ASX RELEASE
21 July, 2020

QUARTERLY ACTIVITIES REPORT JUNE 2020

- **Review of processing plant completed in June 2020 confirms proposed treatment path and recommends plant and equipment changes to the comminution and elution circuits.**
  - **Plant changes will provide additional operational security and benefits**
  - **Start up Capital costs reduced to US$90.7M including contingency of US$11.3M.**
  - **Updated Project Financial Model (at gold price of US$1,550) demonstrates that Stage 1 of the Borborema project will:**
    - Increase Pre-tax NPV (8%) to US$342M (A$496M) and IRR to 64.7%;
    - Reduce the start up capital cost to US$91M including contingency;
    - Deliver AISC of US$713 per ounce gold (lowest cost quartile), and
    - Produce 729,400 ounces of gold over the 10 year mine life of Stage 1.

- **Funding for the development of the Borborema Project is being actively pursued with the search for commercially attractive funding widened to include several groups, not just the traditional project financiers who have been slowed by the recent volatility of the financial markets.**

- **Laboratory work to produce commercially attractive bulk mica concentrates, details of which can be provided to potential offtakers, is progressing well with first results expected in August.**

- **Payments for the completion of the 2017 Posse iron mine sale continue to be received in line with the revised schedule with final payment due in August 2020.**

During the quarter Big River Gold Ltd (ASX: BRV) (**Company** or **Big River**) completed a review of the Definitive Feasibility Study (DFS)[1] for the Borborema Project released in December 2019. The outcomes of the review recommended changes to the process design that further de-risk the operation and provide substantial improvement to the project economics as outlined in the ASX announcement of 9 July, 2020.

REVIEW & UPDATE OF 2019 DFS

Reviews of the Definitive Feasibility Study (**DFS**) completed by Wave International Pty Ltd (**Wave**) in December 2019 were undertaken between April and June 2020 and conclusions are summarised below. For more detail refer to the ASX announcement of 9 July, 2020. A report titled *DFS Changes & Estimate Update* was completed in June 2020 by engineering consultants, CPC Project Design (**CPC**) following a review of plant layout and water usage by Wave in April 2020.

[1] For full details of the Definitive Feasibility Study, refer to ASX announcement of 23 December, 2019.

The work concentrated solely on improving the processing plant and performance. All other technical and financial aspects of the DFS as described in the ASX announcement dated 23 December, 2019 remain unchanged, including mining, environmental and social aspects.

The review confirmed the suitability of the proposed processing path but recommended changes that were accepted by the Company to:

- the location and layout of the process plant (now finalised);
- the choice of some plant and equipment used in the crushing and grinding circuits and elution circuit.

Key Outcomes of Updated DFS

Start-up capital costs of the 2Mtpa Project were reduced to **US$90.7M which includes a contingency provision of US$11.33M** and the average All In Sustaining Cost (AISC)[2] has seen a significant reduction to **US$713 per ounce gold** over the 10.2 years of production scheduled for Stage 1 (Figure 7).

Stage 1 is expected to produce 729,400 oz gold over 10.2 years which comprises only a portion of the Borborema Resource/Reserves of 2.43Moz and 1.61Moz respectively. Refer to ASX announcements of 23 December, 2019 and 6 March, 2018 for more details on reserves and resources.

The pre tax Project NPV (at 8% discount) increased from US$218M to **US$342M (A$496M)**[3] while the after tax NPV (at 8% discount) increased to **US$287M (A$416M).**

The updated Project Financial Model used a flat gold price of US1,550 per ounce compared to the 2019 DFS assumption of US$1,400 which remains below the consensus of recent forecasts compiled by Bloomberg[4] and is substantially lower than the current spot price of over US$1,800 per ounce.

The variables that have the greatest impact on the NPV of the Project are ore grade and factors affecting gold price and recovery. The major sensitivities are revenue affecting, indicating the risk to the Project economics is most leveraged to the gold price or quantity of gold sold (Table 1).

Table 1. Sensitivity to change in gold price

Financial Indicator	US$1300	US$1400	US$1550 DFS (2020)	US$1700	US$1800	US$1900
NPV (8%, pre-tax), US$	$233M	$277M	**$342M**	$408M	$451M	$495M
IRR (pre-tax)	49.5%	55.8%	**64.7%**	73.1%	78.6%	83.8%
NPV (8%, post-tax), US$	$195M	$232M	**$287M**	$343M	$380M	$416M
IRR (post-tax)	44.4%	50.0%	**57.9%**	65.4%	70.3%	75.0%
Payback (from start production)	1.9 yrs	1.8 yrs	**1.5 yrs**	1.3 yrs	1.2 yrs	1.2 yrs
Ave EBITDA, US$/year	$54.0M	$61.0M	**$71.6M**	$82.1M	$89.2M	$96.2M

Plant Configuration Changes

The review of the plant process design confirmed that the pathway was appropriate for treating the Borborema ore however, it was decided to change the componentry in two areas of the design:

[2] AISC calculated in accordance with the World Gold Council guidelines

[3] AUD:USD exchange rate unchanged at 0.6900

[4] Bloomberg. 11 June, 2020

comminution (crushing and grinding) and elution as illustrated in Figures 2 to 5. This change of plant and equipment was decided upon because they met three essential criteria:

- They de-risked the project in terms of improved operational reliability, maintenance and servicing and availability of parts in-country.
- They maintained and preferably improved operational efficiency and effectiveness, and
- There was no material increase in capital cost.

It was decided to replace the SAG and ball mill in the comminution circuit as proposed in the 2019 DFS with a three stage crushing plant and ball mill. This was done to reduce the risk and increase the security of the operation by minimising the possibility of a long shutdown of the plant caused by a SAG mill equipment failure and the lack of available spare parts or skilled technicians within Brazil. It was considered a SAG mill would be more exposed to this risk than the conventional ball mill which are more common and manufactured in Brazil whereas SAG mills are not.

Figure 1. View to the south west over the Borborema pit showing the exposed ore zone and infrastructure.

The selection of a Pressure Zadra plant to replace the proposed AARL elution circuit was made to conserve water and is considered better suited when operating with the treated sewage water from Currais Novos.

The studies demonstrated that the proposed capital equipment changes will not show a marked difference in operational performance and may result in improvements as discussed below. They do however, provide additional security for ongoing operations and the cost estimates indicate some savings in capital expenditure will be obtained.

Plant Location and Layout

The plant site layout and design were reviewed to optimise the site location, layout and earthworks required which led to:

1. The plant being relocated to:
   i) optimise the haulage distance from mine to ROM Pad.
   ii) comply with legislation requiring blast zone clearance.
   iii) Improve the accuracy of the earthworks requirement and place high load structures on areas that are cut and not filled (Figure 2). A cut and fill plan shows a revised cut of 157,035m^3 from the topography and required fill of 152,300m^3 for a net cut of 4,735m^3.
2. A minimisation of the plant footprint to reduce environmental impact and achieve practical operations
3. The plant layout being redesigned to consider appropriate locations for infrastructure such as heliport (gold room), substations and Incoming HV Switchyard for improved operations.

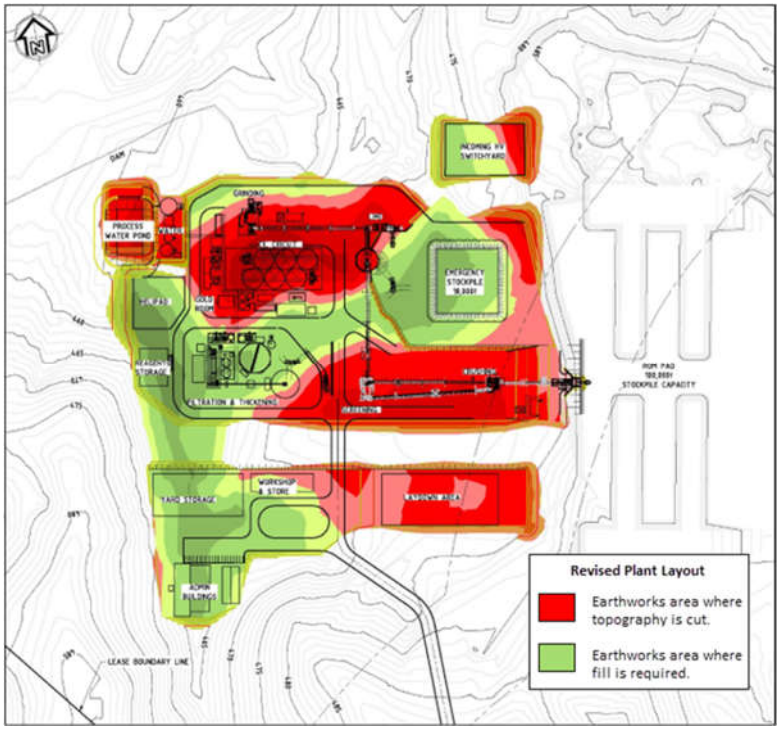

Figure 2. Revised plant layout (Wave 2020) with a smaller footprint and relocated. Note high load structure located on 'cut' areas (in red) rather than areas of infill.

Capital expenditure improvements

The revised capital costs were incorporated into the Project Financial Model along with updates to taxation regimes. Improved taxation rates granted in April by the local authorities on service providers were also included. Currency exchange rates were largely unchanged except for the Brazilian Real for which an exchange rate of 0.200 BRL:USD was assumed that remains more conservative than recent forecasts.

Tables 2 and 3 summarises the revised capital estimates.

Table 2. Capital cost breakdown and comparison		
Works Area - Description	**DFS (2019)**	**DFS Update (2020)**
Mine – Quarry	1,386,400	1,155,900
Industrial Plant	60,025,500	54,428,600
Non-Process Infrastructure	7,395,800	6,181,500
Other – First Fills and Spares	2,482,900	1,818,000
Indirect Costs	16,679,200	15,790,600
Total, excluding contingency	**87,969,900**	**79,374,800**
Contingency	11,361,000	11,333,900
Project Total	**99,330,900**	**90,708,600**

Table 3. Capital cost summary by Discipline		
Discipline	**DFS (2019)**	**DFS Update (2020)**
Buildings	3,528,915	3,047,709
Concrete	2,839,662	2,429,060
Electrical and Instrumentation	10,739,817	10,571,300
EPCM	8,285,797	6,929,830
Earthworks	7,724,671	4,338,884
Indirect Costs	6,977,132	6,779,716
Mechanical and Platework	34,583,680	33,706,536
Piping and Valves	6,521,105	5,991,645
Structural Steel	6,769,092	5,580,083
Total excluding Contingency	**87,969,870**	**79,374,765**
Contingency	11,360,982	11,333,875
Project Total	99,330,852	90,708,639

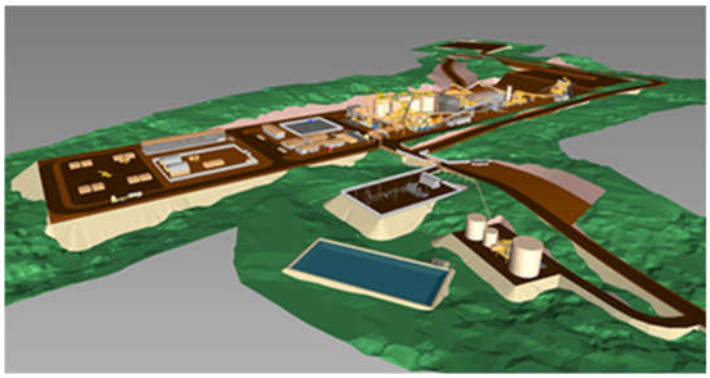

Figure 3. Original 2019 DFS Plant design and layout (view to north east)

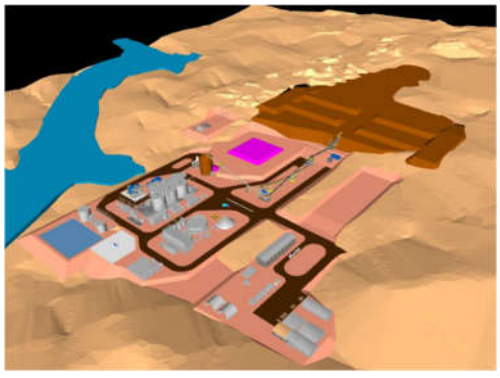

Figure 4. View to the north east across the revised Borborema plant layout

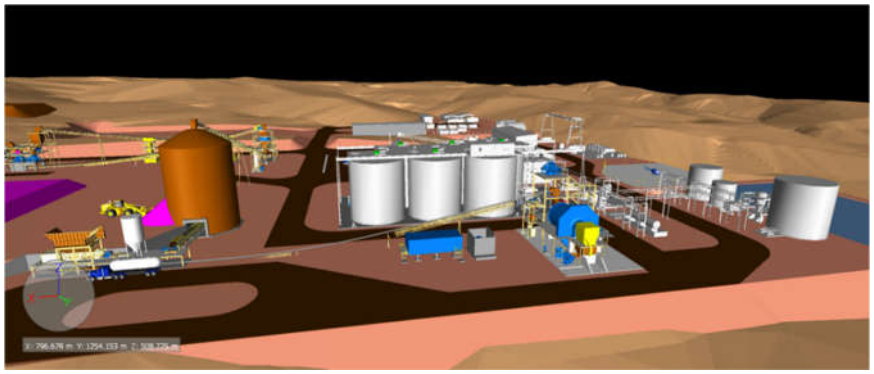

Figure 5. View to the south of the revised Borborema plant layout, showing grinding circuit, CIL tanks and fine ore bin/emergency stockpile feeder to the left

Project Financial Model

Table 4 summarises the key operating and financial results of the revised DFS and compares them to the 2019 DFS estimates.

Table 4. Summary Borborema DFS key results		
Key Parameters	**2019 DFS**	**Revised/Updated 2020 DFS**
Mineral Resources (reported above 0.5g/t Au cut off, 2013)[5]	68.6Mt @ 1.10 g/t Au (2.43Moz)	
Stage 1 Ore Reserve Scheduled to be mined in DFS[6]	20.0Mt @ 1.22 g/t (784,480 oz)	
Gold produced	729,374 ounces	
Capital Costs		
Processing plant Capital Costs	US$ 60.03M	US$ 54.43M
Non Processing infrastructure and Owners costs	US$ 27.94M	US$ 24.95M
Contingency	US$ 11.36M	US$ 11.33M
Total Capital Summary	**US$ 99.33M**	**US$ 90.71M**
NPV (8%, Pre-Tax)	US$ 218M	US$ 342M
NPV (8%, Post-Tax)	US$ 203M	US$ 287M
IRR (Pre-Tax)	43.6%	64.7%
IRR (Post-Tax)	41.8%	57.9%
Payback from commencement of production	2.4 yrs	1.4 yrs
Life of Mine C1 Cash Costs	**US$642/oz**	**US$534/oz**
Life of Mine AISC costs	**US$839/oz**	**US$713/oz**
Production Summary LOM	**2019 DFS**	**Revised/Updated 2020 DFS**
Mine Life (from commissioning date)	10.2 years	
Strip ratio (waste (t): Ore(t))	4.2	
Mill throughput (total)	20.0 Mt	
Grade	1.22 g/t Au	
Recovery	92.5%	
Gold produced – over Life of Mine	729,374 oz	

[5] Resources (inclusive of Reserves) estimated in 2013, and updated for JORC 2012. Refer ASX Announcement 24 July, 2017.
[6] Pit optimisation and Reserves estimated using gold price of US$1,250/oz; Updated DFS (2020) cashflow analysis used US$1550/oz compared with the 2020 DFS which used US$1400/oz. Only Measured and Indicated Resources were scheduled in mining – no Inferred Category Resources have been considered.

LOM Project Economics, US$M	2019 DFS	Revised/Updated 2020 DFS
Study Gold price	$1,400/oz	$1,550/oz
Gross Revenue LOM	$ 1,021M	$ 1,131M
Operating costs LOM	$ 494M	$ 389M
Capital:		
Capital – Project Plant (inc contingency)	$ 99.3M	$ 90.71M
Working capital – Mine establishment pre-production	$ 6.6M	$ 5.36M
Capital – sustaining and mine closure costs	$ 21.0M	$ 20.97M
EBITDA	$527.3M	$724.2M
NPAT	$328.3M	$526.6M

Taxation

The Borborema Project is situated in a region of Brazil that makes it eligible for the Sudene tax concession scheme which can reduce the company taxation rate to 15%. In addition, imported items that cannot be produced or acquired in Brazil are exempt from import tax and these exemptions have been applied to eligible plant and equipment in the capital estimation and financial model.

In April 2020, as an indication of the level of government support the Project receives, the ISSQN municipal tax on services (similar to a VAT) was reduced from 5% to 2% for those projects such as Borborema which employ over 100 people.

All relevant taxes have been applied where appropriate to the cashflow model.

Stage 1 Production profile

Figure 6 illustrates the production profile during Stage 1 and the drop in AISC in the later years as mining ceases in the current plan. However, the balance of reserves not scheduled for mining in Stage 1 will be assessed for possible Stage 2 mine expansions and extension of the mine life beyond Year 10. At this stage technical and economic studies need to be completed before any decision can be made as to extending the mine life or repeating the production profile.

Table 5 illustrates the key financial and operational indicators for the 10.2 years of Stage 1 and also the first 5 years during which higher grades are preferentially processed.

Table 5. Key Financial & Operational indicators for Stage 1 and Years 1-5

Production Summary (LOM, 10.2 years):		Production: First 5 years results (@ US$1,550/oz)	
Average Annual production	*71,500 oz/year*	Average annual production	*83,800 oz/year*
Grade	*1.22 g/t Au*	Grade	*1.40 g/t Au*
Total Gold production	*729,374 oz*	Total Gold production	*410,690 oz*
C1 Cash Cost	*US$534/oz*	C1 Cash Costs	*US$532/oz*
AISC	*US$713/oz*	AISC	*US$692/oz*
Total EBITDA (10.2 years)	*US$ 724m*	Total EBITDA (4.5 years)	*US$ 409m*

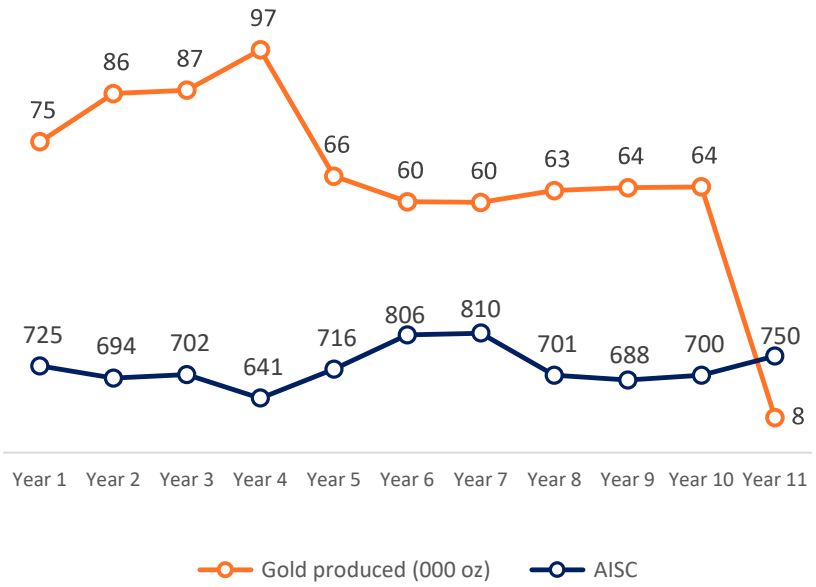

Figure 6. Production profile of Stage 1 operations scheduled in the DFS remains unchanged. Studies need to be undertaken to confirm the viability of a Stage 2 expansion which will extend the minelife using the balance of reserves not included in Stage 1.

Figure 7:
Production Cost Comparison, Key Brazilian Mines
AISC US$/oz | 2019-20

Note:

Average Company AISC was used as per World Gold Council guidelines and includes both opex and sustaining capex.

**Credits are included in mine AISC estimate (Cu or Ag)*

(f) Forecast from Feasibility Studies

OTHER ACTIVITIES DURING THE QUARTER

PROJECT FUNDING

Securing funding for the construction of the Borborema Project has been a high priority for the Company and has continued despite travel restrictions. The Company has noted a global slowdown in the provision of funding from traditional lenders in the market, due to market volatility amidst the current economic uncertainty. However, the Company notes the continued strengthening of the gold price and the compelling economics of the Borborema Project and is confident it will source funding for construction in due course.

In the meantime, the Company has been and will continue to investigate alternative funding options including corporate partnerships where such arrangements can increase shareholder value.

Several financial groups, other than traditional banks, and mining groups have approached the Company with a view to assessing options for funding or partnership arrangements and these are being considered.

MICA TESTWORK

Preparation of mica samples from tailings is underway with Nagrom in Perth producing mica concentrates potentially suitable for sale into the international market. Various products of various quality and specification will be made available for independent assessment and used to test market acceptance with various offtake counterparties.

This has been progressing well and silica free, good quality product is being produced via magnetic separation. Sample preparation and an independent market assessment should be completed by early August.

POSSE SALE PAYMENTS

Big River previously announced on 29 April 2020 that under an agreement reached with the buyers of the Posse iron mine, World Gold Mineracao S/A (**World Gold**) would pay R$3.5 million (approximately A$1 million) on or before the 16 May, 2020 as full and final settlement of the Posse sale completed by Big River in 2017.

As at the date of this quarterly activities report, World Gold has paid R$2 million (~A$530,000) and committed to pay the outstanding balance of R$1.5 million (~A$400,000) by 31 August 2020. The Company has reserved its rights but expects that payment will be made in full.

ROADSHOWS

Notwithstanding the COVID-19 induced isolation and travel bans, the Company has been undertaking extensive Virtual Roadshows via Zoom to a number of investor groups in Europe, North America, Australia and Asia. The presentations were well received and have raised the profile of Big River and the Borborema Project. Several potential sources of project funding have also been identified during these meetings.

FINANCIAL POSITION

At the end of the June quarter the Company had cash at hand of $2.99M with a further R$500,000 (~A$132,000) received after June 30. Another R$1.5M (~A$400,000) of Posse receipts are expected by the end of August.

With no debt and forecast net cash outflows next quarter of approximately $280k, after adjusting for Posse receipts and reduced engineering work the Company is in a good position moving forward.

On behalf of the Board.

Andrew Richards
Executive Chairman
Big River Gold Ltd

About Big River Gold

Big River Gold Ltd (ASX:BRV), is a mineral exploration and development company listed on the Australian Securities Exchange. Its major focus is the 2.43M ounce Borborema Gold Project in Brazil; a country the Company believes is underexplored and offers high potential for the discovery of world class mineral deposits.

Borborema Gold Project

Borborema is a project with a resource of 2.43Moz gold, located in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Big River and consists of three mining leases covering a total area of 29 km^2 including freehold title over the main prospect area.

The Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water and sealed roads. It is close to major cities and regional centres and the services they provide.

Definitive Feasibility Study (DFS)

A DFS for development and construction of Stage 1 of the Borborema Project was completed in December 2019 as detailed in the ASX Announcement of 23 December, 2019. It confirmed the project's strong economics and optimised a profitable open pit with a mine life of more than 10 years producing approximately 729,000 ounces gold at a C1 cash cost of US$534/oz and AISC of US$713/oz.

Assuming a gold price of US$1,550 per ounce, the pre-tax NPV (8%) returned US$342M with an IRR of 64.7%. The project returns an average EBITDA of US$72M pa.

Competent Person Statements

Borborema mineral resource estimate

The information in this announcement that relates to the mineral resource estimate for the Borborema Project was first reported in accordance with ASX Listing Rule 5.8 on 24 July 2017. Big River confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 24 July 2017 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply and have not materially changed.

Borborema ore reserve estimate

The information in this announcement that relates to the Ore Reserve estimate for the Borborema Gold Project was first reported in accordance with ASX Listing Rule 5.9 on 6 March 2018, 29 March 2018 and 11 April 2018. All material assumptions and technical parameters underpinning the Ore Reserve estimate continue to apply or have been updated in the attached JORC Table 1.

That portion of the Ore Reserve that was included in the Stage 1 Mining Schedule for the December 2019 Definitive Feasibility Study (DFS) was reviewed by Porfirio Cabaleiro Rodriguez, BSc. (MEng), MAIG of GE21 as part of the DFS. The Ore Reserve was first reported in accordance with ASX Listing Rule 5.9 on 24 July 2017 and updated on 6 March 2018 and is based on information compiled by Mr. Linton Kirk, Competent Person who is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy. Mr. Kirk is employed by Kirk Mining Consultants Pty Ltd and is an independent consultant to the company.