QUEENSLAND PACIFIC METALS

Feasibility Study Confirms TECH Project Credentials

Highlights

- **Advanced Feasibility Study on Stage 1 TECH Project complete, facilitating formal commencement of debt funding with potential lenders and providing guidance to investors.**
- **Scoping Study on Stage 2 TECH Project expansion also complete.**
- **The studies highlight the strong financial metrics of the TECH Project:**

	Base Case		Spot Case	
	Stage 1	Combined Stage 1 and 2	Stage 1	Combined Stage 1 and 2
Steady State annual EBITDA	$546m	$1,042m	$577m	$1,098m
Pre-tax NPV_8	$2,665m	$4,919m	$2,944m	$5,393
Pre-tax IRR	18.4%	19.7%	19.3%	20.7%

- **Nameplate production of:**

Base and Spot Case	Stage 1	Combined Stage 1 and 2
Nickel sulfate expressed as Ni metal	16 kt	32.8 kt
Cobalt sulfate expressed as Co metal	1.75 kt	3.58 kt
Hematite	610 kt	1,245 kt
4N HPA	4 kt	4 kt

- **Lowest quartile operating cost (after co-product credits) on nickel cost curve**
- **Stage 1 development capex estimate of A$1.9b + contingency allowance compares well with the 2020 Pre-Feasibility Study estimate of A$650m, considering a 2.7x plant scale increase and global equipment cost inflation over the past two years.**
- **Capital estimate prepared by recognised engineering firm Hatch with support from other key vendors and consultants.**
- **Debt financing due diligence process, lead by advisors KPMG, will commence immediately and which will include:**
  - **NAIF – Strategic Assessment Phase completed;**
  - **Export Finance Australia – conditional commitment received of A$250m;**

- **K-Sure – formal expression of interest to participate on terms similar to Export Finance Australia; and**
- **Other export credit agencies and commercial banks who have provided formal expressions of interest.**

✓ **Feasibility Study presents the strong financial metrics of the TECH Project, which has already secured offtake agreements for 100% of nickel and cobalt sales for the life of the project with General Motors, LG Energy Solutions and POSCO, all three of which are also shareholders of QPM.**

✓ **Capex estimate has been undertaken at a peak in global inflation and equipment pricing – advice from key vendors is that they are seeing the cost of manufacturing reduce significantly, which will assist QPM when it is time to place formal orders.**

✓ **Ongoing work on some aspects of the TECH Project to improve estimate accuracy and value engineering initiatives to implement identify capex savings will take place over the next few months in parallel with the debt financing process.**

Queensland Pacific Metals Ltd (**ASX:QPM**) ("**QPM**" or "the **Company**") is pleased to announce the results of its Advanced Feasibility Study ("**Feasibility Study**") for Stage 1 of the TECH Project and a Scoping Study for Stage 2 expansion of the TECH Project.

Stage 1 Overview and Financing Strategy

Stage 1 of the TECH Project has been designed at a nameplate capacity to process 1.05m dmt (1.6m wmt) per annum. Key assumptions and operating parameters are detailed in the tables below.

Table 1: Operating Parameters

Operating Parameter	Plant Design
Nameplate throughput capacity	1.05 m dmt
Plant availability / Operating Factor	91.3%
Ramp-up to nameplate capacity	2.25 years
Design life	30 years

Table 2: Production assumptions and outputs

Metal	Final Product	Ore Grade	Recovery to Final Product	Stage 1 Annual Nameplate Production
Nickel	Nickel sulfate	1.6% Ni	95.2%	15,992 t
Cobalt	Cobalt sulfate	0.18% Co	92.3%	1,746 t
Iron	Hematite pellets suitable for sinter feed	42.0% Fe	93.0%	607,395 t
Aluminium	4N HPA	1.59% Al	n/a	4,000 t
Magnesium	Magnesium oxide	1.94% Mg	70.0%	28,856 t

The capital estimate for Stage 1 of the TECH Project currently sits at an accuracy range of –15% to +24% and is presented in the table below.

Table 3: Capital estimate

Area	Capex (A$m)
Direct Costs	
Materials Handling and Front End	91.0
Extraction plant, including DNi™ processing	969.7
Nickel/Cobalt Sulfate Refinery	176.3
HPA Refinery	82.4
Utilities and Infrastructure	103.1
Total Direct Costs	**1,422.5**
Indirect Costs	
Project Indirects	238.7
Detailed engineering, EPCM and Owners Team	256.9
Total Indirect Costs	**495.6**
Total Capex ex contingency	**1,918.1**
Contingency allowance @ 10%	191.8
Total Capex inc contingency	**2,109.9**

QPM and its debt advisors KPMG have made significant progress to date on procuring debt funding for the TECH Project:

- NAIF – Strategic Assessment Phase completed;
- Export Finance Australia – conditional commitment received for A$250m;
- K-Sure – formal expression of interest to participate on terms similar to Export Finance Australia; and
- Other export credit agencies and commercial banks who have provided formal expressions of interest.

As part of QPM's ongoing discussions with these debt financiers, the Feasibility Study is sufficiently advanced to commence formal due diligence with an Independent Technical Expert ("**ITE**"). This body of work will begin imminently in parallel with QPM continuing to undertake engineering work on certain aspects of the plant to improve accuracy. These aspects primarily concern the KBR engineering package, which includes iron hydrolysis, aluminium removal and nitric acid recovery and recycle. QPM, Hatch and KBR are working as an integrated team to optimise the design and minimise technical risk in these areas. In addition, value engineering (cost reduction) initiatives will also be undertaken across the Project.

Contingency in the capital estimate has currently been assumed at 10%. Following the KBR engineering package work and value engineering, a detailed contingency estimate will be undertaken using the standard Quantitative Risk Assessment methodology.

In preparing the capital estimate, QPM believes it has been undertaken at the peak of global manufacturing pricing. This is based on discussions with key equipment vendors who are seeing significant reductions in international producer price indices .

Before reaching financial close for the debt package, QPM will update the capital estimate to ensure it represents current market information and will sign lump sum EP contracts with the key technology vendors. Easing global inflation, particularly continued reductions in equipment manufacturing costs in the near term, will likely reduce the capital cost of constructing the TECH Project.

Stage 2 Expansion Scoping Study

QPM has previously highlighted the strong potential for expanding the TECH Project following successful Stage 1 commercialisation. This is based on availability of limonite ore, gas supply, supporting infrastructure in Lansdown, and other factors. In addition, the execution of the offtake agreement with General Motors for 100% of nickel and cobalt production for the life of project from a Stage 2 expansion further reinforces this potential.

In addition, QPM and Hatch have undertaken a Scoping Study on the Stage 2 expansion of the TECH Project using the following key assumptions:

- For simplicity, Stage 2 is at the same scale as Stage 1, with the same grade of ore being processed;
- HPA production levels are not increased as part of the expansion, but this is possible if there is strong market demand;
- No utilisation of existing rail infrastructure for logistics – work will be undertaken in the future to assess this opex-saving opportunity; and
- Co-location of Stage 2 expansion next to Stage 1, within the Lansdown precinct.

The Scoping Study identified the following synergies for the TECH Project:

- A $350m reduction in capital cost compared with Stage 1 capital estimate - as a result of synergies and no expansion of HPA production;
- Estimated opex reductions of ~7% due to:
    - Economies of scale;
    - Increased purchasing power; and
    - Shared services such as laboratory, administration, maintenance functions, working capital and equipment etc; and
- Increased plant availability across the entire project by 2.5% as a result of maintenance scheduling advantages, process stream cross-overs and greater capacity to absorb equipment downtime with common plant and equipment being available;

Additional opportunities identified but not quantified and considered in the financial analysis of the Stage 2 expansion include:

- Utilisation of rail for logistics of ore and products;
- Gas supply chain savings;
- On-site production of ammonia for TECH Stage 1 and 2 use;
- Potential to export any excess power generated to the grid; and
- Further plant optimisation by increasing the scale of Stage 2 after the operational experience gained from Stage 1.

The Scoping Study capital estimate has an accuracy of ±35% and an operating cost accuracy of ±25%.

Financial Analysis

As part of the financial analysis, QPM has prepared Base Case and Spot Case scenarios where:

- Base Case assumptions are based on management's forecasts of key macroeconomic inputs; and
- Spot Case assumptions are based on a 10 day average of spot prices for key macroeconomic inputs.

Stage 1 operating expenditure has been estimated to a level of ±10%. Where available, revenue has been calculated using commercial offtake agreements and macroeconomic assumptions.

Key financial outputs and the underlying macroeconomic assumptions of the Feasibility Study and the Scoping Study are detailed in the table below.

Table 4: Key financial outputs and assumptions

Area	Base Case		Spot Case	
	Stage 1	Stage 1 and 2 Combined	Stage 1	Stage 1 and 2 Combined
Annual Nameplate Production Metrics				
Ore processed	1.05m dmt	2.15m dmt	1.05m dmt	2.15m dmt
Nickel sulfate (contained Ni)	15,992 t	32,784 t	15,992 t	32,784 t
Cobalt sulfate (contained Co)	1,746 t	3,579 t	1,746 t	3,579 t
Hematite	607,395 t	1,245,160 t	607,395 t	1,245,160 t
HPA	4,000 t	4,000 t	4,000 t	4,000 t
Financials				
Average nameplate revenue	$1,061m	$2,035m	$1,111m	$2,129m
Average nameplate opex	$515m	$993m	$534m	$1,031m
Average nameplate EBITDA	$546m	$1,042m	$577m	$1,098m
Valuation				
Pre-tax NPV_8	$2,665m	$4,919m	$2,944m	$5,393m
Post-tax NPV_8	$1,613m	$3,035m	$1,808m	$3,366m
Pre-tax IRR	18.4%	19.7%	19.3%	20.7%
Post-tax IRR	15.0%	16.1%	15.8%	16.8%
Capex				
Construction	$2.1b	$1.75b (additional)	$2.1b	$1.75b (additional)
Average nameplate sustaining	A$33.0m per annum	$60.9m per annum	A$33.0m per annum	$60.9m per annum
Unit opex				
Nickel unit costs / after co-product credits	A$(0.24)/lb (benefit)	A$0.97/lb	A$0.60/lb	A$1.89/lb
Key assumptions				
Nickel price	US$25,000/t	US$25,000/t	US$26,459/t	US$26,459/t
Cobalt price	US$62,500/t	US$62,500/t	US$51,507/t	US$51,507/t

Area	Base Case		Spot Case	
	Stage 1	Stage 1 and 2 Combined	Stage 1	Stage 1 and 2 Combined
Hematite price	US$105/t	US$105/t	US$94.90/t	US$94.90/t
HPA price	US$25,000/t	US$25,000/t	US$25,000/t	US$25,000/t
AUD:USD	0.7000	0.7000	0.665	0.665

Schedule to Production

The assumed schedule for Stage 1 is provided in the figure below:

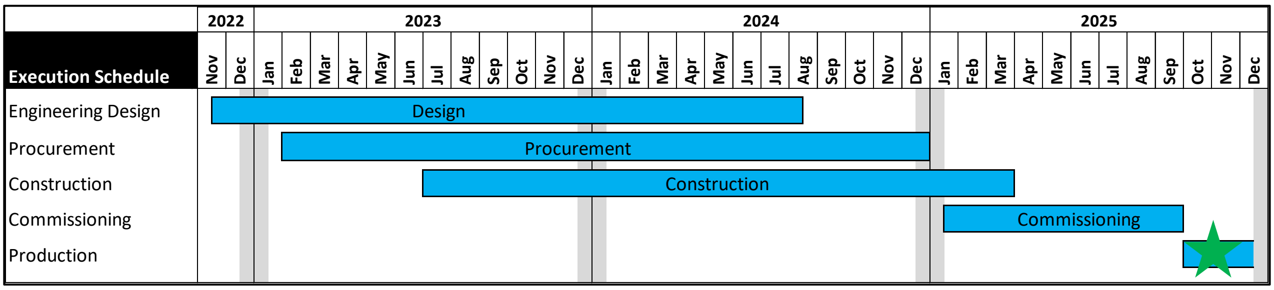


Figure 1: Stage 1 Execution Schedule

As detailed above, first production is scheduled for Q4 2025. Between now and Final Investment Decision, QPM will continue to work with its key equipment suppliers and engineering service providers to bring forward commissioning and first production.

Managing Director's Comment

Managing Director and CEO Dr Stephen Grocott commented,

"We are pleased to present the results of the feasibility studies for the TECH Project. The outputs of these studies represent a moment in time and the culmination of hard work from the QPM team, Hatch Ltd and our other consultants. However, the work does not stop here and as we now continue to work on the project and advance towards a final investment decision in parallel with our funding initiatives."

Abbreviations

Abbreviation	Meaning	Abbreviation	Meaning
wmt	wet metric tonne	$	Australian dollars
dmt	dry metric tonne	US$	US dollars
t	tonne	b	billion
kt	1000 tonnes	m	million

This announcement has been authorised for release by the Board.

Company Disclosures

Cautionary Statements

The Feasibility Study and Scoping Study (the "**Studies**") referred to in this announcement is a study of the potential viability of the TECH project. It has been undertaken to understand the technical and economic viability of the TECH project.

The Company has concluded that it has a reasonable basis for providing the forward looking statements included in this announcement. The reasons for this conclusion are outlined throughout this announcement. However, the assumptions and results of the Studies set out above and elsewhere in this announcement ("**Study Parameters**") have been developed through feasibility work, testwork, commercial discussions, commerial agreements and the use of macroeconomic assumptions. For the avoidance of doubt, investors are advised that the Study Parameters do not constitute a production forecast or target in relation to any mineral resources associated with any project owned by QPM. QPM wishes to expressly clarify that the Study Parameters are based on an expected grade of nickel-cobalt ore to be imported by QPM under ore supply agreements with third party New Caledonian ore suppliers. The Study Parameters have been disclosed by QPM in order to provide investors with an intended scale and nature of the Project.

The Studies referred to in this announcement have been undertaken to assess the technical and financial viability of the Project. The Studies are based on the material assumptions set out in Annexure A. These include assumptions about the availability of funding and the pricing received for the Project's products. While QPM considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Studies will be achieved. To achieve the outcomes indicated in the Fesaibility Study, pre-production capital (including contingency allowance) is in the order of $2.1b and working capital is likely to be required.

Investors should note that there is no certainty that the Company will be able to raise this amount of funding required when needed. It is also possible that such funding may only be available via equity funding which may have a dilutive effect on the Company's share value. The Company may also pursue other strategies in order to realise the value of the Project, such as a sale, partial sale or joint venture of the Project. If this occurs, this could materially reduce the Company's proportionate ownership of the Project. Accordingly, given the uncertainties involved, investors should not make any investment decisions based solely on the results of the two Studies.

Competant Person Statements

Information in this announcement relating to the processing and metallurgy (including the JORC table in Annexure C) is based on technical data compiled by Mr Boyd Willis, an Independent Consultant trading as Boyd Willis Hydromet Consulting (BWHC). Mr Willis is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Willis has sufficient experience which is relevant to metal recovery from the style of mineralisation and type of deposits in New Caledonia where the ore will be sourced (from third parties pursuant to an ore supply agreement) and to the activity which they are undertaking to qualify as a Competent Person under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. This includes over 21 years of experience in metal recovery from Laterite ores. Mr Willis consents to the inclusion of the technical data in the form and context in which it appears.

The information in the Studies that relates to capital expenditure is based on information compiled and / or reviewed by Dr Stephen Grocott who is a Fellow of the Australasian Institute of Mining and Metallurgy. Dr Grocott has sufficient experience which is relevant to the metallurgy and processing method under consideration to qualify as a Competent Person as defined in the JORC Code. Dr Grocott is a full time employee of QPM and has consented to the inclusion of the information contained in this announcement in the form and context which it appears.

Forward Looking Statements

Statements & material contained in this ASX Release, particularly those regarding possible or assumed future performance, production levels or rates, commodity prices, resources or potential growth of QPM, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events & expectations and, as such, involve known and unknown risks & uncertainties. Although reasonable care has been taken to ensure facts stated in this Release are accurate and/or that the opinions expressed are fair & reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results & developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors. Nothing in this Release should be construed as either an offer to sell or a solicitation of an offer to buy or sell shares in any jurisdiction.

Annexure A – Feasibility Study Detailed Summary

Capital Expenditure

Capital Estimate

The capital estimate for Stage 1 of the TECH Project currently sits at an accuracy range of –15% to +24%. Total capex for the TECH Project is estimated at $1.9b plus an assumed 10% contingency.

Breakdown of capex is provided in the table below.

Table 5: Capex summary

Area	Capex (A$m)
Direct Costs	
Materials Handling and Front End	91.0
Extraction plant, including DNi™ processing	969.7
Nickel/Cobalt Sulfate Refinery	176.3
HPA Refinery	82.4
Utilities and Infrastructure	103.1
Total Direct Costs	**1,422.5**
Indirect Costs	
Project Indirects	238.7
Detailed engineering, EPCM and Owners Team	256.9
Total Indirect Costs	**495.6**
Total Capex ex contingency	**1,918.1**
Contingency allowance @ 10%	191.8
Total Capex inc contingency	**2,109.9**

The capex estimate was prepared by Lead Engineer Hatch with support from key technology and equipment vendors who provided estimates for major packages. This included:

- KBR PLINKE – iron hydrolysis, aluminium hydrolysis and strong nitric acid recovery, including evaporation.
- KBR Weatherly – weak nitric acid recovery from fluidised bed reactor off-gas.
- JordProxa – crystallisers within the sulfate refinery.
- SENET – solvent extraction within the sulfate refinery.
- EKATO – Leach tanks and mixers for the nitric acid leaching of ore.
- Hatch – fluidised bed reactor for thermal decomposition and magnesia production.
- Lava Blue / Stantec – HPA.
- Siemens – Process control and operations system, including DCS, operator training systems, etc.

Global equipment cost inflation has been a major issue in the last 2 years which has significantly affected large-scale resource projects around the world. In compiling this capex estimate, QPM and Hatch have had extensive discussions with vendors with regards to their pricing. From these discussions, the advice from vendors is that this capex estimate has been prepared at the height of the market, and there are now clear signs that manufacturing and equipment costs are now reducing

Prior to reaching financial close on its debt facility, QPM will update the capital estimate to ensure it represents current market information . The completion of this Feasibility Study allows debt financiers to commence their technical due diligence. In parallel with this process, QPM and Hatch will continue to undertake value engineering initiatives and maintain discussions with vendors to incorporate latest trends on pricing.

Production and Revenue

TECH Project Production Outputs

The TECH Project has been designed at a nameplate capacity of 1.05m dmt ore per annum. Based on expected moisture of imported ore from New Caledonia, this equates to 1.6m wmt per annum.

Plant design has been undertaken to allow for variability in ore grade. QPM will work closely with its ore supply partners to understand mine planning and expected shipment grades to ensure that plant feed can be optimised. Stockpile management and blending of ore will also assist this.

The assumed ore grade is based on typical ore specifications as outlined in QPM's ore supply agreements with Société Le Nickel ("**SLN**") and Société des Mines de la Tontouta ("**SMT**"). Recovery of metals contained within the ore is based on testwork, piloting and Aspen/IDEAS modelling undertaken in conjunction with the Feasibility Study. The tables below display underlying assumptions used in the Feasibility Study and the output of major products.

Table 6: Nameplate production of major products

Metal	Final Product	Ore Grade	Recovery to Final Product	Stage 1 Annual Nameplate Production	Stage 1 + 2 Annual Nameplate Production
Nickel	Nickel sulfate	1.60% Ni	95.2%	15,992 t	32,784 t
Cobalt	Cobalt sulfate	0.18% Co	92.3%	1,746 t	3,579 t
Iron	Hematite pellets suitable for sinter feed	42.0% Fe	93.0%	607,395 t	1,245,160 t
Aluminium	4N HPA	1.59% Al	n/a	4,000 t	4,000 t
Magnesium	Magnesium oxide	1.94% Mg	70.0%	28,856 t	59,154 t

The TECH Project will also produce several co-products that QPM anticipates (based on work undertaken) can be sold into international, domestic and local markets. A summary of these products is provided in the table below.

Table 7: Nameplate production of other co-products

Product	Stage 1 Annual Nameplate Production	Stage 1 + 2 Annual Nameplate Production	Commercial use / Potential sale
Ammonium sulfate	45,965 dmt	94,227 dmt	Saleable into agriculture for fertiliser

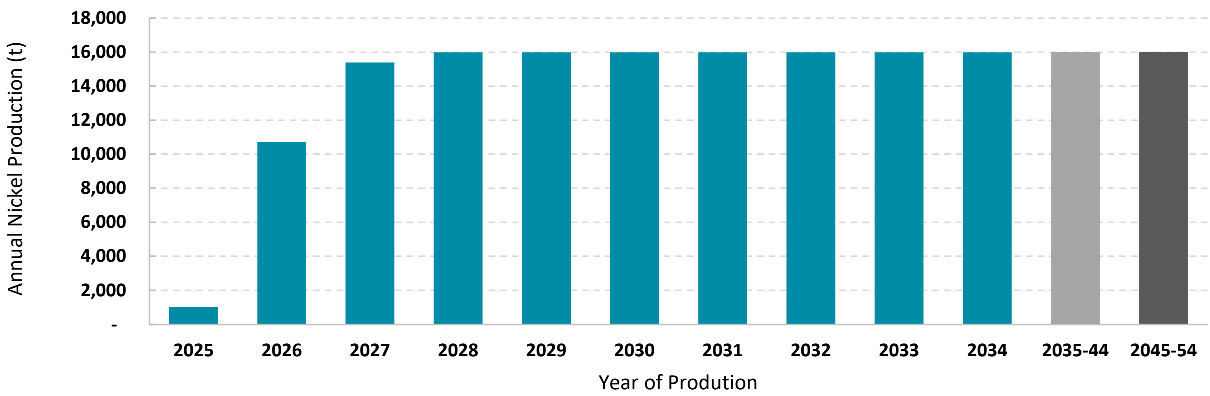
Product	Stage 1 Annual Nameplate Production	Stage 1 + 2 Annual Nameplate Production	Commercial use / Potential sale
Ammonium nitrate	12,532 t	25,960 t	Saleable into agriculture for fertiliser
Gypsum	85,113 wmt	174,481 wmt	Saleable into agriculture to treat sodic soil – typical of Burdekin agriculture region
Zinc sulfate	5,992 t	12,283 t	Saleable to zinc refineries
Engineered landfill	353,680 wmt	725,044 wmt	Saleable as a commercial engineered landfill – many areas around Townsville are flood prone and unusable for industry

Rampup and Production Profile – Stage 1

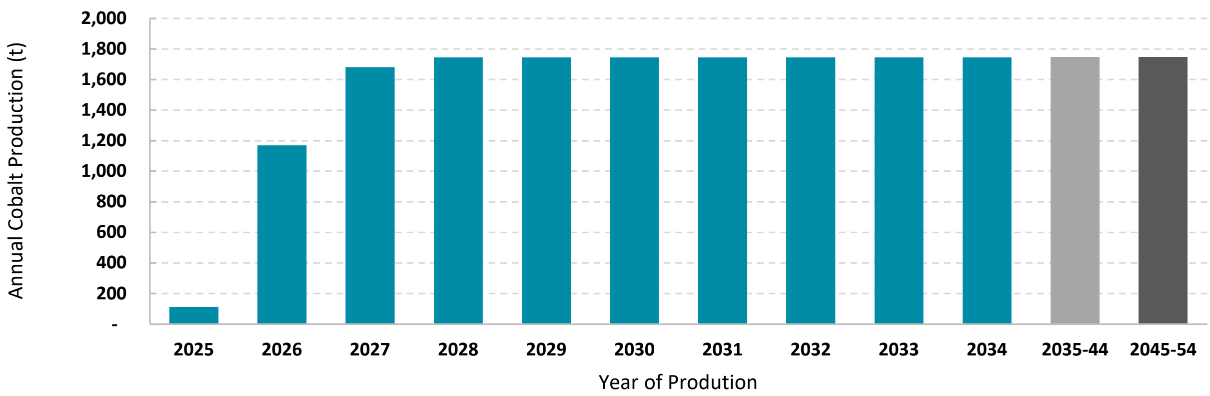
Rampup for the TECH Project has been based on a modified McNulty (2014) Series 2 (licensed technology with piloting) curve for processing plants in the minerals industry. The rampup profile assumed in the Feasibility Study is a 24 to 27 month rampup to nameplate capacity. As part of the construction schedule, commissioning of equipment of the plant is scheduled to commence early 2025, with first production commencing in Q4 2025.

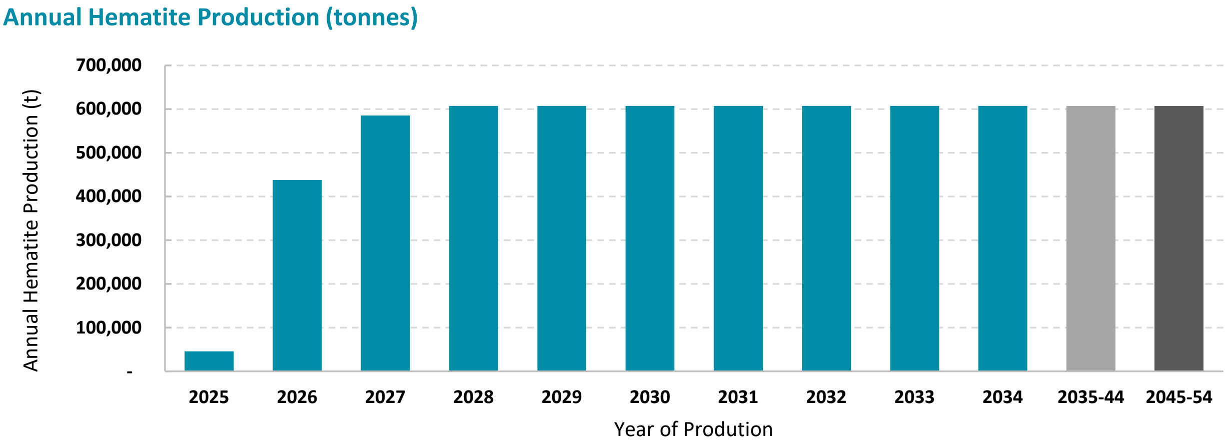
The production profile of major products is detailed in the figures below:

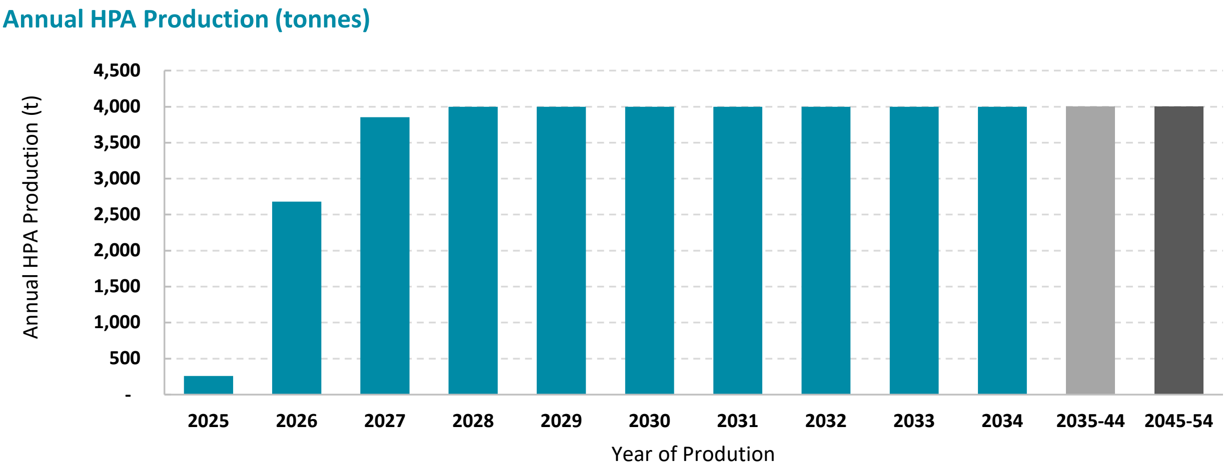
Annual Nickel Sulfate Production (tonnes Metal Equivalent)



Annual Cobalt Sulfate Production (tonnes Metal Equivalent)

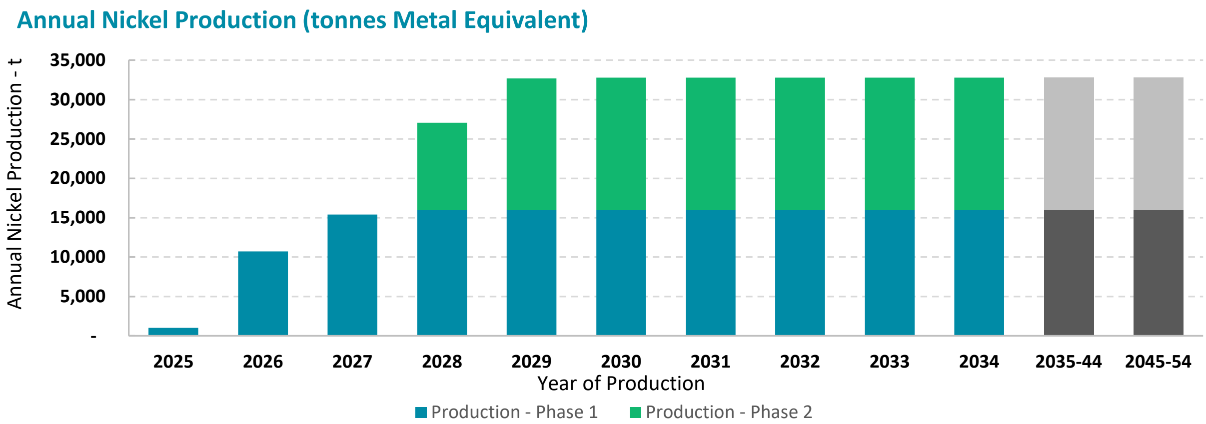


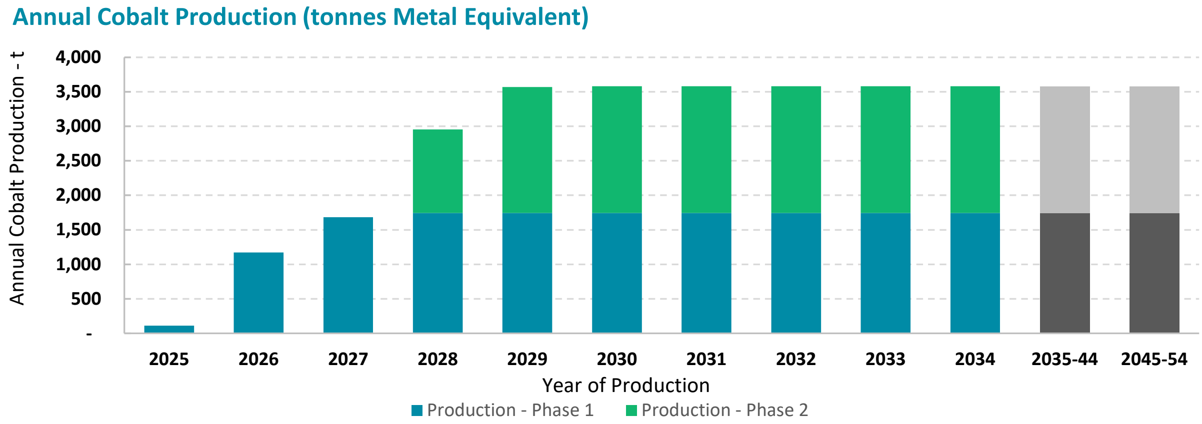


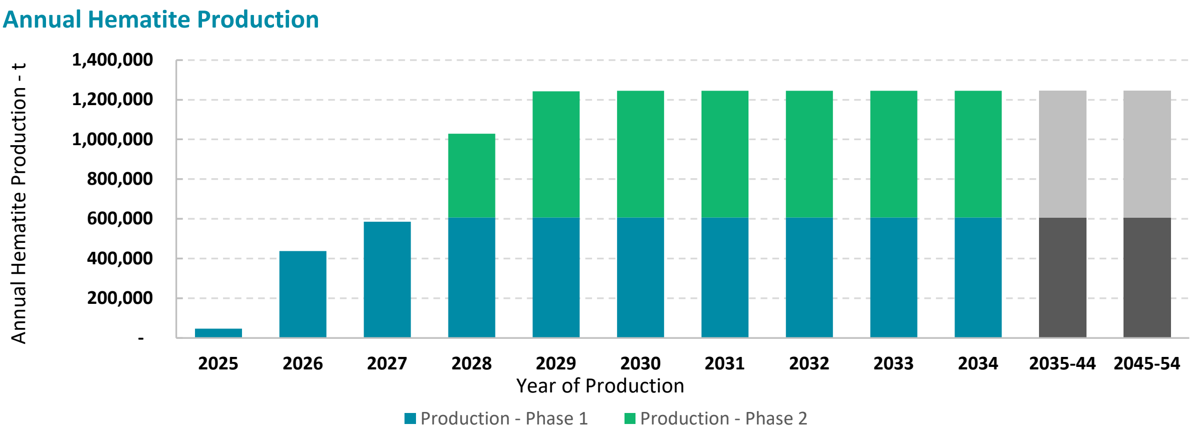


Ramp-up and Production Profile – Stage 1 + 2

Rampup for the Stage 2 expansion is based on a McNulty (2014) Series 1 (well-understood technology) curve for processing plants in the minerals industry. The Scoping Study assumes successful commercialisation of Stage 1 of the TECH Project, resulting in a faster ramp-up of a Stage 2 expansion and a shorter construction time. As previously detailed, HPA production is maintained at 4,000tpa.







Revenue and Price Assumptions

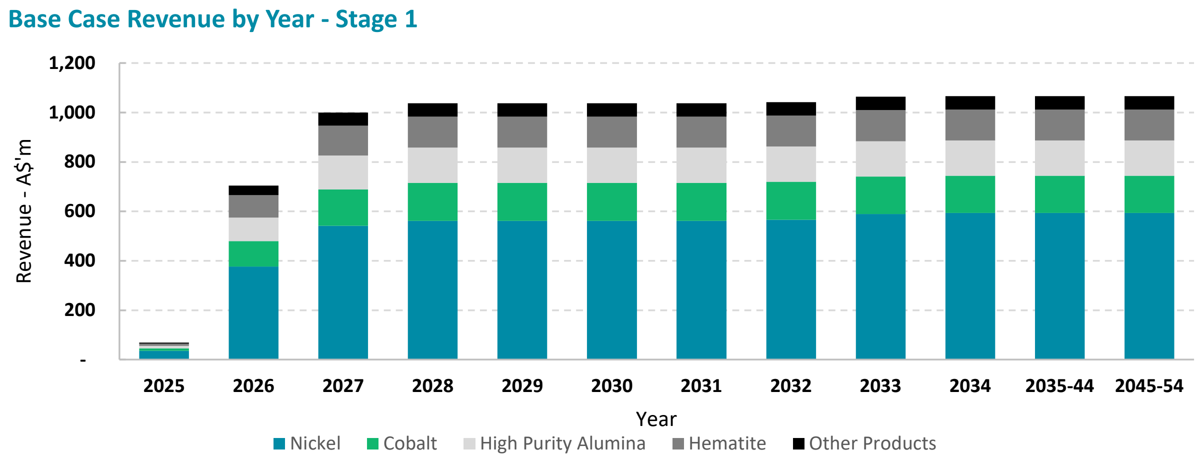
Base and spot case price assumptions and revenues for the various products produced at the TECH Project are detailed in the tables below. Where offtake agreements are in place, the terms and conditions for the sale of those products have been considered in calculating revenue as part of the Feasibility Study.

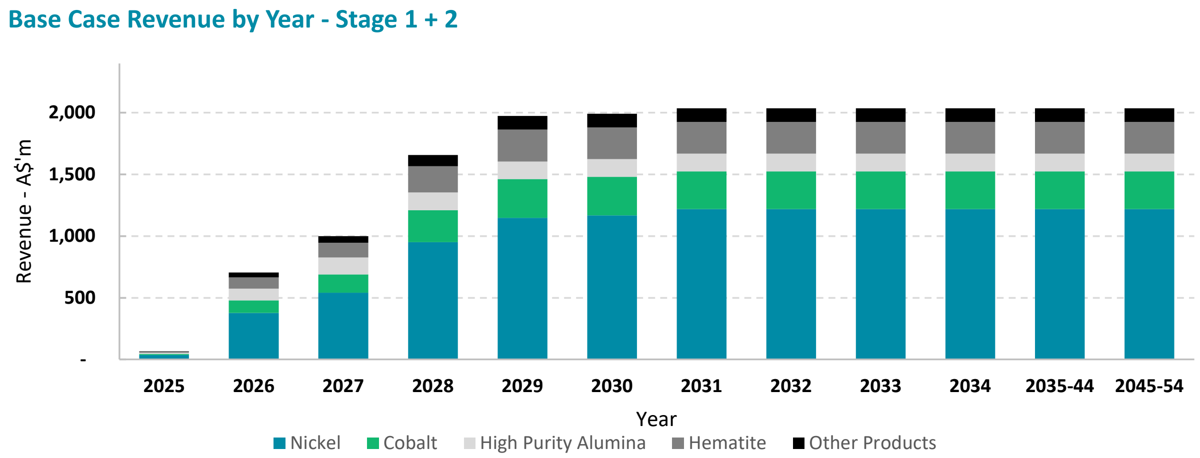
Table 8: Pricing and Macroeconomic Assumptions

	Base Case	Spot Case
	Price Assumption	Price Assumption
Nickel sulfate	US$25,000/t + US$2,204.6/t sulfate	US$26,459/t + US$2,204.6/t sulfate
Cobalt sulfate	US$62,500/t	US$51,507/t
Hematite pellets	US$105/t + US$40/t pellet premium	US$94.90/t + US$40/t pellet premium
4N HPA	US$25,000/t	US$25,000/t
Magnesium oxide	A$850/t	A$850/t
Ammonium Sulfate	A$309/t	A$326/t
Ammonium nitrate	A$398/t	A$419/t
Gypsum	A$50/t	A$50/t
Zinc sulfate	US$120/t	US$120/t
Engineered landfill	A$15/t	A$15/t
AUD:USD	0.700	0.665

Table 9: Revenue breakdown

	Base Case		Spot Case	
	Stage 1 Average Revenue at Nameplate (A$m)	Stage 1 + 2 Average Revenue at Nameplate (A$m)	Stage 1 Average Revenue at Nameplate (A$m)	Stage 1 + 2 Average Revenue at Nameplate (A$m)
Nickel sulfate	588.1	1,215.3	650.5	1,343.4
Cobalt sulfate	150.4	307.2	131.4	268.5
Hematite pellets	125.8	257.9	123.2	252.6
4N HPA	142.9	142.9	150.4	150.4
Magnesium oxide	24.5	50.3	24.5	50.3
Ammonium Sulfate	14.2	29.1	15.0	30.7
Ammonium nitrate	5.0	10.2	5.3	10.8
Gypsum	4.3	8.7	4.3	8.7
Zinc sulfate	1.0	2.1	1.1	2.2
Engineered landfill	5.3	10.9	5.3	10.9
Total	**1,062**	**2,035**	**1,111**	**2,129**





Operating Expenditure

Summary of Operating Costs

A breakdown of operating costs for the TECH Project is provided in the table below. Stage 1 opex is at an accuracy of ±10%. Stage 2 expansion opex is at an accuracy of ±25%.

Table 10: Operating cost breakdown

		Base Case		Spot Case	
		Stage 1 Opex at Nameplate	Stage 1 + 2 Opex at Nameplate	Stage 1 Opex at Nameplate	Stage 1 + 2 Opex at Nameplate
Ore supply and transport	A$m	176.5	353.9	191.2	384.0
Extraction plant including DNi Process™	A$m	134.8	266.0	135.3	266.9
Sulfate refinery	A$m	47.6	92.6	48.5	94.4
Hematite pellet plant	A$m	39.2	75.3	39.2	75.3
HPA plant	A$m	15.3	15.3	15.3	15.3
Site wide costs, including power, water and utilities	A$m	31.7	53.0	31.4	52.4
Marketing, transport, admin and royalties	A$m	70.2	136.4	73.5	142.2
Total	**A$m**	**515.4**	**992.5**	**534.4**	**1,030.5**
Non-nickel metal revenue (including sulfate premium)	A$m	523.8	922.6	513.4	893.7
Nickel costs after co-product credits	**A$m**	**(8.4) (benefit)**	**69.9**	**21.0**	**136.8**
Unit nickel costs	**A$/lb**	**(0.24) (benefit)**	**0.97**	**0.60**	**1.89**

The increase in unit nickel cost after co-product credits between Stage 1 and the Stage 2 expansion is a result of not increasing HPA production as part of Stage 2. For actual expenditure, there is a significant unit operating cost savings.

The operating costs after co-produict credits displayed above would make the TECH Project a lowest quartile operating cost project on the nickel cost curve.

Ore Supply and Transport

This area of operating expenditure covers:

- The purchase price of ore from SLN and SMT;
- Ocean freight to transport ore from New Caledonia to Port of Townsville;
- Stevedoring operations, which include ship unloading and transport of ore to an intermediate stockpile shed located at Port of Townsville;
- Operation of the intermediate stockpile shed;
- Port charges and costs; and

- Trucking the ore from the Port of Townsville to the TECH Project location at Lansdown.

Extraction plant including DNi Process™

This area of operating expenditure covers:

- Consumables, the highest cost being for gas and ammonia;
- Associated labour; and
- Plant maintenance.

Sulfate Refinery

This area of operating expenditure covers:

- Consumables, the highest cost being for sulfuric acid and ammonia;
- Associated labour; and
- Plant maintenance.

Hematite Pellet Plant

This area of operating expenditure covers:

- Consumables, the highest cost being for gas and binders/additives;
- Associated labour;
- Plant maintenance; and
- Capital recharge and margin costs associated with a Build, Own, Operate ("**BOO**") structure for the pellet plant.

The Feasibility Study assumes that QPM will produce a high-purity hematite pellet as opposed to a simple agglomerated fines product. QPM has been in discussions with parties who have expressed interest in a commercial arrangement regarding BOO structures for a pellet plant to secure offtake. These parties include steel mills and trading houses.

The hematite pellets to be produced by the TECH Project have several advantages, including:

- High iron % grade and low impurities for silica and phosphorus, which for traditional DSO iron ore, attract penalties and threshold limits; and
- The green credentials associated with QPM's hematite pellets are attractive for the carbon steel industry.

HPA Refinery

This area of operating expenditure covers:

- Consumables, the highest cost being for purchased aluminium hydroxide and gas;
- Associated labour; and
- Plant maintenance.

In previous HPA studies undertaken by QPM on the production of HPA, it was assumed that aluminium hydroxide precipitated from the DNi Process™ would be utilised as feedstock for the HPA refinery. However, the basis of the Feasibility Study is that purchased aluminium hydroxide is used as the feedstock. The rationale is that it is a readily available and a more pure intermediate product, reducing the number of purification steps required. However, using internally produced, less-pure aluminium hydroxide remains an option. Refer to the HPA processing section later in this announcement for further information.

Site-Wide Utilities

This area of operating expenditure covers:

- Power and steam generation, including gas input, gas turbines/heat recovery steam generation maintenance costs and capital recharge and margin costs associated with a Build, Own, Operate ("**BOO**") structure
- Water costs;
- Other miscellaneous site consumables and maintenance; and
- Carbon credit offsets (see discussion later in this section as part of the gas supply chain).

Marketing, Transport, Administration and Royalties

This area of operating expenditure covers:

- Royalties associated with the DNi Process™ under the licensing arrangement with Altilium Group and the production of HPA under the licensing agreement with Lava Blue
- Product transport costs, including trucking and shipping; and
- General site administration costs.

Gas Supply Chain

Total gas requirements for Stage 1 of the TECH Project are approximately 13.5 PJ per annum at nameplate production. QPM plans to source waste gas from Northern Bowen Basis coking coal mines. The gas in this basin is effectively a stranded energy resource, with no pipeline infrastructure connecting it to domestic retail markets or the overseas market.

At the time of this announcement, QPM has been in discussions with:

- Coal miners regarding commercial arrangements to harvest waste gas for use, which will, in turn, significantly reduce their carbon footprint;
- Palisade, the owner of the North Queensland Gas Pipeline, regarding a commercial arrangement to transport gas to the TECH Project; and
- Townsville Power Station, regarding the potential to utilise excess gas from QPM's gas supply chain, which will be important in the ramp-up phase and any planned/unplanned shutdowns where gas consumption fluctuates.

Based on these discussions and assessments of costs for various gas supply sources, the Feasibility Study assumes gas supply costs of A$8/GJ delivered to the TECH Project.

Furthermore, as part of an ISO-compliant life cycle assessment undertaken by Minviro, the TECH Project will be significantly negative carbon (i.e. negative global warming impact). As part of the Feasibility Study, QPM has assessed several opportunities where these carbon credits could be monetised:

- Australian Carbon Credit Units relating to waste gas utilised from operating underground metallurigcal coal mines;
- International Emissions Trading Schemes (eg Quebec, California); and
- Voluntary Carbon Markets (eg Xpansiv, AirCarbon Exchange, CORE Markets).

Based on its preliminary work, QPM believes there is an opportunity to monetise its carbon credits. However, significant work must be undertaken to identify and select the most appropriate methodologies, certification bodies and trading exchanges. It must also be noted that the carbon credit market and associated regulation is ever evolving and QPM's first production is a number of years away. Changes in carbon credit markets around the world may improve QPM's ability to monetise the credits or may even make it harder or less lucrative.

To reflect the uncertainty, QPM has used lower unit pricing of carbon credits in the Feasibility Study. The total carbon credit offset under nameplate capacity is $20m per annum.

Financial Analysis and Valuation

Financial Analysis

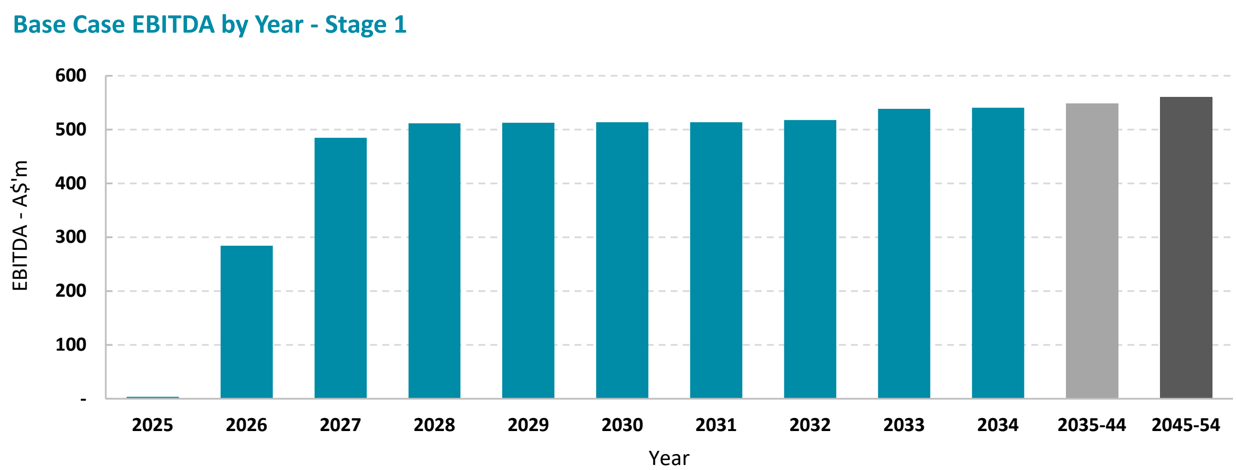
As part of the financial analysis, QPM has prepared a Base Case and a Spot Case where:

- Base Case assumptions are based on management's forecasts of key macroeconomic inputs; and
- Spot Case assumptions are based on a 10 day average of spot prices for key macroeconomic inputs.

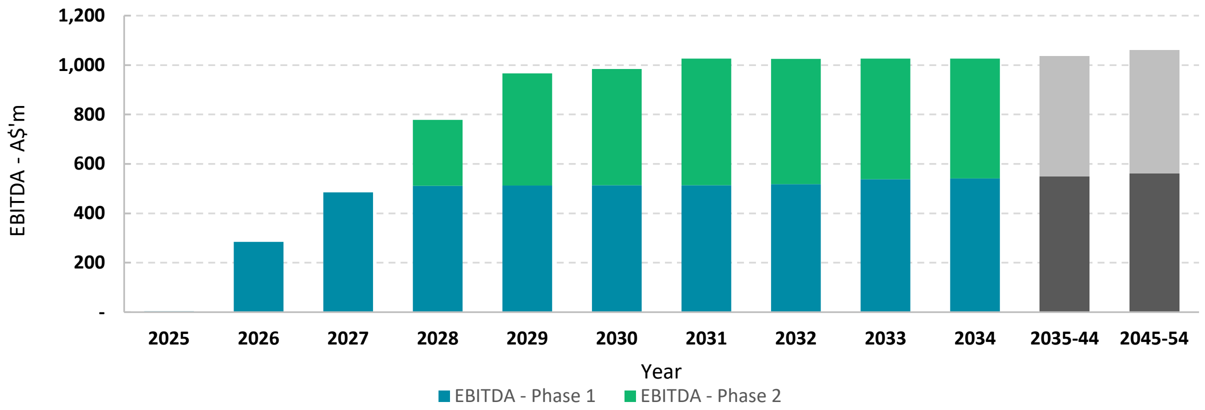
The TECH project delivers attractive financials and significant cashflow generation under the assumptions used in the Feasibility Study. Key financial outputs of the Feasibility Study and the Scoping Study are detailed in the table below.

Table 11: Financial analysis

Area	Base Case		Spot Case	
	Stage 1	Stage 1 and 2 Combined	Stage 1	Stage 1 and 2 Combined
Financials				
Average nameplate revenue	$1,061m	$2,035m	$1,111m	$2,129m
Average nameplate opex	$515m	$993m	$534m	$1,031m
Average nameplate EBITDA	$546m	$1,042m	$577m	$1,098m
Valuation				
Pre-tax NPV_8	$2,665m	$4,919m	$2,944m	$5,393m
Post-tax NPV_8	$1,613m	$3,035m	$1,808m	$3,366
Pre-tax IRR	18.4%	19.7%	19.3%	20.7%
Post-tax IRR	15.0%	16.1%	15.8%	16.8%
Key assumptions				
Nickel price	US$25,000/t	US$25,000/t	US$26,459/t	US$26,459/t
Cobalt price	US$62,500/t	US$62,500/t	US$51,507/t	US$51,507/t
Hematite price	US$105/t	US$105/t	US$94.90/t	US$94.90/t
HPA price	US$25,000/t	US$25,000/t	US$25,000/t	US$25,000/t
AUD:USD	0.7000	0.7000	0.665	0.665



Base Case EBITDA by Year - Stage 1 + 2



Sensitivity Analysis

The two macroeconomic assumptions that the TECH Project is most sensitive to are the nickel price and AUD:USD exchange rate. A sensitivity analysis from the Base Case is provided below using different inputs for these assumptions.

Table 12: Nickel price sensitivity outputs (Base Case scenario)

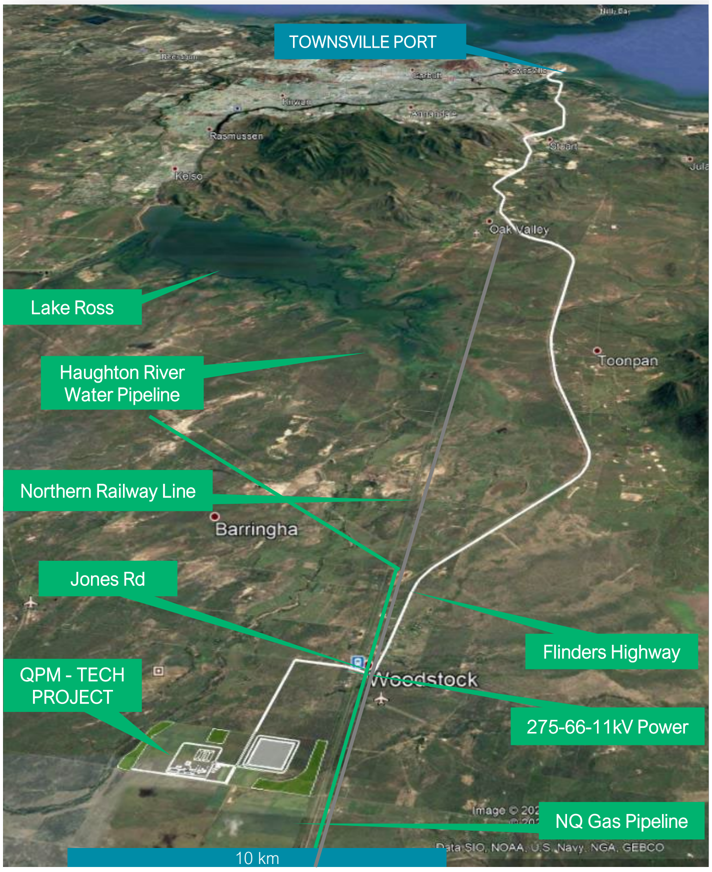
Nickel Price	US$22,000/t	US$24,000/t	US$26,000/t	US$28,000/t	US$30,000/t
Stage 1					
EBITDA	506	532	560	588	615
Pre-tax NPV_8	2,290	2,531	2,796	3,057	3,315
Post-tax NPV_8	1,350	1,519	1,705	1,887	2,068
Pre-tax IRR	17.1%	17.9%	18.9%	19.8%	20.6%
Post-tax IRR	14.0%	14.6%	15.4%	16.1%	16.8%
Stage 1 + 2					
EBITDA	961	1,012	1,071	1,129	1,186
Pre-tax NPV_8	4,223	4,664	5,168	5,663	6,157
Post-tax NPV_8	2,548	2,856	3,209	3,555	3,901
Pre-tax IRR	18.3%	19.2%	20.3%	21.3%	22.3%
Post-tax IRR	14.9%	15.7%	16.5%	17.3%	18.1%

Table 13: Exchange rate sensitivity outputs (Base Case scenario)

AUD:USD	0.60	0.65	0.70	0.75	0.80
Stage 1					
EBITDA	683	609	546	492	444
Pre-tax NPV_8	3,920	3,244	2,665	2,164	1,724
Post-tax NPV_8	2,491	2,019	1,613	1,262	955
Pre-tax IRR	22.5%	20.3%	18.4%	16.7%	15.1%
Post-tax IRR	18.3%	16.5%	15.0%	13.6%	12.4%
Stage 1 + 2					
EBITDA	1,299	1,161	1,042	939	849
Pre-tax NPV_8	7,105	5,928	4,919	4,045	3,280
Post-tax NPV_8	4,564	3,741	3,035	2,423	1,888
Pre-tax IRR	24.1%	21.8%	19.7%	17.9%	16.2%
Post-tax IRR	19.5%	17.7%	16.1%	14.6%	13.3%

TECH Project Operational Description

Project Location and Infrastructure



The TECH Project will be located near Townsville, a major regional city in Queensland, Australia. Townsville boasts a major port, extensive industry and supporting infrastructure, engineering services and skilled labour, making it an ideal location for the TECH Project. The TECH Project site is located in Lansdown, approximately 45km (by road) south of the main city in the Lansdown Eco-Industrial Precinct. Lansdown is well supported by nearby critical infrastructure, including road, rail, gas pipeline, water pipeline and the ability to connect to the power grid.

Townsville City Council ("**TCC**") will develop road and water infrastructure for the Lansdown precinct. Both Federal and State government funding has been allocated to assist with funding this infrastructure. QPM has been working closely with TCC to ensure that infrastructure development matches the TECH Project's needs in construction and operation.

Ore Supply and Transport

A typical nickel laterite ore profile is shown in the figure below, with the DNi Process™ range outlined on the right:

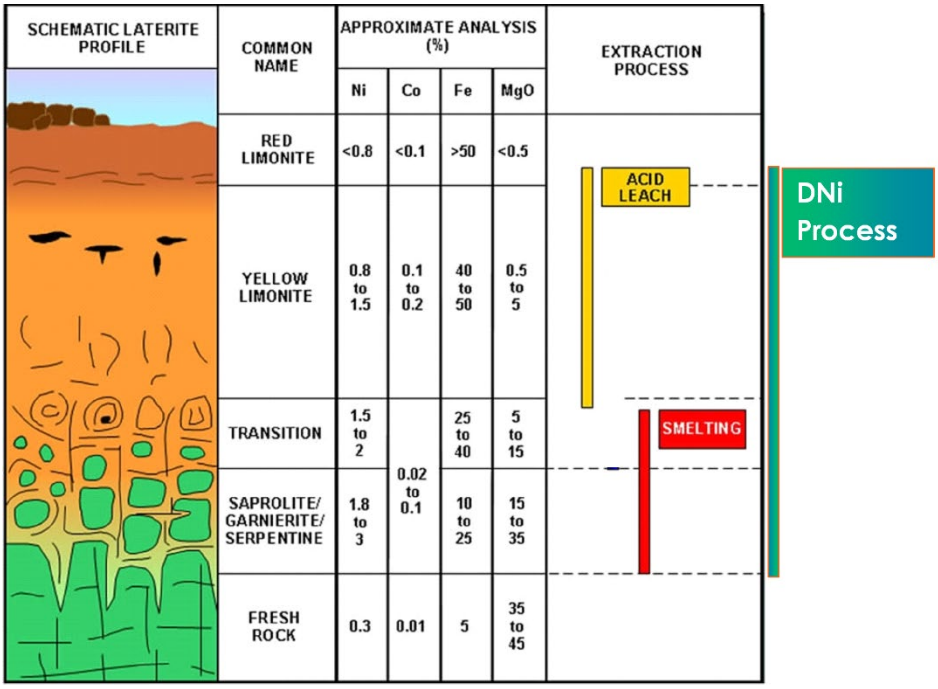


Figure 2: Typical nickel laterite ore profile

Typically, nickel laterite ores consist of an upper layer known as limonite and a bottom layer known as saprolite. Limonite is characterised with a slightly lower nickel grade, higher cobalt grade and is iron-rich. Saprolite is characterised with a higher nickel grade, lower cobalt grade and is magnesium-rich. Nickel-equivalent grades of the limonite and saprolite are approximately the same.

Limonite is typically processed using High Pressure Acid Leach ("**HPAL**"), a capital-intensive process with a significant environmental footprint requiring large tailings dams and effluent treatment. Most HPAL plants around the world are built next to ore bodies and do not purchase any external ore. As such, the global import/export market for limonite is negligible.

Saprolite is processed using pyrometallurgical processes to produce nickel pig iron or ferronickel. These processes are energy intensive, have a very high carbon intensity and a lower percent recovery of nickel. Furthermore, the contained cobalt generates zero value. Many of these plants are built near cheap power sources (China, Indonesia, etc), utilise coal-fired electricity generation and are often more likely to rely on imported ore. The global import/export market for nickel ore is almost exclusively saprolite.

Many nickel laterite mines around the world do not have a buyer for the limonitic portion of their orebody. However, to access the saprolite ore, the limonite ore must first be removed and stockpiled as waste or alternatively, in limonite-rich areas of a mine, the ore is not mined at all.

As such, even tho the DNi Process™ can process the full or eprofile, QPM's ore procurement strategy is to target the purchase of limonite ore only. QPM has secured ore supply contracts with SLN and SMT for the first 10 years (subject to option exercise) of operation of the TECH Project.

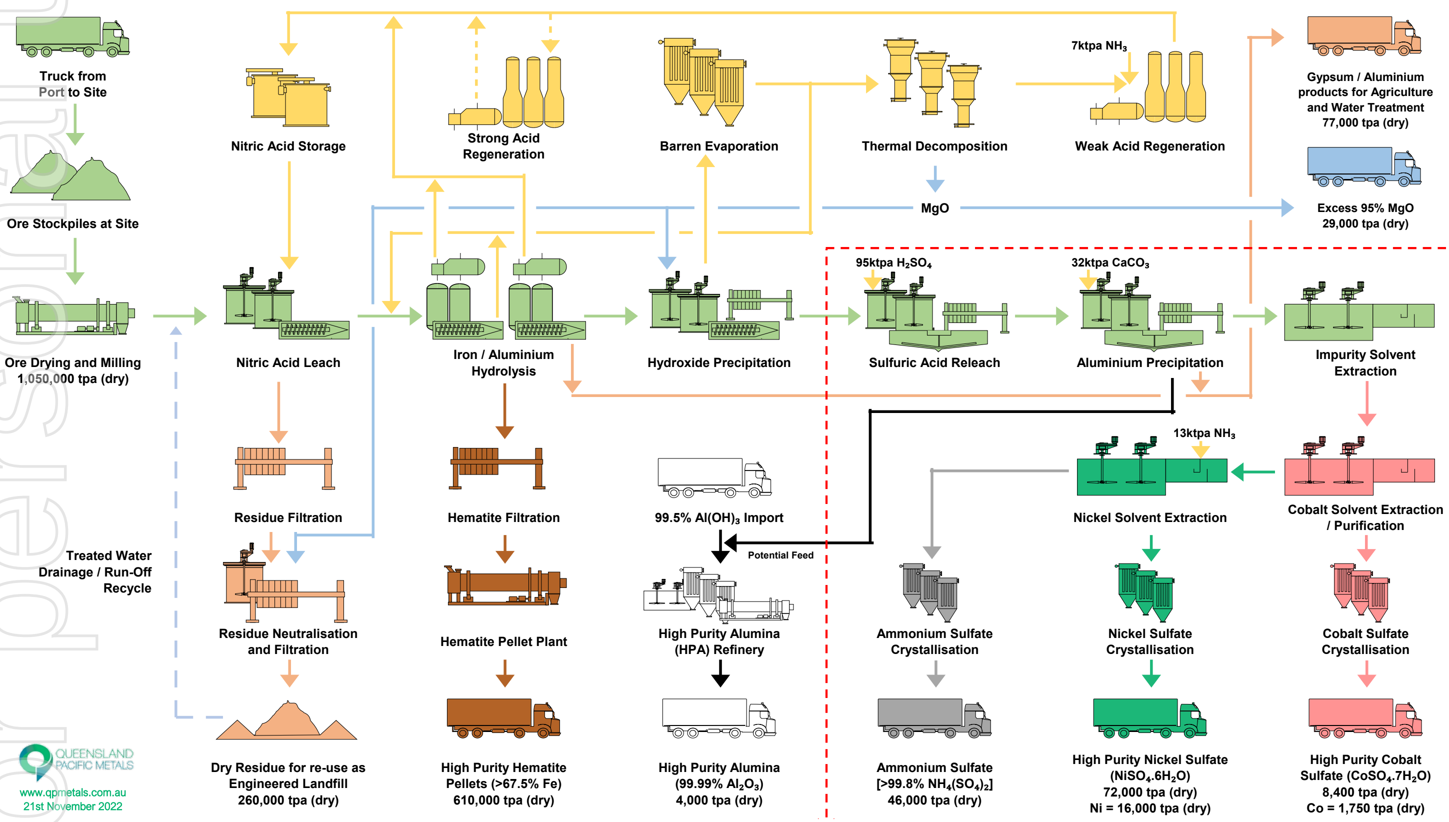
Under its contractual agreements with SLN and SMT, QPM's ore purchases will be on a FOB basis. As such QPM will charter geared vessels (Supramax / Ultramax class) to transport ore from New Caledonia to the Port of Townsville (the "**Port**"). Due to draft restrictions at Port of Townsville, ships charted by QPM will not be able to be loaded to full capacity, resulting in about 5% of deadweight. For QPM's Stage 1 ore requirements at nameplate capacity, the number of vessels required per month is approximately 2.5.

Once at Townsville, ships will dock at one of the publicly available berths and discharge using a combination of shore cranes and ship cranes. Ore will be discharged into hoppers and straight into trucks which will transport the ore a short distance to an intermediate storage shed located within the Port. The intermediate storage shed has been designed to have a stockpile capacity of 70,000wmt. The unloading time of a ship is expected to be approximately 4 days.

From the storage shed, ore will be transported via triple or quad haul trucks approximately 45km to the TECH Project site at Lansdown. Trucking will be a 24/7 operation, except during the local Lansdown school drop-off and pick-up times where trucking will stop for an hour. When necessary, the haul trucks will transport hematite pellets back to the Port for export.

QPM expects ship unloading, management of the warehouse and trucking to be undertaken by a single contractor. QPM is currently in discussions with a number of stevedoring companies who operate at the Port.

Processing Flowsheet



Ore Preparation

Prior to leach, ore must be dried to 1.0% moisture and oversized material milled to a D100 of 300 microns. Based on particle size distribution work undertaken on New Caledonian ore samples, approximately 10-15% of ore will require milling.

Extraction Plant including DNi Process™

The major areas of the DNi plant are detailed below:

- **Nitric Acid Leach:** Ore is leached using recycled nitric acid with minor additional makeup (<1.0% of overall consumption), providing high metal recoveries at atmospheric pressure and temperature (i.e. no pressure leaching required) and low specific acid consumption. This step also includes residue filtration and neutralisation with recycled MgO, with temporary dry residue storage on-site, including capture and recycle of all drainage and run-off, before being sold as engineered landfill. EKATO, global leaders in mixing and titanium tank manufacturing, have designed the complete Titanium Gr 2 reactor cascade system for nitric acid leaching;

- **Iron / Aluminium Hydrolysis:** Iron Hydrolysis is undertaken at elevated pressure of 6 bar and temperature of 195°C in which the leached iron is precipitated as high-grade >68% Fe hematite. This is then filtered, agglomerated and pelletised. A second stage of aluminium hydrolysis at atmospheric pressure and temperature of 180°C precipitates a mixed aluminium / iron oxide-hydroxide product. Design of the Iron and Aluminium Hydrolysis plant is by KBR PLINKE with the CSIRO Carbon Steel Materials Group focusing on optimal hematite agglomeration / pelletisation characteristics using industry-standard equipment, for sale to steel manufacturers. Through the pelletisation process, the target grade of pellets to be produced is approximately 65-66% Fe.

- **Strong Acid Regeneration:** This step produces Strong Nitric Acid for recycle to Leach circuit. Design of this system is by KBR PLINKE, who are global experts in the concentration, purification and recovery of nitric acid.

- **Hydroxide Precipitation:** This step precipitates nickel and cobalt at atmospheric pressure using recycled MgO, with slurry filtration to form a dry cake for feed into the Sulfate Refinery. This is a modified process to the one used in existing sulfate-based High Pressure Acid Leach (HPAL) systems for Mixed Hydroxide Precipitate (MHP) production.

- **Barren Evaporation:** Once the nickel and cobalt is precipitated, magnesium nitrate remains. This step produces a recycle stream of high concentration and temperature magnesium nitrate from Hydroxide Precipitation that efficiently provides low capital heating for iron hydrolysis to occur, with a portion of this stream being bled for removal from the circuit via Thermal Decomposition (using a Fluidised Bed Reactor). Design and supply of the Barren Evaporation unit is by KBR PLINKE.

- **Thermal Decomposition:** A Fluidised Bed Reactor ("**FBR**") is used to heat the barren magnesium nitrate solution from Primary Precipitation to 750°C, causing it to decompose into solid MgO and Nitrogen Dioxide / Nitric Acid vapour. This industry-standard technology is used in the industrial production of magnesium oxide from magnesium brines. The MgO is recovered and used within the plant, with the excess sold as high grade MgO. Design of the FBR is by the experienced Hatch Pyrometallurgy Group.

- **Weak Acid Regeneration**: This step captures the vapour from the FBR and produces Weak Nitric Acid for recycle to Leach circuit. Design of this system is by KBR Weatherly, a leading worldwide supplier of nitric acid production technology. They have built more than 70 of these plants around the world.

Sulfate Refinery

The Sulfate Refinery utilises an industry standard treatment process to produce battery grade nickel and cobalt sulfate. Global specialists JordProxa are designing and supplying the three crystallisers. SENET are designing and supplying all three SX circuits. This Sulfate Refinery includes:

- **Sulfuric Acid Releach and Aluminium Removal using Limestone:** This step produces a clean high grade Ni/Co/Zn/Mn/Mg liquor stream to feed Impurity Solvent Extraction, as well as a Gypsum product for agricultural use.
- **Impurity Solvent Extraction:** This step uses D2EHPA, sulfuric acid and ammonia to selectively remove Mn and Zn impurities from the process.
- **Cobalt Solvent Extraction / Purification:** Uses Cyanex 272, sulfuric acid and ammonia to selectively remove Mg and Co, producing a high purity stream of Cobalt for crystallisation and sale as battery-grade $CoSO_4.7H_2O$.
- **Nickel Solvent Extraction:** Uses Versatic 10, sulfuric acid and ammonia to selectively remove Ni, producing a high purity stream of nickel sulfate for crystallisation and sale as battery-grade $NiSO_4.6H_2O$.
- **Ammonium Sulfate Crystallisation:** This step recovers the ammonia used in the Sulfate Refinery as fertiliser-grade $NH_4(SO_4)_2$ (amsul) as well as smaller volumes of a liquid mixture of Ammonium Nitrate / Ammonium Sulfate, both products will be sold for agricultural use.

Hematite Pellet Plant

Dried, filtered hematite from Iron Hydrolysis is mixed with various binders/additives (bentonite, coke breeze, quicklime, etc.) before being pelletised and fed into an induration furnace at 1250°C following which it is cooled and discharged ready for sale.

HPA Refinery

The HPA Refinery utilises industry standard hydrochloric acid leach and purification steps to produce 4N High Purity Alumina. QPM has a technology license arrangement with Lava Blue who provide additional "know-how" in this area. KBR are providing leaching and acid recovery design and equipment. Hatch are providing thermal processing design and equipment

Testwork was undertaken in conjunction with Lava Blue on aluminum hydroxide produced as part of the DNi Process™ and also on purchased aluminum hydroxide, which has higher purity and can be readily purchased at low cost. Although both were suitable feedstocks, the testwork determined that when using purchased aluminium hydroxide, less purification steps would be required in the HPA refinery, resulting in lower capital and operating costs – especially given the synergies of being part of the overall TECH flowsheet. As a result, the Feasibility Study has adopted purchased aluminium hydroxide as the base case scenario.

Site Utilities

Power and Steam Generation

The annual operational power requirement for Stage 1 of the TECH project at nameplate production is nominally 42MW. 4 x 15MW gas turbines with duct burners and Heat Recovery Steam Generation (HRSG) will be installed in an n+1 configuration. This will produce all the power and steam required by the TECH Project. Steam is largely used in the iron hydrolysis section of the Extraction Plant for heating.

This part of the Feasibility Study was undertaken by Genco, who have extensive expertise in this area.

Water

The annual raw water requirement for Stage 1 of the TECH project is ~3.2 gigalitres. TCC will supply water to QPM for the TECH Project on a high priority basis, effectively guaranteeing supply. Water is sourced from the Burdekin catchment and transported down the Houghton pipeline. TCC will extend a connection of the pipeline to the Lansdown precinct.

Annexure B – Summary of Modifying Factors

Aspect	Discussion
Study Scope and Status	QPM proposes to build a metals processing plant in the Lansdown Eco-Industrial Precinct in Townsville, North Queensland. The project will import nickel laterite ore from New Caledonia and process this ore to produce key battery chemicals nickel sulfate and cobalt sulfate and other co-products. This announcement concerns two studies. A Feasibility Study relating to Stage 1 of the TECH Project and a Scoping Study relating to a Stage 2 expansion. For the Feasibility Study of Stage 1: • Capex has been estimated to an accuracy of –15 to 24%; and • Opex has been estimated to an accuracy of ±10%. For the Scoping Study of Stage 2 expansion: • Capex has been estimated to an accuracy of ±35%. • Opex has been estimated to an accuracy of ±25%. The Feasibility Study and the Scoping Study summarises the work completed to date by QPM and its consultants. It presents a technical and economic evaluation of the potential viability of the TECH Project.

Risk Management	Risk Management processes have been established for the Project. Key risks identified include:
	• Ability to secure further ore supply at the same grade (or better) for the life of the TECH Project beyond the existing ore supply agreements with SLN and SMT;
	• Ability to secure gas supply to meet the needs of the TECH Project in terms of quantity, price and timing;
	• Ability to procure equipment, steel and concrete in line with capital estimate presented in the Studies;
	• Ability to procure labour required for the construction of the TECH Project in line with capital estimate presented in the Studies;
	• Performance of commercial scale equipment in line with testwork, piloting and design modelling;
	• Delivery of required supporting infrastructure by Townsville City Council for the Lansdown precinct and TECH Project in a timely manner;
	• Ability for QPM to enter into commercial agreements required for the TECH Project including, but not limited to:
	    ○ Gas supply;
	    ○ Gas transport;
	    ○ Logistics;
	    ○ Capital purchases; and
	    ○ BOO agreements for certain capital equipment.
	• Securing approvals for Stage 1 and Stage 2 of the TECH Project;
	
	An Enterprise Wide Risk Management Plan has been developed, including risk register, to manage and mitigate risks.

Ore Supply	The Feasibility Study and Scoping Study assumes that ore will be sourced from New Caledonian suppliers. QPM has ore supply agreements with SLN and SMT and assumes that beyond the duration and quantity of these agreements, additional ore can be sourced under the same terms including all necessary regulatory approvals. The terms of the ore supply agreements are detailed below:

Aspect	Discussion
	<table><tr><th>Area</th><th>Terms</th></tr><tr><td>**Specification**</td><td>Limonite ore 1.4 – 1.7% Ni (typical 1.60%) 0.1 – 0.25% Co (typical 0.18%) 30.0 – 47.5% Fe (typical 42%) 1.5 – 8.0% MgO (typical 2%) 2.0 – 9.0% Al_2O_3 (typical 3%) 28.0 – 40.0% moisture (typical 33%)</td></tr><tr><td>**Pricing**</td><td>Commercial in confidence, linked to underlying price of Ni (LME exchange) and Co (Metal Bulletin) on an FOB basis</td></tr><tr><td>**Source**</td><td>Multiple mining operations</td></tr><tr><td>**Termination**</td><td>Typical termination clauses including Force Majeure, material breach and insolvency.</td></tr><tr><td>**Conditions**</td><td>QPM making a final investment decision to build the TECH Project.</td></tr></table> There are other ore miners in New Caledonia who may also be able to supply QPM. QPM has an in-country manager who actively engages with New Caledonian government and all the ore suppliers. New Caledonia is rich with nickel laterite mineral deposits and QPM is confident that subject to commercial agreement, there is more than enough ore to meet the needs of the TECH Project. For the avoidance of doubt, the ore is not associated with any mineral project owned by QPM.
Metallurgical	A summary of testwork undertaken by QPM which has supported the Feasibility Study and Scoping Study is detailed below: **Ore Characterisation and Leaching** QPM has completed various analyses to determine variability of ore types in relevant New Caledonian mines. Previous piloting has been conducted in 2013 and Dec 2020-Feb 2021. Additional bench scale leaching to optimise conditions has been completed. Residue characterisation, washing and filtration testing completed and a test program ongoing with James Cook University to investigate using the residue as a stable, engineered fill (utilising the government's End of Waste Code criteria). **DNi Pilot Plant operation:** Historically, a 1 tonne (dry) per day (ore feed) large scale pilot plant was built to replicate the DNi Process™ at the CSIRO Minerals research centre in West Australia. The Pilot Plant successfully processed a number of ore sources and ore

Aspect	Discussion
	blends for continuous campaigns over a twelve-month period In December 2020 – February 2021, QPM conducted further piloting of the DNi Process™ at ALS Hydrometallurgical Centre of Excellence. A pilot plant was constructed at a scale of 0.5 tonne (dry) per day. Ore from New Caledonia was processed through the QPM pilot plant and was successful in producing nickel-cobalt mixed hydroxide precipitate and other materials. The pilot work also provided important baseline data and bulk samples for the Studies. **Iron Hydrolysis** Bench scale pressure iron hydrolysis tests completed to optimise the process design and conditions to make a clean iron oxide which is suitable for steel making purposes. Solid-liquid separation, filtration and washing completed at the bench and pilot scale (in conjunction with Andritz and GBL) CSIRO Carbon Steel Materials Group engaged to quantify the use of QPM hematite in steel making. **Aluminium Hydrolysis** Bench scale testing completed to optimise process design. Solid-liquid separation, filtration and washing completed at the bench scale. **Hydroxide Precipitation** Bench scale testing, solid-liquid separation, filtration and washing tests have been undertaken. **Thermal Decomposition** The original DNi Process™ considered the use of indirectly heated, rotary screw processors, in particular many dozens of Thermaflite units, to undertake the thermal decomposition section of the flowsheet. The company who made the Thermaflite units no longer exists and QPM did not consider the solution economic given the very large number of units required. As part of QPM's feasibility work, it assessed the use of Fluid Bed Reactors. To provide confidence that this was a suitable solution, QPM constructed a pilot scale FBR and operated it, demonstrating its suitability. **HPA Refinery** QPM has undertaken testwork in conjunction with Lava Blue. This testwork has been successful in producing 4N purity HPA. Lava Blue is in the process of constructing a demonstration plant in Brisbane, which QPM will utilise to provide further data and offtake marketing samples.
Human Resources	Organisation structure and manning levels were determined from first principles and included in the Feasibility Study. This detailed analysis was utilised to determine manning levels required for the Stage 2 expansion Scoping Study.
Project Execution Work	QPM's Feasibility Study and Stage 2 Scoping Study work was completed and compiled with lead engineers Hatch. Contributors to the Studies include: • QPM owner's team who lead process design; • KBR PLINKE – iron hydrolysis and strong acid recovery; • KBR Weatherly – weak acid recovery; • JordProxa – sulfate refinery crystallisers;

Aspect	Discussion
	• EKATO – leach circuit; • SENET – solvent extraction circuits; • Hatch Technology – Fluidised Bed Reactors; • Genco – power and steam generation; • Stantec and Lava Blue – HPA refinery; • BG&E – front end and materials handling; • EMM Consulting – environmental; • Simon Donegan – Sulfate refinery design; and • Mark Benz (MRB International Consulting) and Ian Skepper (Hatch) – peer review and process design support.
Operations Management	Management and Staff to be recruited from a readily available pool within Queensland and Townsville, with corporate management regionally focussed.
Information Management	"Off the shelf" IT and management systems to be used. Estimates contained within the capital cost estimates.
Social, legal and governmental	Major approvals for Stage 1 of the TECH project are: • Federal Government approval from the Department of Climate Change, Energy, the Environment and Water ("**DCCEEW**") to construct and operate the TECH Project in accordance with Part 9 of the Environment Protection and Biodiversity Conservation Act 1999 ("**EPBC Act**"); and • Queensland Government / Townsville City Council approval by way of an Environmental Authority under a Material Change of Use Development Application. At the time of this announcement, DCCEEW has granted written approval for the TECH Project. The approvals under the Environmental Authority are in advanced stages and QPM is confident of receiving approvals in December 2022. These same approvals will be required for a Stage 2 expansion of the TECH Project. QPM has commenced scoping approvals work relating to Stage 2. The Traditional Owners of the Lansdown site which will host the TECH Project, are the Bindal People. QPM has executed a Cultural Heritage Management agreement with the Bindal People, which governs the use of the land and QPM's commitment to seek employment and training opportunities for the Bindal People and other Indigenous Australians.
Costs	The capex estimates of the Feasibility Study has an overall accuracy of –15% to +24%. Contingency allowance is assumed at 10%. Breakdown of capex is provided in the table below:

Area	Capex (A$m)
Direct Costs	
Materials Handling and Front End	91.0
Extraction plant including DNi™ processing	969.7
Nickel/Cobalt Sulfate Refinery	176.3
HPA Refinery	82.4
Utilities and Infrastructure	103.1
Total Direct Costs	**1,422.5**
Indirect Costs	
Project Indirects	238.7

Aspect	Discussion

Detailed engineering ,EPCM and Owners Team	256.9
Total Indirect Costs	**495.6**
Total Capex ex contingency	**1,918.1**
Contingency @ 10%	191.8
Total Capex inc contingency	**2,109.9**

The capex estimate of the Scoping Study is at an overall accuracy of ±35%. The estimate was undertaken by using the Stage 1 capex estimate as a baseline and then making an assessment of synergies relating to the Stage 2 expansion and no expansion of HPA production. Capital reductions were estimated at $350m resulting in a capex estimate of $1.75b (including contingency)

A breakdown of operating costs for the TECH Project is provided in the tables below. Stage 1 opex is at an accuracy of ±10%. Stage 2 expansion opex is at an accuracy of ±35%.

Table: Spot Case Operating cost breakdown

Spot Case		Stage 1 Opex at Nameplate	Stage 1 + 2 Opex at Nameplate
Ore supply and transport	A$m	191.2	384.0
Extraction plant including DNi Process™	A$m	135.3	266.9
Sulfate refinery	A$m	48.5	94.4
Hematite pellet plant	A$m	39.2	75.3
HPA plant	A$m	15.3	15.3
Site wide costs including power, water and utilities	A$m	31.4	52.4
Marketing, transport, admin and royalties	A$m	73.5	142.2
Total	**A$m**	**534.4**	**1,030.5**

Table: Base Case Operating cost breakdown

Spot Case		Stage 1 Opex at Nameplate	Stage 1 + 2 Opex at Nameplate
Ore supply and transport	A$m	176.5	353.9
Extraction plant including DNi Process™	A$m	134.8	266.0
Sulfate refinery	A$m	47.6	92.6
Hematite pellet plant	A$m	39.2	75.3
HPA plant	A$m	15.3	15.3
Site wide costs including power, water and utilities	A$m	31.7	53.0
Marketing, transport, admin and royalties	A$m	70.2	136.4
Total	**A$m**	**515.4**	**992.5**

Aspect	Discussion
Environmental Factors	QPM has undertaken testwork on its residue (produced in the TECH Project pilot plant) in conjunction with James Cook University. This testwork has confirmed that with the addition of a binder, the residue is suitable for commercial use as engineered landfill. At the time of this announcement, QPM has had positive discussions with Queensland State Government regulatory body Department of Environmental Science ("**DES**")

Aspect	Discussion
	regarding the use of the residue as engineered landfill. In order for QPM to achieve this, an "End of Waste Code" approval must be obtained. QPM is in the process of seeking this approval.
Exclusions	Exclusions of this Feasibility Study and Scoping Study include: • Costs associated with establishing gas supply chain; • Working capital; • Lansdown supporting infrastructure costs (assumed provided by TCC); • QPM corporate costs; and • Potential benefits relating to R&D tax incentive and other government support.
Investment Evaluation	The TECH Project was evaluated using simple discounted cash flow methods. Net present value was calculated from estimated real, pre-tax and post-tax, unleveraged free cash flows. The discount rate used was 8.0% A project life of 30 years was assessed, which is the design life of the plant. Cash flows were projected in Australian dollars, being translated from U.S. dollars where applicable. The project evaluation model is unaudited. The following key assumptions and outputs are from the investment evaluation.

Table: Key financial outputs and assumptions (Spot Case)

Spot Case	Stage 1	Stage 1 and 2 Combined
Annual Nameplate Production Metrics		
Ore processed	1.05m dmt	2.15m dmt
Nickel sulfate (contained Ni)	15,992 t	32,784 t
Cobalt sulfate (contained Co)	1,746 t	3,579 t
Hematite	607,395 t	1,245,160 t
HPA	4,000 t	4,000 t
Financials		
Average nameplate revenue	$1,111m	$2,129m
Average nameplate opex	$534m	$1,031m
Average nameplate EBITDA	$577m	$1,098m
Valuation		
Pre-tax NPV_8	$2,944m	$5,393m
Post-tax NPV_8	$1,808m	$3,366m
Pre-tax IRR	19.3%	20.7%
Post-tax IRR	15.8%	16.8%
Capex		
Construction	$2.1b	$1.75b (additional)
Average nameplate sustaining	A$33.0m per annum	$60.9m per annum

Aspect	Discussion

Unit opex		
Nickel unit costs after co-product credits	A$0.60/lb	A$1.89/lb
Key assumptions		
Nickel price (10-day average spot)	US$26,459/t	US$26,459/t
Cobalt price (10-day average spot)	US$51,507/t	US$51,507/t
Hematite price (10-day average spot)	US$94.90/t	US$94.90/t
HPA price	US$25,000/t	US$25,000/t
AUD:USD (10-day average spot)	0.665	0.665

Table: Key financial outputs and assumptions (Base Case)

Base Case	Stage 1	Stage 1 and 2 Combined
Annual Nameplate Production Metrics		
Ore processed	1.05m dmt	2.15m dmt
Nickel sulfate (contained Ni)	15,992 t	32,784 t
Cobalt sulfate (contained Co)	1,746 t	3,579 t
Hematite	607,395 t	1,245,160 t
HPA	4,000 t	4,000 t
Financials		
Average nameplate revenue	$1,061m	$2,035m
Average nameplate opex	$515m	$993m
Average nameplate EBITDA	$546m	$1,042m
Valuation		
Pre-tax NPV_8	$2,665m	$4,919m
Post-tax NPV_8	$1,613m	$3,035m
Pre-tax IRR	18.4%	19.7%
Post-tax IRR	15.0%	16.1%
Capex		
Construction	$2.1b	$1.75b (additional)
Average nameplate sustaining	A$33.0m per annum	$60.9m per annum
Unit opex		
Nickel unit costs after co-product credits	A$(0.24)/lb (benefit)	A$0.97/lb
Key assumptions		
Nickel price (10-day average spot)	US$25,000/t	US$25,000/t
Cobalt price (10-day average spot)	US$62,500/t	US$62,500/t
Hematite price (10-day average	US$105/t	US$105/t

Aspect	Discussion		
	spot)		
	HPA price	US$25,000/t	US$25,000/t
	AUD:USD (10-day average spot)	0.7000	0.7000

Annexure C – JORC Tables

1.1 Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The leach ore bulk sample was sourced directly from the mine face by laterite supplier SMT in New Caledonia. • The bulk sample direct from the mine face was loaded using a small backhoe into individually sampled 1 tonne bulka bags, containerised (with security seal) and shipped directly from New Caledonia to SGS Minerals Metallurgy in Malaga, Western Australia • The 80 off 1 tonne bulka bags making up the bulk sample, monitored by a QPM representative was indicative of the specification required under the terms outlined an ore supply MoU between QPM, SMT and SMGM.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• No exploration drilling was undertaken
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• No exploration drilling was undertaken
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate*	• No exploration drilling or logging was undertaken

Criteria	JORC Code explanation	Commentary
	Mineral Resource estimation, mining studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No exploration drilling or logging was appropriate, required or undertaken. • The bulk sample was supplied to SGS on the 29 May 2020 and was classified as being typical type of ore that would be supplied by SMT to QPM. • It was received from the mine site as a moist, lumpy material ranging from extremely weathered rock to hard clay and silt consistency. • Prior to delivery to SGS, the bulk sample was inspected in accordance with Australian Quarantine requirements. • The bulk sample bulka bags were individually auger-sampled. The sample was dried and assayed to confirm the grade. The bulka bags were individually decanted into large stainless steel trays and dried, screened to -100mm to remove large rocks and milled to 100% passing 1.4mm The dried and milled bulk sample was blended and loaded into 200L sealed drums. The bulk sample quantity was selected to be appropriate for the pilot plant campaign requirements.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• The method used to assay solid and leach liquor samples is included in SGS NATA certifications SS-4AD-MEICP and LA-MEICP. • No geophysical tools were used for assay purposes. • Quality control and assay procedures covered by Core's NATA accreditation.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No exploration drilling or sampling was undertaken
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• No exploration drilling was undertaken
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• No exploration drilling was undertaken.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• No exploration drilling was undertaken.
Sample security	• *The measures taken to ensure sample security.*	• The bulk sample was collected, secured and sent in sealed containers via a registered transport company (QUBE), and delivered directly to the SGS laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Ni Labs in New Caledonia assayed the sub samples taken from each bulka bag, SGS auger sampled each bag at their laboratory in Western Australia and the assays were found to be within industry acceptable range

1.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Not Applicable • Sample was sourced from third party supplier SMT in New Caledonia.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Not Applicable
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Not Applicable.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• No exploration drilling or sampling was undertaken.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No exploration drilling or sampling was undertaken. • Metal equivalents were not used or reported.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• No exploration drilling was completed.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• No exploration drilling was completed.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• No exploration results have been reported sampling was carried out on in situ laterite.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Exploration drilling was not carried out.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• No drilling or exploration work is planned.