



10 December 2018

Frieda River Project Feasibility Study

Highlands Pacific Limited (ASX:HIG) has received a feasibility study for the Frieda River Copper-Gold Project in Papua New Guinea from the project manager PanAust Limited, a wholly-owned subsidiary of Guangdong Rising Assets Management Co Ltd (GRAM).

Highlands holds a 20% interest in the Frieda River joint venture, with PanAust holding 80%. The feasibility study follows a consultative process, field work program and extensive review of PanAust's previous development plan which was outlined in its May 2016 feasibility study, which was subsequently updated in an addendum in March 2017.

The 2018 feasibility study adopts a fundamentally different approach to the project, considering the Frieda River Copper-Gold Project within a broader regional development context and requiring extensive third party or government investment in regional infrastructure as a prerequisite.

The revised approach presents changes to prior studies in a number of ways including:

- It generates revised production metrics and overall project economics based on the same copper price assumption as the previous study but a slightly lower gold price. Under a single ownership structure, the combined project including the Frieda River mine and process plant, together with the hydro-electric facility, but excluding road, transport and regional power transmission infrastructure, has a total pre-production capital cost of US\$6 billion and generates a post-tax Internal Rate of Return of 11% in real terms, with a seven-year implementation schedule.
- It relies on the construction and upgrade of roads linking the mine site to the Port of Vanimo on the northern coast of PNG.
- It requires an upgrade of the Vanimo Port as well as the existing airstrip at Green River to create a new shared-use regional airport.
- The total cost of the road, airfield and port upgrades is estimated at US\$739 million, to be funded by government and/or public-private partnerships.
- It requires a 340km slurry pipeline to be built linking the process plant at the mine site with the Port of Vanimo. The pipeline will cost US\$351 million and will be operated by a third party on commercial terms. The prior project plan had relied on barge transport down the Sepik River to deliver concentrate to a port for loading on ocean going vessels and to deliver supplies up-river to the mine and process plant.
- Like the previous development proposal, the 2018 plan requires the construction of a hydro-electric power station integrated with a tailings and waste rock storage facility (an integrated storage facility [ISF]). However, the latest study has relocated the proposed facility to increase power production to meet processing requirements and enable the sale of excess power. The 2018 study also considers the hydro-electric facility as having a separate ownership structure from the copper/gold project, albeit with the two projects being interdependent.
- The development plan assumes the sale of excess power from the proposed hydro-electric facility to third parties via a transmission network to be constructed at a capital cost of up to US\$418 million inclusive of a rural electrification network along the road corridor.
- The entire project requires increased total capital investment of more than US\$7 billion encompassing the cost of the mine development, process plant, ISF and hydro-electric power plant, road construction and airport upgrades and power transmission network.
- It proposes a much longer mine life of 33 years, compared with 17 years in the prior study.

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Highlands Pacific Managing Director Craig Lennon said the feasibility study represented a further step towards unlocking the value of the giant Frieda River project.

“A great deal of work has gone into the preparation of this visionary and ambitious development concept, aimed at overcoming some of the many logistical challenges associated with construction of a project of this scale in one of the more remote regions of Papua New Guinea.”

“The project, as currently proposed by PanAust, faces significant hurdles, not least of which is the substantial capital cost, but also the need to identify government and other third parties to develop and fund the roads and other regional infrastructure required as a pre-requisite to construction of the project.”

“The Frieda River project has the potential to generate major economic benefits for Papua New Guinea, for the communities in the region, the participants in the project and the shareholders of Highlands Pacific, and we will be seeking to work with PanAust and the other stakeholders to further refine the project and improve returns where possible,” he said.

Project Overview

PanAust has defined the full Project, entitled the “Sepik Development Project”, as comprised of the following four components:

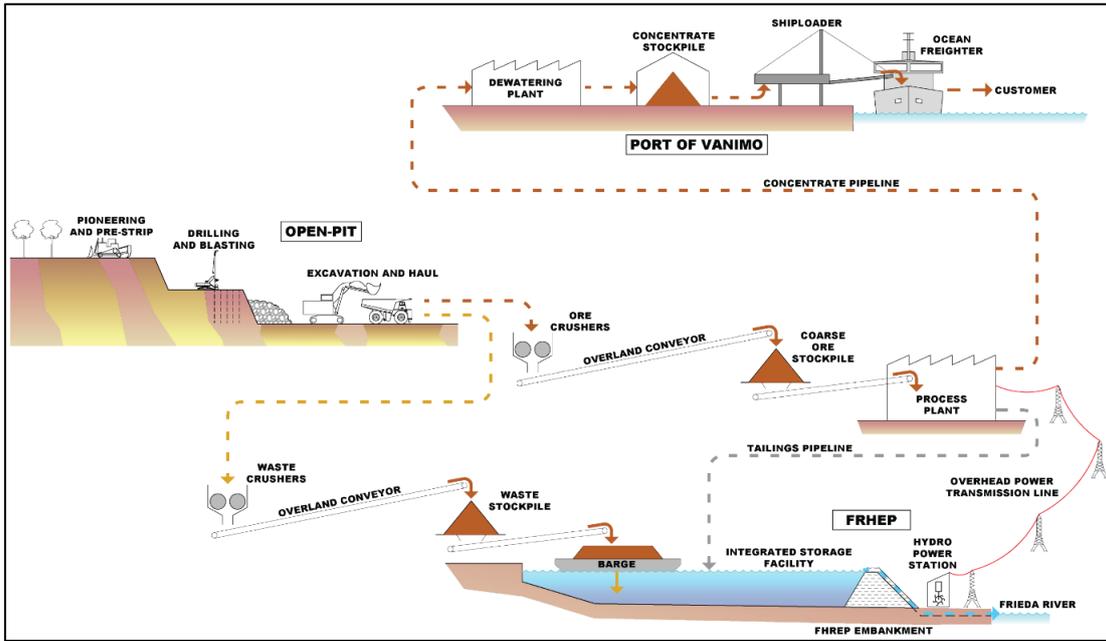
1. Sepik Infrastructure Project (SIP) – The SIP involves externally owned and funded development of regional infrastructure as a pre-requisite to construction of other components of the project and includes:

- Upgrade and expansion of the Port of Vanimo.
- Upgrade of a 188 km road south from the Port of Vanimo on the northern coast of PNG to Green River, and construction of a further 221 km road from Green River to Telefomin, including a 350m bridge over the Sepik River, to enable access to the mine site and proposed hydro-electric power station.
- Establishment of a regional airport facility at Green River for commercial use, suitable for 50 seat fixed wing aircraft.
- Installation of a fibre optic cable to connect to an international service provider at Vanimo.
- The total cost of the road, airfield and port upgrades is estimated at US\$739 million, to be funded by government and/or public-private partnerships.^(a)

2. Frieda River Copper-Gold Project (FRCGP) – This includes the proposed mine, process plant and slurry pipeline to Vanimo Port.

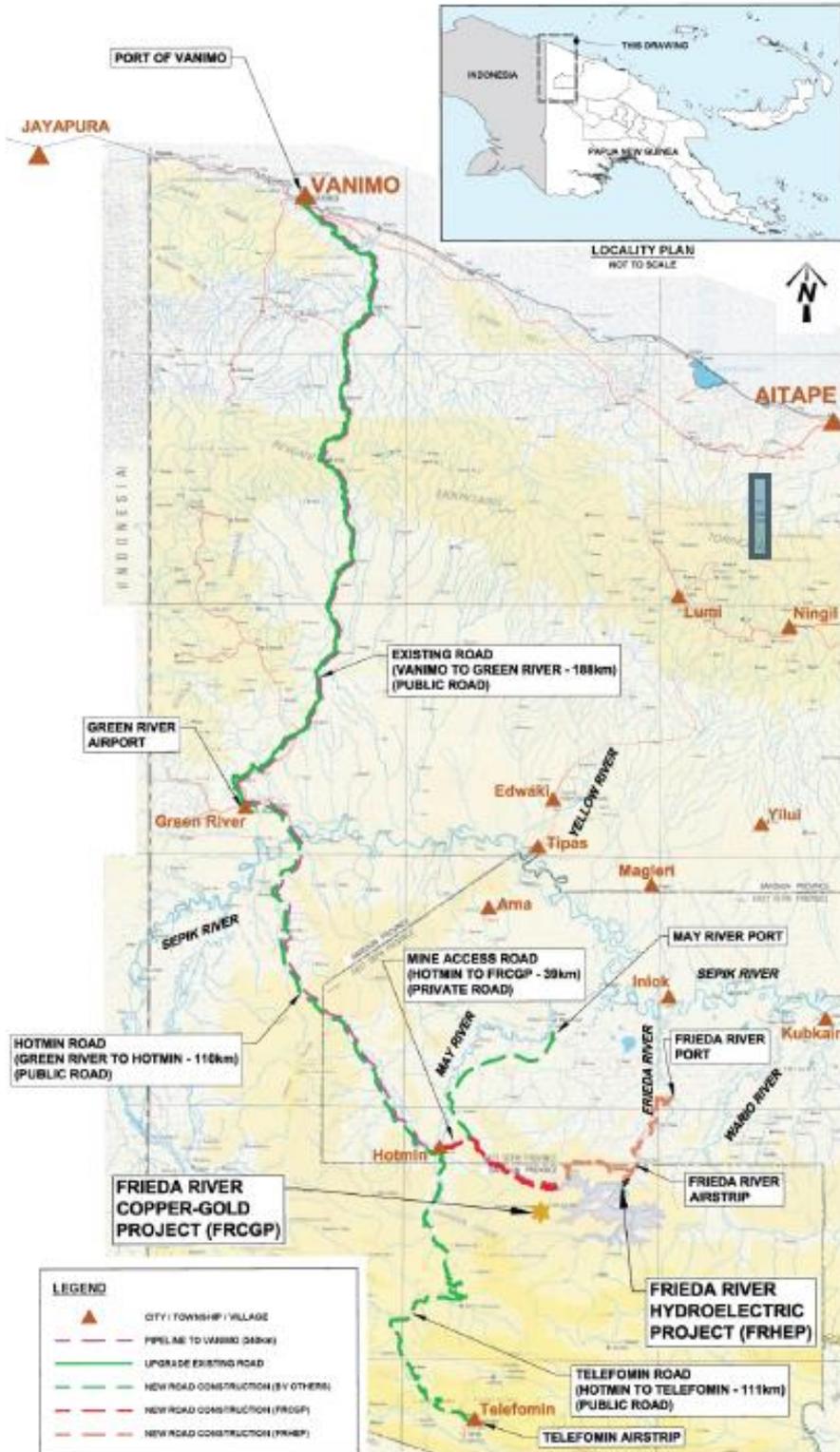
- The mine is based on the Horse-Ivaal-Trukai, Ekwai and Koki (HITEK) porphyry copper/gold deposits and potentially will include the Nena epithermal copper/gold deposit. Together, these deposits contain an estimated 13 million tonnes of copper and 20 million ounces of gold, representing one of the largest undeveloped copper resources in the world.
- A large-scale open-pit mine will feed ore from the HITEK deposits to a conventional comminution and flotation process plant that will produce a copper/gold concentrate.
- The concentrate will be piped via a 340km buried pipeline to Vanimo where it will be dewatered for export.
- Mine waste rock and process tailings will be stored under water within the hydro-electric dam reservoir.
- LOM annual production will average 670,000 tonnes of concentrate containing 175,000t of copper and 230,000 ounces of gold.
- Pre-production capital cost of the mine and associated process plant is estimated at US\$2.8 billion, excluding the US\$351 million cost of the concentrate pipeline, and the US\$143 million cost for mining fleet.^(b)
- Sustaining capital over the life of the mine will be US\$1.9 billion^(b) inclusive of the staged process plant expansion in production Year 8.

Mine and Process Plant Diagram and Mine Schematic



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Map showing components of the Sepik Development Plan



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3. Frieda River Hydro-electric Project (FRHEP) – This includes the hydro-electric power station, tailings and waste rock storage facility, located on the Frieda River approximately 16km from the mine site.

- The FRHEP requires construction of a main embankment, a reservoir, a spillway, 600MW of installed power and associated support facilities.
- The embankment will have a height of 191m, requiring 30 million cubic metres of rock fill.
- Total installed capital cost is estimated at US\$3.2 billion.^(c)

4. Sepik Power Grid Project (SPGP) – Power transmission infrastructure to distribute excess power from the power station to other customers, either domestically or potentially in Indonesia. It is envisaged that a PNG Government owned corporation could own and maintain the SPGP, which will have an estimated capital cost of US\$418 million, including the cost of a rural electrification network.^(d)

Notes

- a) The capital cost estimate for the SIP represents an AACEi Class 4 estimate with an overall target accuracy range of -15% to +50%.*
- b) The capital cost estimate for the FRCGP represents an AACEi Class 3 estimate with an overall target accuracy range of -10% to +30%.*
- c) The capital cost estimate for the FRHEP represents an AACEi Class 3 estimate with an overall target accuracy of -10% to +30%.*
- d) The capital cost estimate for the SPGP represents an AACE Class 4 estimate with an overall target accuracy range of -15% to +50%.*

Project Economics

The Project is likely to be the second largest capital investment in PNG after the Exxon Mobil LNG project. PanAust identified that a single ownership structure, combining the commercial mine and hydro-electric projects with each entity separable at a future point in time, would reduce the all-in sustaining costs and mitigate potential implementation risks.

Frieda River Copper Gold Project (FRCGP) and Hydro-electric Project (FRHEP) combined	
Material Mined	2920 Mt with strip ratio of 0.96:1
Mill Feed	1490 Mt (0.45% copper, 0.24 g/t gold)
Annual production	670,000 tonnes of concentrate containing 175,000 tonnes of copper, 230,000 ounces of gold
Mine life	33 years
Power station life	100 years
All in sustaining cost	US\$1.01/lb copper (after by-product credits)
Pre-production capex	US\$6 billion (US\$2.8 billion for mine and process plant. US\$3.2 billion hydro-electric facility)
Post tax free cashflow	US\$34.8 billion (Cu price US\$3.30/lb, Au price US\$1390/oz)
Post tax NPV	US\$1.8 billion (Discount rate 8%)
Post tax IRR (real terms)	11%
Mine and process plant implementation timetable	7 years, including 5 years of construction
Hydro-electric power station and dam timetable	7 years, including 6 years of construction
Power station capacity	Up to 490 MW
Hydro-dam capacity	Total process tailings and mine waste rock storage capacity is 3.3 billion cubic metres (Bm ³) with 2.2Bm ³ to be placed over the 33 year life of the mine.
Hydro-dam water depth	180m. Minimum depth of approximately 40m over tailings and waste rock
Sepik Infrastructure Project	
Port of Vanimo upgrade	Capital cost US\$103 million
Vanimo to Hotmin Road	Capital cost US\$340 million
Hotmin to Telefomin Road	Capital cost US\$280 million
Green River airport upgrade	Capital cost US\$16 million
Sepik Power Grid Project	
Northern Transmission line	Capital cost US\$396 million
Eastern Transmission line	Capital cost US\$378 million
Rural power system	Capital cost US\$22 million

The key economic outcomes and capital costs in the table above assume:

- the sale of excess power from the hydro-electric power station via a third party funded transmission network connecting the project to domestic or international buyers; and
- construction of regional transport infrastructure by third parties and/or government.

The feasibility study provided the following operating parameters for the mine, process plant and hydro-electric facility on a combined basis, and assuming sale of excess power into the domestic power grid or to Indonesia, via a transmission network to be constructed and funded by third parties.

Description	Unit	First 5 years	LOM
C1 cash cost (after by-product credits) ^(a)	US\$/lb copper	0.77	0.76
AISC (after by-product credits) ^(b)	US\$/lb copper	0.94	1.01
Annual net profit after tax (NPAT) ^(c)	US\$ million (US\$M)	760	350
Post-tax NPV ₈ ^(d)	US\$M	-	1,845
Post-tax free cash flow	US\$M	-	34,800
Pre-production capital	US\$M	-	5,915
Development capital	US\$M	45	370
Sustaining capital	US\$M	145	1,585
Capital intensity	US\$/t capacity	-	28,310
Project IRR (real terms)	%	-	11
Payback period (post-production)	years	-	5
Total on-site operating cost	US\$/t processed	11.53	10.06
Total production cost	US\$/t processed	15.58	13.10
Average copper recovery	%	81	86
Average gold recovery	%	61	67
Average annual copper in concentrate	ktpa	190	175
Average annual gold in concentrate	kozpa	255	230
Average mill feed	Mt	42	45
Average strip ratio (waste:ore)	Ratio	0.83	0.96

Notes:

(a) C1 cash cost: Brook Hunt convention for the reporting of direct cash costs comprising: mine site, product transportation and freight, treatment and refining charges and marketing costs; based on payable metal content.

(b) All-in sustaining cost: the C1 cash cost plus royalties, corporate support and shared services costs; and sustaining capital; and lease principal and interest charges.

(c) PNG corporate tax rate of 30%

(d) US\$3.30/lb copper, US\$1,390/oz gold

The power station will have excess power available for sale to third parties as per the following table:

Power distribution	Year 1-7 (GWh/a)	Year 8-33 (GWh/a)	Post mine closure (GWh/a)
FRHEP power generation	2,800	2,800	2,800
FRCGP demand	1,320	2,050	0
Export sales	1,450	760	2,800

As proposed by PanAust, the Sepik Power Grid Project could be comprised of either of two major transmission lines.

- The 380 km Northern Transmission Line would connect the power station to northwest PNG and Jayapura in Indonesia and would have a capital cost of US\$396 million.
- The alternative 320 km Eastern Transmission Line would connect the FRHEP to the Ramu power system in Hides via Telefomin and would have a capital cost of US\$378 million.

Rural electrification infrastructure would cost an additional US\$22 million.

Hydro-electric power station pre-production capital cost estimate summary

Description	Cost (US\$ million)
Direct costs	1,584
Indirect and Owner's costs	1,155
Contingency	489
Total	3,228
Indirect costs (% of direct costs)	73
Contingency (% of direct and indirect costs)	19

Mine and process plant pre-production capital cost estimate summary

Description	Cost (US\$ million)
Direct costs	1,820
Indirect and Owner's costs	1,013
Contingency	429
Subtotal	3,262
Less balance of mining fleet leasing costs after down payments	(143)
Less concentrate pipeline BOOT	(351)
Total	2,770
Indirect costs (% of direct costs)	56
Contingency (% of direct and indirect costs)	16

Mine and Process plant operating cost estimate summary - standalone FRCGP project

Cost centre	US\$/t processed	
	Year 1 to Year 5	LOM average
Mining (US\$/t material mined)	2.59	2.39
Mining	4.72	4.68
Processing	6.71	7.43
Logistics	0.38	0.38
General and administration	2.08	1.86
Subtotal	13.88	14.35*
Transport and selling realisation charges	1.72	1.17
Total	15.61	15.52

*US\$14.35/t processed reduces to US\$9.81/t processed in the case of a Combined FRCGP and FRHEP. The operating cost estimate presented in the table does not include concentrate treatment and refining charges, royalties and mobile mining fleet lease payments. These costs were applied separately in the financial model to determine the C1 cash cost and AISC.

Mineral Resource

The HITEK porphyry copper/gold deposits contain an estimated total combined Measured, Indicated and Inferred Mineral Resource of 2,640Mt. The Mineral Resource estimates are reported under the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (*JORC Code, 2012 Edition*).

HITEK Mineral Resource 2017 Classification	Tonnes (Mt)	Copper (%)	Gold (g/t)	Silver (g/t)
Measured	620	0.53	0.30	0.82
Indicated	1,240	0.44	0.22	0.75
M+I subtotal	1,860	0.47	0.25	0.77
Inferred	780	0.35	0.18	0.83
M+I+I total	2,640	0.44	0.23	0.79

Mineral Resource notes:

- (i) Reported at a copper cut-off grade 0.2% (total copper).
- (ii) The Measured and Indicated Mineral Resources is inclusive of those Mineral Resources modified to produce the Ore Reserve.
- (iii) The Mineral Resource is reported on a 100% ownership basis.
- (iv) Total values may include minor computational errors due to rounding.

The information on the HITEK Resource is extracted from the report entitled "2017 Horse/Ivaal/Trukai/Ekwai/Koki (HITEK) Deposit Frieda River Mineral Resource and Ore Reserve Statements" created on 24 March 2017 and available on the Company website.

HITEK Ore Reserve 2018

An update to the HITEK Ore Reserve has been lodged with the ASX today (10 December 2018) and is available on the Highlands Pacific website at www.Highlandspacific.com.au.

Class	Tonnes (Mt)	Copper grade (%)	Gold grade (g/t)
Proved	604	0.51	0.30
Probable	761	0.42	0.21
Total	1,365	0.46	0.25

Ore Reserve notes:

- (i) Estimated at commodity prices of US\$3.30/lb copper and US\$1,390/oz gold*
- (ii) Reported using a breakeven economic cut-off value that considers relevant modifying factors*
- (iii) Reported on a 100% ownership basis*
- (iv) The tonnes and grades are stated to a number of significant digits reflecting the confidence of the estimate. Since each number and total is rounded individually, the table may show apparent inconsistencies between the sum of rounded components and the corresponding rounded total.*

The feasibility study scheduled 1,490Mt of HITEK mill feed which includes 190Mt of Inferred Mineral Resource from within the design open-pit (approximately 13% of the total mill feed tonnes which equates to 6% of the revenue).

(There is a low level of geological confidence associated with Inferred Mineral Resources. There is no certainty that further exploration, resource definition or grade control work will result in a higher confidence Mineral Resource classification or that the production target itself will be realised)

Permitting and Application Process

A Proposal for Development will be submitted to PNG's Mineral Resources Authority shortly to support an amendment to the existing Special Mining Lease (SML) application of 24 June 2016.

The SML process requires additional plans, reports and documents to accompany lodgement of the updated feasibility study. Among these are:

- A land ownership report for the area in and around the FRCGP footprint which includes a map of the boundaries of groupings, individuals and alienated land.
- A business development and supply and procurement plan setting out how local business would be fostered and where supplies would be purchased. This will include the goal of sourcing locally from the province or wider PNG if goods can be supplied in a timely manner and are cost-competitive.
- An employment and training plan.
- A resettlement plan that describes the resettlement policy framework, objectives, options for potential sites, eligibility and entitlements, compensation framework, livelihood restoration and stakeholder engagement.

Applications for the required tenements will accompany the amended SML application.

An Environment Permit issued by the Minister for Environment and Conservation is a necessary pre-condition for the Sepik Development Project and grant of the SML. The Project's Environmental Impact Statement is scheduled to be lodged shortly.

Project Timeline

Project implementation can be completed over seven years with five construction years required for the mine and process plant and six construction years for the hydro-electric power station and dam. Project implementation includes the detailed engineering, pre-construction enabling works, construction, commissioning and operational readiness activities leading to the ramp-up of commercial operations. There is no allowance for time delays in the implementation schedule critical path.

The feasibility study identified that it may be possible to delay some non-critical elements, such as the Port of Vanimo, from the assumed construction start date. The construction of the road link to Vanimo and other transport infrastructure upgrades can occur independently of the other projects, however, the construction of the mine, process plant, dam, power plant and transmission networks all rely on the Sepik Infrastructure Project being complete prior to the start of their construction.

The permitting process is defined in legislation and it is PanAust's view that it is likely to require two or more years given the Project scope.

The Project construction schedule is illustrated the following table:

Milestone description	Planned date
Project EIS and FRCGP SML submission	Q2, Year -9
Full project permitting achieved/commence early enabling works	Q3, Year -8
Final investment decisions	Q1, Year -7
FRHEP - commence site establishment	Q4, Year -7
Vanimo transport logistics route available (including public and mine access road)	Q1, Year -5
FRCGP - commence process plant bulk earthworks	Q3, Year -5
Village resettlement complete	Q2, Year -3
FRCGP - commence mine pre-strip	Q2, Year -2
FRCGP - waste deposition barges operational	Q2, Year -1
FRHEP - early power FRCGP - commence process plant wet commissioning	Q3, Year -1
FRHEP - Stage 1 mine power available	Q3, Year -1
FRCGP - commence production ramp up	Q1, Year 1
FRHEP - export power available	Q4, Year 1
SPGP - transmission line available for export power	Q4, Year 1

Final Investment Decision

A SML application does not represent a commitment to immediately develop the Project. A positive final investment decision is the trigger for committing to Project development based on the terms negotiated with the government and the prevailing investment environment.

PanAust said that a final investment decision on the mine, process plant and hydro-electric power station would be expedited through the development of the various components of the Sepik Infrastructure Project, including transport infrastructure.

The fiscal regime and macroeconomic environment will determine whether the Sepik Development Project will be implemented. The minimum requirements for the final investment decision may include, but are not limited to:

- A suitable and stable fiscal regime as part of the proposal for development to provide confidence in government and investor returns (current proposed changes to the Mining Act if enacted would likely render the Project unviable);
- Public road access to the upgraded Port of Vanimo developed by third parties;
- Issue of the environmental permits for the six projects (FRCGP, FRHEP, Ocean Port, SPGP, Public Roads, Green River Airport);
- Approval of the SML and other project tenure;
- Approval of the financing plan; and
- Commodity market conditions.

For further information, please contact:

Joe Dowling, Stockwork Corporate Communications - 0421 587 755

Forward Looking Statements

All statements other than statements of historical fact included in this announcement including, without limitation, statements regarding future plans and objectives of Highlands Pacific Limited are forward-looking statements. When used in this announcement, forward-looking statements can be identified by words such as 'may', 'could', 'believes', 'estimates', 'targets', 'expects' or 'intends' and other similar words that involve risks and uncertainties.

These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this announcement, are expected to take place. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the company, its directors and management of Highlands Pacific Limited that could cause Highlands Pacific Limited's actual results to differ materially from the results expressed or anticipated in these statements.

Highlands Pacific Limited cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements. Highlands Pacific Limited does not undertake to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this announcement, except where required by applicable law and stock exchange listing requirements.

Competent Person. Ore Reserves

The data in this report that relate to Ore Reserves for the Frieda River Project are based on information reviewed by Mr Scott Cowie who is a Member and Chartered Professional (Mining) of the Australasian Institute of Mining and Metallurgy (MAusIMM CP). Mr Cowie is a full-time employee of PanAust Limited. Mr Cowie has sufficient experience relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Cowie consents to the inclusion in the report of the Ore Reserves in the form and context in which they appear.

The information on the HITEK Reserve is extracted from the report entitled "Frieda River Copper/Gold Project Reserve Update" created on 10 December 2018 and available on the Company website.

Competent Person Statement. Mineral Resources

The data in this report that relate to Mineral Resources for Frieda River (HITEK and Nena) are based on information reviewed by Mr Shaun Versace who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Versace is a full-time employee of PanAust Limited. Mr Versace has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Versace consents to the inclusion in the report of the Mineral Resources in the form and context in which they appear.

The information on the HITEK Resource is extracted from the report entitled "2017 Horse/Ivaal/Trukai/Ekwai/Koki (HITEK) Deposit Frieda River Mineral Resource and Ore Reserve Statements" created on 24 March 2017 and available on the Company website.

Highlands confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Highlands confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.



ASX Code: HIG

POMSoX Code: HIG

Shares on Issue: 1,093 million

Performance Rights: Nil

Directors

Ron Douglas, Chairman

Craig Lennon, MD/CEO

Ernie Gangloff

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About Highlands Pacific Limited

Highlands Pacific is a PNG incorporated and registered mining and exploration company listed on the ASX and POMSoX. Its major assets are interests in the producing Ramu nickel cobalt mine and the Frieda River copper gold project; with exploration in progress in the Star Mountains. Highlands also has exploration tenements at on Normanby Island (Sewa Bay).

Ramu Nickel Cobalt Mine

The producing Ramu nickel cobalt mine is located 75km west of the provincial capital of Madang, PNG. Highlands holds an 8.56% interest in the Ramu project that will increase to 11.3% at no cost to Highlands once Highlands' share of Ramu project debt is repaid to the project manager and joint venture partner Metallurgical Corporation of China (MCC).

Star Mountains Prospects

The Star Mountains exploration tenements are located approximately 20km north of the Ok Tedi mine, in the West Sepik Province, PNG. They lie within the highly prospective New Guinean Orogenic Belt, which hosts the Grasberg, Ok Tedi, Porgera and Hidden Valley mines, as well as the Frieda deposit.

Frieda River Copper/Gold Project

The Frieda River copper gold project is located 175km north-west of the Porgera gold mine and 75km north-east of the Ok Tedi mine. Highlands has a 20% interest in the project and Frieda River Limited (a wholly owned subsidiary of PanAust Limited which in turn is a wholly owned subsidiary of Guangdong Rising Assets Management Co. Ltd.) has 80%.

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