Low phosphorus of 0.05% P.
- Low sulphur.

The metallurgical test work further concluded that a simple flow sheet combining spirals with magnetic separation would enable beneficiation without a grinding circuit to achieve the following product specifications.

Vanadium Titano-magnetite concentrate

- Fe - 57%
- SiO2 – 1.8%
- Al2O3 – 2.01%
- TiO2 - 10 -12%
- P – 0.05%
- V2O5 – 0.48%

In addition, and as by-products to the processing of VTM, a zircon heavy mineral concentrate containing ZrO_2 (circa 20%) and a silica construction sand suitable for concrete and asphalt blends can be produced.

Further test work was undertaken to test the suitability of the magnetite product for Dense Media Separation (DMS). This test work concluded that with grinding down to approximately 53 micron the product was suitable for DMS and that the next steps should be commercial scale trials.

Mining & ore reserves

As previously reported, Groundworks Plus completed a mine schedule on which it based its Reserve report. This schedule formed the basis of the 15-year mine plan and material quantities. (*refer ASX announcement -2 July 2020*[5])

Processing

The proposed processing circuit involves delivery of the run-of-mine (ROM) ore to one of two relocatable 2.5 Mtpa concentrators by front end loader (FEL) or haul trucks, where the material will be fed through a vibrating screen to remove +3mm organic and oversized material followed by desliming and two stage ore upgrading. The first stage is a gravity circuit (spirals) to remove lower density gangue material to produce a heavy mineral (HM) concentrate. The lower density material would be routed through an up-current classifier to remove fines and organic components, producing a material suitable for use as a construction sand. The HM concentrate would be treated by wet LIMS to make an iron rich VTM, HM concentrate and non-magnetic, zircon-rich HM concentrate. Plant tailings would be pumped to a previously mined area to backfill the void. A simplified process flow is shown below in Figure 3.

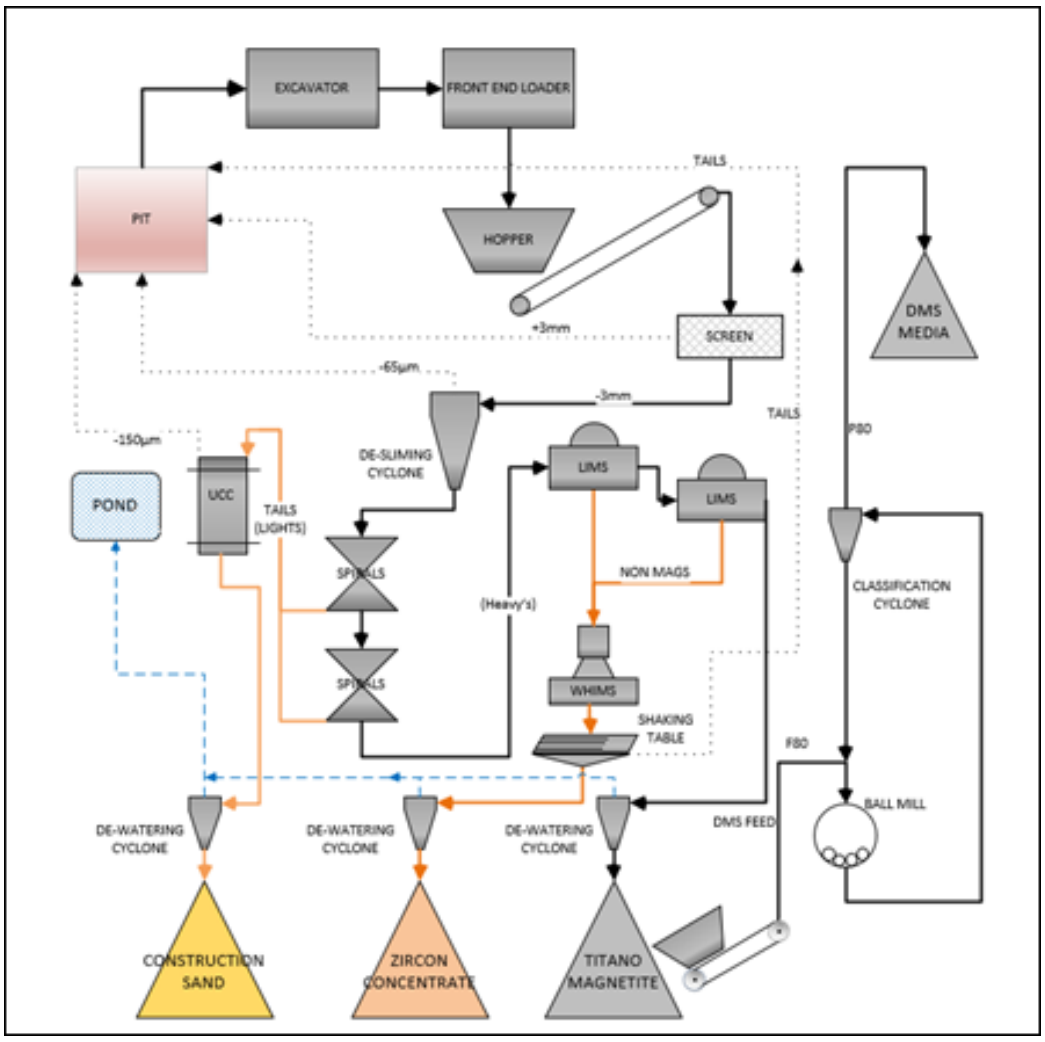

Figure 3 Simplified Project Process flow

[5] The Company confirms it is not aware of any new information or data that materiality effects the previously disclosed information and that all material assumptions and technical parameters underpinning the estimates in that information continue to apply and have not materially changed

Transport and logistics

Various product loadout systems were assessed and the final methodology was selected based on the use of the Muro River system to transport the products via 500t river barges to a larger "deeper" transhipping location on the Purari River from where relatively large 4000t offshore barges can ship the product to an ocean going bulk shipper moored offshore.

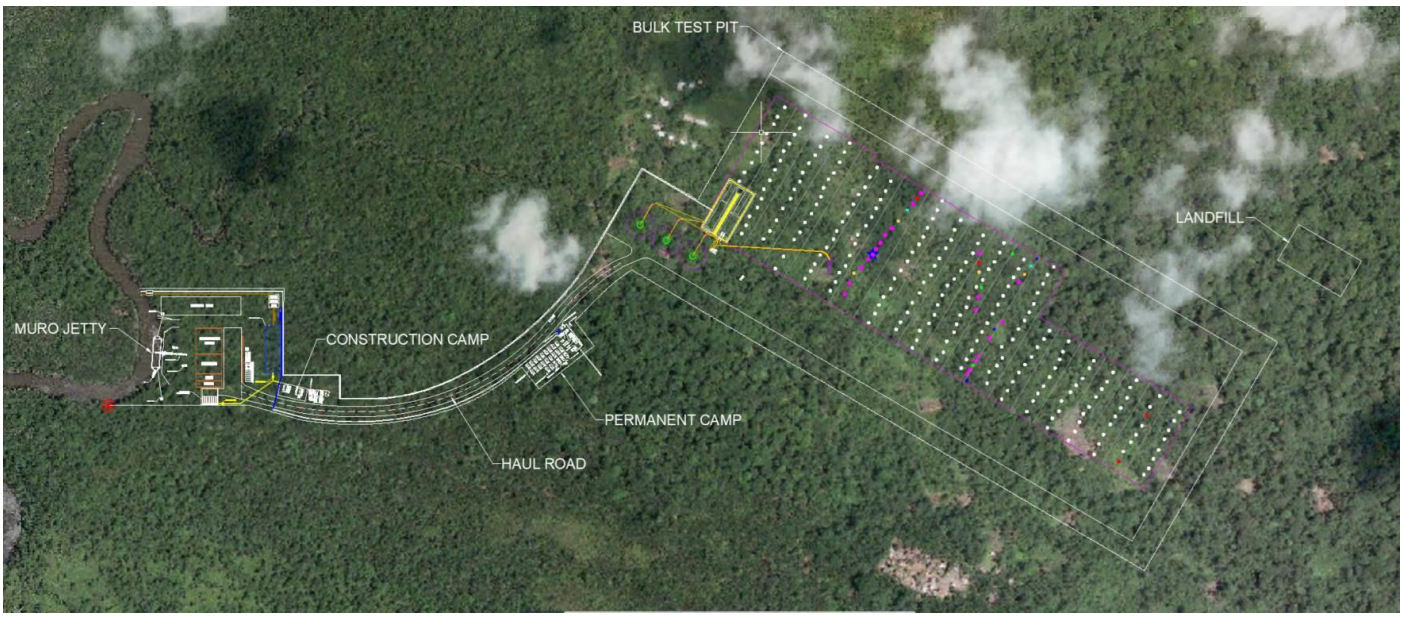

Figure 4: Orokolo Bay pilot plant, bulk sample pit layout and loading point on Muro River

Transport of product to the Muro River stockpile

The products, VTM, DMS, zircon concentrate and construction sand will be separately loaded onto 30t tipper trucks by a FEL and trucked the 2km to the stockpile on the Muro River. The products will be tipped and stacked onto distinct stockpiles in preparation for the loading of the dedicated river barges.

Transport of Product from the Muro River stockpile to the Purari River stockpile

The products will then be separately loaded onto 500t river barges using a FEL and ship loader conveyor. There will be four sets of tug and barge units. The products will be transported 10kms down the Muro River to a secondary stockpile located on the deeper Purari River mouth and unloaded by FEL onto large individual stockpiles in preparation for transfer onto a scheduled 60Kt ocean going, geared bulk vessel.

Transport of product from the Purari River stockpile to the moored ocean-going vessel

The products will be separately loaded onto 3000t to 4000t ocean going barges using a FEL and shiploader conveyor. There will be four sets of tug and barge units operating on a 24 hour 7 day/week basis.

The option chosen for the transhipment of the Orokolo Bay products was the utilisation of readily available supramax class vessels that are self-geared with grab cranes able to undertake direct transfer of product between the barge and the vessel.

Product loadout and wharf facilities

The jetty or wharf facilities have been designed and built to the minimum standard required to sustain the export of 1.5 Mtpa of final product and also allow for incoming goods such as spare parts.

The proposed jetty locations are on the Muro (a tributary of the Purari) and Purari Rivers (approximately 10 km to the west of the project mining site) which flows into the Gulf of Papua and provides direct access to deep water shipping routes to Asia to the west via the Torres Straight and eastward via the Jomard Entrance to other destinations via the Coral Sea. Access to customers in Sydney for delivery of the construction sands is directly south along the eastern coast of Australia.

The majority of inbound materials and equipment would be barged to site from either Kerema (Provincial Capital) or Port Moresby.

Infrastructure and utilities

The infrastructure and utilities required for the Project would include administration facilities, maintenance facilities, accommodation, airport, power, water, fuel, waste and communications.

Offices and accommodation facilities

An accommodation area is to be located on site. These include administrative office, canteen, staff dormitory, canteen & shower room, warehouse etc.

Water

Site water management involves the management of stormwater runoff, rising rivers, water management for any dust suppression, firefighting and the management of potable water and wastewater.

A water balance model has been completed to determine the minimum size of the storage pond and required amount of additional water transfer, whilst simultaneously satisfying all the specified watering requirements and minimising pond overflow during heavy rainfall periods.

Environmental water management is integrated within the existing water system described above. All stormwater runoff from the site is collected in a storage pond and allowed to naturally drain from site when the sedimentation levels are within tolerance as described in the environmental management plan.

The potable water plant is designed to treat ground/surface to achieve potable water quality and will involve pre filtration, RO desalination and a CIP system for membrane cleaning.

Power

The mining operations have been designed to operate independently. The largest single power draw for each mining operation is the two processing plants and thus the most appropriate power solution would be to have diesel fuelled power generators located at each land-based plant. Calculated total power draw is 5.5MW, hence 6MW of power generation capacity would be required for the project.

The generators would be 500kVA 415V synchronised units. Each plant would also have a reconditioned standby generator that allows servicing and breakdown redundancy.

Mayur would provide for a nominally 200kVA generator system at the administration area to provide power for the offices, maintenance and port facilities whilst the camp provider would allow for a separate generator set up at the accommodation village.

Fuel storage

Apart from the main fuel farm located at the Muro wharf area, Twenty thousand litres of diesel fuel would be stored in relocatable ISO fuel farms near each processing plant in the event that unseen conditions i.e. weather, breakdown etc. prevent regular supplies being provided from the port fuel farm

Plant fuel supplies will be replenished every three to four days using a fuel supply tanker that would service each location.

Ownership, legal and contractual

Licensing

Tenement details for the Project are as shown below.

Licence Name	EL Number	Area (km^2)	Grant Date	Expiry
Orokolo Bay	2305	256	14/05/2014	13/05/20*
*Renewal application was lodged with the MRA in Feb 2020 for an extension of a further 2-year term as per *The Mining Act and Regulation 1992* and is currently advancing through the renewal process				

Table 2 Tenement Details

As Exploration Licences (EL) these tenements do not allow the mining of the Project resource but do allow exploration and bulk sampling. Further to this Mayur has successfully (July 2015) secured the requisite approval to implement a bulk sampling operation at Orokolo Bay for a quantity of 100,000 tonnes per year over two years to be mined, processed and provided to customers (to enable commercial scale customer product testing).

As part of the Mining Lease submission Mayur would negotiate a right to occupy land on commercial terms from underlying-land owners in the same manner as any other individual or entity would in accord with the applicable mining legislation. Most land in PNG is customary and not subject to legal title hence these agreements would be with the legitimate landowners that would be identified during the project development process.

Joint Venture arrangement with CTRH *(ASX announcement 7 January 2019)*

Mayur has a legally binding agreement in place with China Titanium Resources Holdings Limited (CTRH) whereby CTRH may earn up to a 49% stake in MR Iron PNG Pte Ltd (MIPP). CTRH is to provide up to US$25 million in funding for the construction of the Pilot Plant and Full-Scale Plant on the following terms:

a. CTRH to fund 50% of the Maximum Budget for the Stage 1 Pilot Plant that is to be agreed between the parties. MRL will provide the remaining 50% of the Maximum Budget for the Stage 1 Pilot Plant but may at its sole option defer payment of half (50%) of its funding obligation for the Stage 1 Pilot Plant, in which case CTRH will fund 75% of the Maximum Budget for the Stage 1 Pilot Plant. CTRH will be solely responsible for funding any expenditure in excess of the Maximum Budget that is required to construct the Stage 1 Pilot Plant. China Titanium Resources Holdings to provide up to US$25m for development of Orokolo Bay Industrial Sands Project – Pilot Plant & Full-Scale Operation

b. Should the conditions precedent for proceeding to the Stage 2 Full Scale Plant be met (refer Stage 2 description above) CTRH will fund the capital expenditure for the Stage 2 Full Scale Operation subject to the total funding provided by CTRH for both the Stage 1 Pilot Plant and the Stage 2 Full Scale Operation not exceeding US$25 million.

c. CTRH will receive a 2% equity interest in MIPP for each US$1 million in funding contributed by CTRH,

provided that CTRH's total equity interest in MIPP is capped at 49%.

d. CTRH will be solely responsible for funding the operating costs of the Stage 1 Pilot Plant and the related bulk sampling program during the operation of the Stage 1 Pilot Plant.

e. Although it is considered extremely unlikely, to the extent that additional funding above US$25 million is required for the construction of the Stage 2 Full Scale Project, MRL shall provide loans to MIPP with those loans being repaid, on a priority basis, from the cash flows generated by MIPP from the operation of the Stage 2 Full Scale Plant.

Operations management

Mayur will manage the operations from a PNG base with its head office in Port Moresby. This PNG base would report to Mayur's corporate headquarters in Brisbane and Singapore which would be the base for executive functions including general management, marketing, sales, administration, information technology and ship planning.

During the construction and start-up phase of the mine, Mayur will use a combination of its own employees and a contracting company to establish and run the operations.

Such an arrangement would likely be an operational joint venture with Mayur having key oversight roles around geology, mine planning, survey, quality and transhipping. The contracting company should have the ability to manage and evaluate all aspects of operating a mineral sands style mine.

Professional and trades personnel would be sourced from the PNG contracting company's workforce. Operators could be sourced from various localities around rural PNG in the Gulf Province, and new operators would be trained and educated as required.

Mayur would where possible recruit locally within PNG utilising national labour and service providers and promote local business development.

FIFO from Port Moresby, the Philippines and/or Brisbane would provide a good source of skilled people who could live in location and be long-term employees of the operations. These already competent employees would build the site knowledge bank that leads to greater efficiency and a reduction in training costs over time.

Environmental and social impact assessment

The two most important pieces of PNG legislation regulating the environmental and socio-economic aspects of the project are the Mining Act 1992 (Mining Act) and the Environment Act 2000 (Environment Act).

Bulk sample environmental permit

The environmental permit authorises the carrying out of a mineral exploration program and the extraction of a bulk sample within the Orokolo Bay exploration licence. The permit was issued on 1 July 2015 and was recently renewed on 10 February 2020 for two years. This permit approves level 2 (Sub-category 2.4) activities related to mineral exploration and mining associated with the extraction of no greater than 100,000t per annum.

Full-scale mining environmental permit

The environmental permit authorises the development of a mechanised mining project within the Orokolo Bay mineral sands mining project area. The permit was issued 15 March 2019 for a term of 25 years with a date of expiry on 16 March 2044. This permit allows for:

- The discharge of waste into the environment from its premise while carrying out Level 2 (sub-category7.2) activities associated with mechanised mining on a Mine Lease issued under the Mining Act 1992 involving the non-chemical processing of more than 50,000t per annum.

- To extract water from surface and groundwater resources within the premise while carrying out a level 2 (sub-category 7.2) activity for purposes associated with mechanised mining on a Mining Lease issued under the Mining Act 1992 involving the non-chemical processing of more than 50,000t per annum.

- A Mining Lease cannot be granted by the Minister for Mining until an Environment Permit has first been granted by CEPA.

Socio-economic and cultural heritage impacts

To be considered a success the Project must have an enduring positive impact at all levels of PNG society. Some of the positive impacts include direct capital investment, gross taxation revenue, royalty payments, the potential for new industrial development and employment and training opportunities.

As required under Section 155 of the *Mining Act 1992*, a Compensation Agreement has been successfully negotiated between Mayur and the landholders (customary landowners and holders of leases over government land) of the land currently planned for development in phase 1 of the project. Negotiations with the landholders impacted by phase 2 of the project is underway. The Compensation Agreement was negotiated and executed with the agents of the landowning clans and sub clans.

Project execution

The Project requires the development of a 5 Mtpa mining project with multiple products, plus all associated transhipping infrastructure located in the Gulf Province of PNG. The scope of works to be completed under this Project provides infrastructure and operating systems necessary for the efficient operation of mine, processing, stockpiling and transhipping facilities.

The project is being developed in two distinct phases i.e. 1 & 2, with phase 1 providing all the capability and infrastructure for a trial phase . Phase 1 allows Mayur to extract and beneficiate 100,000t of VTM for use in smelting trials in China. The processing methodology for Phase 1 is constrained to a single module containing the wet magnetic beneficiation circuit to provide the required tonnages for the trial program.

Phase 2 entails the installation of the entire suite of beneficiation circuits i.e. Spirals, WHIMS, Up-current Classification, Shaking tables and DMS media production as well as the extension of the Phase 1 capability.

After careful consideration with regards to the appropriate contracting strategy for the Project, taking into account the phased development, the scale of the Project and the requirement to lock in long term resources as a key considerations, it was decided to execute the project using an integrated owners team led by a Project Director.

A small full-time owner's representative project management team would be engaged as part of the detailed design phase. Selection would be based on job descriptions to match the functional area of management required.

This DFS has determined the Project execution schedule with milestone dates shown below in

Table .

Milestone Activity	Date
DFS	Completed
Pilot Plant Commencement of Production (400 tph)	May 2021
Trial Shipment of VTM	June 2021
ML Granted	May 2021
Final investment Decision (FID)	June 2021
Construction Phase full scale plant commences	July 2021
Commissioning and Commencement of full-scale operations (800 tph)	December 2021

Table 3: Milestone dates

The schedule plans the first VTM trial shipment for Quarter 2 of 2021 and the start of commercial shipments of VTM, zircon, construction sand and DMS media in Quarter 4 2021.

The major milestone for the commencement of construction is the approval and the mining lease grant planned for Quarter 2 2021.

Products and Marketing

The Project will produce a number of different products that have different applications and markets. Products and applications are shown in the below table.

Ref	Product	Description	Volume	Target Market
1	Vanadium Titano-magnetite	A source of iron ore, also known as vanadium titano - magnetite "VTM" or iron sand concentrate.	~400,000 tpa	For export to steel mills /manufacturers in China / North Asia or traders
2	Magnetite use as Dense Media Separation for Coal Washing	For use in coal washing as a dense media separation (DMS)	100,000 tpa	For export to customers in Australia (coal mining companies).
3	Zircon Heavy Mineral Concentrate	A semi-processed zircon concentrate (20% Zr)	~8000 tpa	For export to customers / traders in Asia (e.g. industrial sands processors in Hainan, China)
4	Silica Construction Sands	High quality silica sands for use in concrete, pavements & roadway construction	~1 Mtpa	For export to customers in Sydney, Australia or Singapore

Table 4: Product table with volumes and target markets

Vanadium Titano-magnetite (VTM)

Mayur has a condition precedent binding offtake agreement in place with Qingdao Shinebest (Shinebest) in China for the supply of VTM product sands from the Orokolo Bay Project.

The agreement covers the initial requirement for a bulk sample of VTM, that is subject to statutory approvals, from the Orokolo Bay Stage 1 (Pilot Plant) to be used for commercial scale acceptance testing. The agreement also includes a commercial framework for the offtake of 200,000t of product per annum. This framework is to apply upon acceptance of product quality from the Pilot Plant stage testing, and when the project is expanded to a full-scale production (Stage 2).

The proposed specification for the VTM is outlined below.

Typical Chemical Analysis after processing		Typical Size Distribution	
Fe	57-58.0%	Aperture (µm)	Wt % Retained)
SiO_2	1.8 - 2.3%	+300	0.7
Al_2O_3	2.1%	+ 150	33.2
TiO_2	12.9%	+ 125	19.4
P	0.06%	+ 106	17.0
V_2O_5	0.48%	+ 90	18.9
S	0.012%	+ 75	7.1
CaO	0.40 - 0.55%	+45	3.0
MnO	0.68%	- 45	0.7
MgO	1.60 - 1.70%		**100%**
K_2O	0.030%		
Specific gravity	5.0 g/cm^3		
Bulk density	2.74 g/m^3		
Angle of repose	30°		
Hardness (MOHS)	5.5-6.5		
Melting Point	1565° C		
Free moisture content at 105° C	Max 7%		

Figure 5: Vanadium Titano-magnetite specification sheet

The above specification is based upon a range of test work from 4 pit samples spaced across the entire Project resource. The specification compares favourably to other VTM specification ores being currently consumed by the Asian market

Pricing assumptions for the VTM are based on conservative forward forecasts with the long-term Iron Ore price assumed at USD$66.3/t on a CFR China real basis. VTM (FE 57%) pricing has been determined from the 62 % Fe CFR China reference price with applicable grade and impurity adjustments.

Product	Unit	Basis	2021	2022	2023	2024 +	Source
Iron Ore (FE 62%)	US$/t real	CFR China Real	75.1	70.0	63.0	66.3	*Consensus forecast sourced by Management, August 2020*
Mayur VTM (FE 57 – 58%)	US$/t real	CFR China Real	58.66	54.70	49.23	51.77	*Consensus pricing with Fe adjustment and (- 15%) discount applied*

Table 5:Iron ore (Fe 62%) and VTM (57%) pricing assumptions

Magnetite use as Dense Media Separation for coal washing

Another potential market for the magnetite product is for dense media in coal washing in Australia (either Queensland or New South Wales or both). Various test work undertaken by ALS and CRL Energy laboratories in Wellington

identified that the Mayur magnetite once taken through a grinding circuit with sufficient retention time to meet end users sizing requirements is suitable for this application (refer ASX announcement on 15 February 2019).

Mayur has a number of Letters of Intent (LOI's) in place with major Coal producers in Queensland and New South Wales. Magnetite product allocated for the DMS market will be sourced from Mayur's proposed VTM product for export to the steel industry.

The DFS contemplates grinding of the Magnetite product on-site in Papua New Guinea (via a ball mill) to achieve customer sizing specifications. The product will then be shipped in up to 30,000t parcels to be distributed to Queensland based customers from a Mackay based storage facility and NSW based customers through the Port of Newcastle.

Mayur has secured an option to a land site at Mackay harbour which could be used as a ship receival, storage, handling and dispatch yard. Mayur is also in discussions with companies holding land areas at the Port of Newcastle for a receival, storage and dispatch yard.

Pricing assumptions for DMS product remain commercial in confidence, however it should be noted that the Project's low-cost extraction (at surface mining and no drill and blast along with its proximity to Mackay and Newcastle will afford it a significant cost advantage compared to the existing suppliers from Tasmania or South Africa.

Zircon Heavy Mineral Concentrate

In addition to the VTM product the in-situ ore at Orokolo Bay also contains valuable non-magnetic heavy minerals, this includes zircon. To maintain the technical simplicity of the Project (and also keep additional CAPEX to a minimum) the plan will be to produce a 20% ZrO2 concentrate at mine site and suitable for further upgrading by others.
Metallurgical test work conducted by IHC Robbins for Mayur has produced a zircon concentrate with the chemical composition shown below.

Concentrate Chemical Analysis (as shipped)	
ZrO_2	16-24%
Fe_2O_3	25.6%
TiO_2	11.5%
Al_2O_3	3.92%
P_2O_5	0.38%
CaO	4.56%
MgO	2.62%
SiO_2	21.2%
U	390ppm
Th	318ppm

Table 6: HMC chemical analysis

Mayur has taken a similar approach with its marketing of zircon concentrate as it has done with VTM and has secured a number of LOI to purchase. Given the Project's relatively small saleable zircon production volume, it is likely that this will all be consumed by a single customer through a medium to longer term offtake arrangement. Mayur wishes to underwrite forecast revenues through creditworthy offtake parties via a long-term binding contract arrangement.

Limited published data exists for the global selling price of crude or semi processed zircon concentrates and shipments of heavy mineral concentrates are a fragmented and difficult to quantify. Hence one generally accepted rule-of-thumb for estimating the price of the concentrate is to apply a USD value per % Zr of the concentrate product.

Various estimating factors exist for determining the value of zircon concentrates and most are based on the purified theoretical zircon content minus the expected cost of further processing to get the product to a standard or premium grade and global published pure zircon price. Zircon concentrates, while generally easier to identify in the trade data, range significantly in composition including zircon.

As of August 2020, crude concentrates in the range of 20-50% ZrO_2 were trading in the range between $13 – $17 per % Zr. Pricing assumptions for Zircon are shown below.

Product	Unit	Basis	2020	2021	2022	2023	2024 +	Source
Zircon Concentrate Price (20% ZrO2)	US$ per % ZR	CFR China Real	15					*Conservative estimate based on sales of similar product.*

Table 7: Zircon pricing assumptions

Silica construction sands

Based on a mining rate of 5 Mtpa, it is planned to produce ~ 1 Mtpa of construction grade sand as a by-product from the project for supply into the Sydney or Singapore construction market.

The sand from the project has been tested by a range of end users including Monier and Boral, also independent tests were undertaken by Bureau veritas and BCRC and is regarded as suitable for use in Fine Aggregate in Concrete, Asphalt Aggregate and Unbound Pavements if suitably graded with coarser sands.

The sand contains significant magnetite which is resistant to weathering and unlikely to produce staining. Given the high relative density of magnetite the concrete will display a corresponding increase in density when compared with more silicate rich sands.

For engineering purposes, the sand may be summarised as:

- A fine Quartzo-Lithic Hornblende Sand.
- Well-sorted, clean and composed principally of competent grains (97%) accompanied by limonitic particles or grain accretions (3%).
- Hard, strong and durable.
- Mechanically suitable.
- Containing 47% free silica as quartz.
- Presenting low risk of mild ASR in concrete

Mayur Resources Results		Specification Limits AS 2758.1
Grading		**Uncrushed Fine Aggregate**
Sieve (mm)	**% Pass**	
2.36mm	100	60 to 100
1.18mm	100	30 to 100
0.600mm	96	15 to 100
0.300mm	53	5 to 50
0.150mm	4	0 to 20
0.075mm	0	0 to 5
Fine Aggregate		
Particle Density (SSD)	2.74 t/m^3	2.10 to 3.20 t/m^3
Particle Density (Dry)	2.68 t/m^3	2.10 to 3.20 t/m^3
Water Absorption	2.20%	Recommended 2.0% but no fixed value in AS2758.1
Organic Impurities Other Than Sugar	Pass	Pass
Percent Passing 75 micron	0%	5%
Material Finer than 2 micron	0.00%	2%
Chlorides	0.003%	<0.01%
Sulfate	0.03	5% however greater than 0.01% should be reported on
Light Particles	Nil	<1%
Sugar	Not detected	Pass
Sodium Sulfate Soundness Total Weighted Loss of Sample	1.20%	Maximum 6%
Petrographic Examination	47% Free Silica	No specification

Figure 6: Construction sand specifications

Typical chemical analysis and size distributions are shown in the below table.

Typical chemical analysis after processing		Typical size distribution	
Fe_2O_3	6.36 %	Aperture (µm)	Wt % Retained)
SiO_2	66.5 %	+600	4.0
Al2O3	12.7 %	+ 425	16.8
TiO2	0.77 %	+ 300	50.5
P_2O_5	0.104 %	+ 212	89.7
V_2O_5	0.02 %	+ 150	99.7
Cr_2O_3	0.015 %	+ 75	100
CaO	5.02 %		
MnO	0.11 %		
MgO	3.31 %		
Nb_2O_5	0.001 %		
K_2O	1.33 %		
ZrO_2	0.01 %		
U (ppm)	20		
Th (ppm)	15		
SO_3	0 %		

Table 8: Chemical analysis and typical size distribution

The company is also investigating potential sales channels in Singapore which reportedly has a shortage of construction sand from reliable sources. A competitor market scan on behalf of the company was undertaken based on construction and general / fill sand for the Singapore Market.

Capital cost estimate

The capital cost estimates are presented at a summary level below:

Area	USD$m	Source
Mining	0.623	Supplier Quotes & Estimates
Mobile Equipment	1.885	Contracts, Supplier Quotes & Estimates
Mineral Processing Equipment	4.284	Contracts, Supplier Quotes & Estimates
Dense Media Separation Grinding Plant	1.123	Supplier Quotes & Estimates
Stockpiles and Tailings	0.413	Supplier Quotes & Estimates
Plant, Electrical & Instrumentation	2.444	Supplier Quotes & Estimates
Wharves & Shiploading	1.544	Supplier Quotes & Estimates
Infrastructure	1.236	Supplier Quotes & Estimates
Support Vessels	0.215	Supplier Quotes & Estimates
Other / Consumables	0.058	Supplier Quotes & Estimates
Fuel storage facilities	0.500	Siecap Estimate
Construction Indirect	1.241	Supplier Quotes & Estimates
EPCM	1.897	Siecap Estimate
Total Direct Costs	**17.463**	
Owners costs	1.452	Siecap Estimate
Risk Allowance	0.38	Based on Risk Register
Contingency	1.182	Based on Probabilistic Estimate
Total Indirect	**3.014**	
Total	**20.477**	

Table 9: Capital cost estimate

Operating cost estimate

The operating estimate have been divided into the areas of mining, processing, logistics and transport, jetty operations, indirect costs and shipping to generate a CFR cost.

The operating cost estimates for the are summarised below.

Cost element	Annual Operating Costs (USD$M)	Life of Mine Operating Costs (USD$m)
Mining	2.46	36.84
Processing (WCP)	4.17	62.60
Processing (DMS)	1.06	15.95
Haulage and Load out (Muro)	0.71	10.65
Barging and shiploading	9.32	139.79
Indirect costs	1.49	22.41
Site Costs	**19.22**	**288.24**
Corporate Costs	0.84	12.56
Shipping & Delivery	17.96	269.37
Total Costs	**38.01**	**570.16**

Table 10: Operating cost estimate

Shipping methods for each product are summarised in Table 11 below.

Products	Destination	Sales Basis
Magnetite (VTM)	China	Bulk shipped on CFR basis
HMC (Zr)	China	Bulk shipped on CFR basis
DMS magnetite	Bowen Basin, Queensland (Via Mackay)	Delivered (Mine site)
Construction Sand	Sydney & Singapore	Bulk shipped on CFR basis

Table 21: Shipping methods and destinations

VTM and HMC (Zircon) product will be shipped from PNG to China and sold on a Cost and freight (CFR) basis.

Construction sand will be sold into either the Australian east coast market or the Singapore and sold on a CFR basis.

The DMS option includes handling and grinding (via Ball mill plant) for 0.1 Mtpa of magnetite on site in PNG before shipping to Mackay (Queensland, Australia), handled at the port, plus an allowance for road transport to customer's mine sites where it will be used in coal washing.

Shipping and handling costs for each product are summarised in Table 12 below. This has been prepared for each of the four products (i.e. Magnetite, DMS, HMC (Zircon) and Construction Sand) in un-escalated (real based) terms.

Description	Unit Rate (USD$/t)	Products	Source / Comments
Shipping - PNG to China	12	VTM; HMC (Zr)	Base on CNTI Quote
Shipping - PNG to Mackay	7	DMS magnetite	Siecap estimate
Shipping - PNG to Sydney	8.5	Construction Sand *(DFS base case)*	Siecap estimate
Shipping - PNG to Singapore	11	Construction Sand *(Alternate option)*	Siecap estimate
Discharge and Handling at Wharf in Mackay	14.08	DMS magnetite	Source: NQ Bulk Ports, Firm Quotes
Trucking & delivery to site (Bowen Basin)	25.00	DMS magnetite	Transport to Bowen Basin mine site. Siecap estimate

Table 32: Shipping and Handling Costs.

Power and Diesel Pricing

From the mechanical equipment lists, the absorbed power for each relevant area of plant was determined in kWh. This power usage was then determined using the industry standard 0.267 L/kWh conversion factor for absorbed power requirements to determine fuel burn (e.g. litres of diesel).

Aside from the export shipping cost, the main operating expense for the project is in the fuel requirement for the operation. The pricing for fuel has been based on a discounted quote for diesel from offered by one of PNG's larger fuel suppliers at diesel list bulk price.

The fuel price used in the estimates is 2.25 PGK per litre based on pricing from petroleum suppliers in PNG with delivery and reasonable contingency applied.

Both operating and maintenance labour costs were based upon international projects of similar socio-economic background to PNG.

Royalties

Royalties have been applied as per PNG legislation and is based upon 2% Royalty (to Project Area Landowners) and 0.5% Production Levy to the MRA.

Currency Basis

All estimates are based or converted to United States dollars. rates were obtained in foreign currencies; the following exchange rates have been utilised.

- AUD/USD of 0.72, and
- USD/PGK of 0.28

Escalation

All costs are estimated on the basis of the pricing for labour and materials existing in real 2020 terms.

Financial analysis and evaluation

Analysis of discounted cashflows

A discounted cash flow model was used to derive a post-tax net present value (NPV) for the Project. The key valuation results are presented below.

Basis of cashflows	Key results	Ungeared Post-Tax
Real	NPV (@10%)	US$ 131 million
	IRR	103.7%
	Payback Period	1.1 Years
Nominal	NPV (@10%)	US$ 153 million
	IRR	107.7 %
	Payback Period	1.1 Years

Table 13: Key valuation results – base case

The assumptions used in the base case financial model are as follows:

- Discount rate of 10 % on post-tax cashflows
- Project life of 15 years
- Taxation rate of 30% applied with five-year waiver as an establishment incentive
- PNG Royalty of 2.5% (2% Royalty and 0.5% Production Levy) based on an FOB sales price methodology.
- Straight-line depreciation based on a 10-year period.
- Figures presented on a 100% equity basis for the project
- Inflation for the nominal version of the model of 2.0% has been applied to sustaining capital costs, operating costs and commodity prices for the nominal models.
- No terminal value has been added to the NPV, reflecting no extension to the plant and/or mine life.

Sensitivity Analysis

NPV sensitivity analyses have been completed and presented in the tornado chart in Figure 7 below which highlight that the project is most sensitive to Operating costs, Construction Sand Price, followed by Iron Ore Pricing.

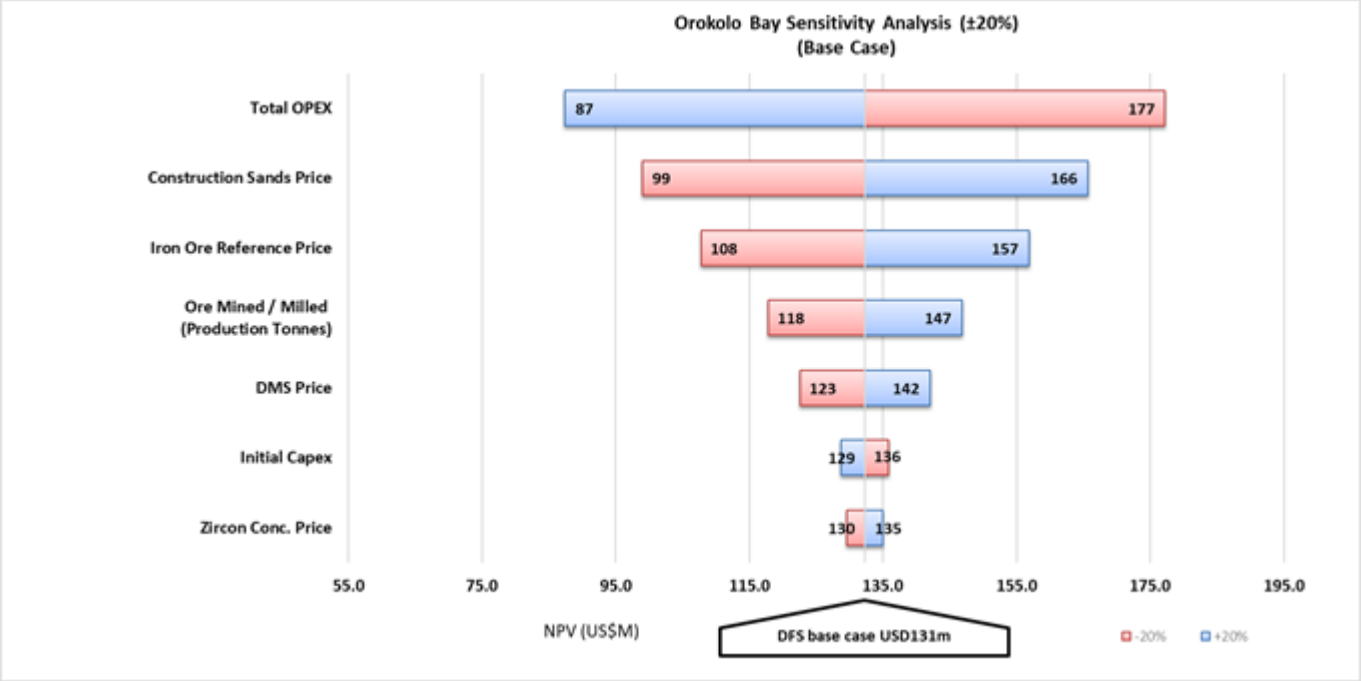

Figure 7: Sensitivity Analysis

Discount Rate sensitivity

Sensitivity to discount rate is also an important consideration. Mayur have assumed a conservative 10% ungeared (real) discount rate; however, sensitivities are shown in the below table.

Discount Rate (real)	NPV – Ungeared Post Tax (USD$ m)
5.00%	188
8.00%	151
10.00%	**131**
12.00%	115

Table:44 - NPV at different discount rate

Taxation

The evaluation is based on an incorporated tax structure being a stand-alone tax entity being eligible for a five-year tax holiday given Mayur would be opening up a new product stream for PNG's resources sector. Noting that Ramu Nickel, PNG's first nickel mine development, was able to secure a 10-year tax holiday for its development of the Ramu Nickel Project. Mayur would then pay tax at 30% of taxable income rate.

Mayur will also be investigating and strongly pursue the potential for the project to be eligible for recognition under the Special Economic Zone Authority Act 2019 which would in effect provide further additional tax and fiscal concessions to the project.

Competent Persons Statement

The Ore Reserve Report for the Orokolo Bay Mineral Sands Western Area has been compiled in accordance with the guidelines defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (2012 JORC Code). The information in this report that relates to Exploration Results, Mineral Resources and Ore Reserves is based on information compiled by Troy Lowien, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy Troy Lowien is employed by Groundwork Plus Pty Ltd. Troy Lowien has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Forward Looking Statement and Important Information

This announcement includes "forward looking statements" within the meaning of securities laws of applicable jurisdictions. Forward looking statements can generally be identified by the use of the words "anticipate", "believe", "expect", "project", "forecast", "estimate", "likely", "intend", "should", "could", "may", "target", "plan" "guidance" and other similar expressions. Indications of, and guidance on, future earning or dividends and financial position and performance are also forward-looking statements. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Mayur and its officers, employees, agents or associates, that may cause actual results to differ materially from those expressed or implied in such statement. Actual results, performance or achievements may vary materially from any projections and forward-looking statements and the assumptions on which those statements are based. Readers are cautioned not to place undue reliance on forward looking statements and Mayur assumes no obligation to update such information.

Non-IFRS Measures

The Company supplements its financial information reporting determined under International Financial Reporting Standards (IFRS) with certain non-IFRS financial measures, including cash operating costs, All-In Sustaining Cost, EBITDA, NPV, IRR and project payback. The Company believes that these measures provide additional meaningful information to assist management, investors and analysts in understanding the financial results and assessing our prospects for future performance.

About Mayur Resources

Mayur Resources is an ASX-listed company focused on the development of natural resources in Papua New Guinea. The maturation of our diversified asset portfolio, which spans industrial minerals, power generation, coal, copper and gold, will contribute to nation-building and job creation in a country experiencing a significant growth trajectory. Our unique portfolio of projects, many in close proximity to world scale producing mines, are either coastal or near the coast for easy development access and future access to sea borne markets.