

# NOT FOR DISTRIBUTION OR RELEASE IN THE UNITED STATES

# IGO TO ACQUIRE INTEREST IN GLOBAL LITHIUM JV WITH TIANQI — SECURING EXPOSURE TO THE TIER 1 GREENBUSHES AND KWINANA ASSETS

IGO Limited (ASX: IGO) (**IGO** or the **Company**) is pleased to announce that it has entered into a binding agreement (**Agreement**) with Tianqi Lithium Corporation (SZSE: 002466) (**Tianqi**) to acquire a 49% noncontrolling interest in Tianqi Lithium Energy Australia Pty Ltd (**Lithium HoldCo**) through a subscription for new shares in Lithium HoldCo. This will provide IGO with a 24.99% indirect interest in the world-class Greenbushes Lithium Mining and Processing Operation (**Greenbushes**) and a 49% indirect interest in the Kwinana Lithium Hydroxide Plant (**Kwinana**), both located in Western Australia, for a total consideration of US\$1.4 billion (A\$1.9 billion¹) (**Transaction**). Lithium HoldCo will become the exclusive vehicle for all lithium related investments for IGO and Tianqi outside of China².

IGO intends to fund the Transaction through a combination of A\$1,100 million new debt facilities (**New Debt**), an equity raising of up to A\$766 million (**Equity Raising**), and existing cash reserves of between A\$85 million and A\$149 million<sup>3</sup>.

# **Transaction Highlights**

- Transformational transaction aligned with IGO's strategy of becoming a globally relevant supplier of metals critical to enabling clean energy
- Establishes IGO as a leading ASX-listed company for production of clean energy metals with a highquality portfolio of Western Australian assets across lithium, nickel, copper and cobalt
- Provides IGO with a 24.99% indirect interest in Greenbushes, the world's largest and lowest cost producer of high quality, chemical grade spodumene concentrate in IGO's "backyard"
- Transitions IGO to own a 49% interest in Kwinana, an integrated battery grade lithium hydroxide plant with Korean and European offtake partners and strong ESG credentials
- Creation of a joint global lithium partnership between IGO and Tianqi, a lithium industry leader, to become the exclusive vehicle for any future lithium related investments outside of China
- Attractive organic growth options at Greenbushes and Kwinana provides flexibility and optionality to react to, and capitalise on, changes in demand for high quality lithium products and the ability to scale efficiently
- Opportune timing as global markets transition to clean energy technologies, including electric vehicles (EVs) and renewable energy, all of which underpin strong underlying fundamentals and growth outlook for the lithium sector
- Transaction is Net Asset Value (NAV) accretive and expected to be earnings per share (EPS)
  accretive from FY23, transforming IGO's growth trajectory, scale, diversification and vertical
  integration

<sup>&</sup>lt;sup>1</sup> Acquisition price of A\$1.9 billion calculated using an AUD:USD exchange rate of 0.741.

<sup>&</sup>lt;sup>2</sup> Vehicle in place for a minimum of 20 years.

<sup>&</sup>lt;sup>3</sup> Dependent on take-up of the Retail Entitlement Offer.



- IGO's balance sheet to remain conservatively leveraged with pro-forma gearing of 15.2% postcompletion<sup>4</sup>
- Completion is expected in the June 2021 quarter, following the satisfaction of conditions precedent, including, but not limited to, Tianqi shareholder approval and satisfaction of other transaction conditions (as set out below in the Transaction Summary)

Peter Bradford, IGO's Managing Director and CEO said:

"This is a genuinely transformational transaction for IGO and one that delivers on our strategy to become a global leader in the supply of metals critical for enabling a clean energy future. We see Tianqi, a leader in the global lithium industry and with strong alignment to our strategy, as the ideal partner for IGO. Both Greenbushes and Kwinana are world-class assets with attractive growth profiles that together provide the platform for building a global lithium business. We look forward to working with Tianqi to build a leading global lithium business that will play an important role in supporting the global transition to clean energy technologies, while generating substantial value for IGO shareholders for many years to come."

Tianqi's Founder and Chairman, Mr Jiang Weiping said:

"We are pleased to welcome IGO as our new long-term strategic partner in Lithium HoldCo. Following an extensive global search, IGO was the clear choice to become our long-term partner to establish a new global lithium business given our shared vision for a clean energy future and unique combination of complementary skillsets. This transaction also facilitates a recapitalisation of our balance sheet that will position us strongly for the expected recovery in the lithium sector. We are looking forward to working closely with IGO over the coming years to grow a leading global lithium business that will create significant value for our respective shareholders."

#### Strategic Rationale

The Transaction is consistent with IGO's stated strategy of becoming a globally relevant supplier of metals critical to clean energy and provides significant benefits for IGO, including the following;

- 1. Tier 1 Greenbushes Operation a hard rock lithium mine and processing operation delivering quality, scale and long life: exposure to the lowest cost, largest scale, spodumene concentrate producer globally and which accounted for 21% of global lithium supply in 2019<sup>5</sup>
- 2. Tier 1 Kwinana battery grade lithium hydroxide plant with strong ESG credentials: downstream exposure to lithium hydroxide through Kwinana, Australia's first battery grade lithium hydroxide plant with supply agreements in place with several leading global cathode and battery manufacturers
- 3. Strong near-term production growth underpins cash flow generation: increase in lithium hydroxide production is expected to coincide with a forecast improvement in lithium product pricing<sup>6</sup>, underpinning cash flow generation
- **4.** Long-term sustainable assets with significant growth optionality: attractive growth potential at both Greenbushes and Kwinana with identified low-cost brownfield growth opportunities at both assets
- 5. IGO to become a unique clean energy metals investment opportunity: establishes IGO as a unique clean energy metals investment with a strong ESG brand and all operations in a Tier 1 jurisdiction

<sup>&</sup>lt;sup>4</sup>Pro-forma gearing at completion is calculated as net debt divided by enterprise value based on an IGO proforma enterprise value. Net debt is cash less borrowings. Borrowings include amounts expected to be drawn at completion, including the New Debt. Pro-forma cash comprises cash of A\$509M at 30 September 2020 less cash expected to be used for the Transaction.

<sup>&</sup>lt;sup>5</sup> Global lithium supply by operation per CRU Consulting, Lithium Market Outlook September Update 2020.

<sup>&</sup>lt;sup>6</sup> CRU Consulting, Lithium Economics Through the Value Chain Report November 2020.



- **6.** Well-timed acquisition in the lithium cycle<sup>7</sup>: opportune acquisition timing that takes advantage of the low point in the cycle for lithium, positioning IGO to take advantage of the forecast battery and electric vehicle growth
- 7. Strong partnership with Tianqi a world leading lithium industry participant: Tianqi is a global lithium leader and an ideal partner for IGO. Investment proceeds to reduce Tianqi debt and underpin refinancing plan
- Expected to generate significant shareholder value: the transaction is NAV accretive and expected to be EPS accretive from FY23

# **Transaction Summary**

Under the Agreement, IGO and Tianqi will establish a joint global lithium business, initially focused on Australia, through the acquisition of a 49% non-controlling interest in Lithium HoldCo, and providing IGO with a 24.99% indirect interest in Greenbushes and a 49% interest in Kwinana. Tianqi will hold the remaining 51% of Lithium HoldCo which will become the exclusive vehicle for any future lithium related investments outside of China for Tianqi and IGO upon completion of the Transaction.

Figure 1: Pro-forma Ownership Structure



Upon the completion of the Transaction, IGO and Tianqi shall be party to an agreed Shareholders' Deed for Lithium HoldCo (**SHD**). The SHD contains extensive terms to ensure IGO has appropriate protections, oversight and influence over Lithium HoldCo's operations, including:

 Lithium HoldCo's Board will comprise five directors, with two nominees each appointed by IGO and Tianqi and one independent director to be appointed by Tianqi subject to meeting defined independence criteria as defined in the SHD

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<sup>&</sup>lt;sup>7</sup> Based on IGO's analysis of the market and CRU analysis.



- IGO has the right to appoint the CFO for Lithium HoldCo as well as nominate one of Lithium HoldCo's nominees to the Greenbushes JV Board
- Lithium HoldCo's lithium hydroxide product will be marketed and sold to non-China customers exclusively via Lithium HoldCo.

Refer to Investor Presentation released to the ASX today (9 December 2020) for further detail on the SHD.

The total consideration in respect of the Transaction is US\$1.4 billion, payable through a subscription for new shares in Lithium HoldCo.

IGO intends to fund the Transaction via a combination of the Equity Raising, New Debt and existing cash reserves – further details of which are provided below.

Completion of the Transaction is expected in the June 2021 quarter, following the satisfaction of certain conditions precedent, including (but not limited to):

- Completion of an internal restructure relating to Lithium HoldCo
- Australian Foreign Investment Review Board (FIRB) and Western Australian Office of State Revenue (OSR) reconstruction relief related to the internal restructure of Lithium HoldCo.
- Tianqi obtaining necessary consents / waivers from its existing financiers
- Tianqi entering binding agreements with its lenders on terms materially consistent with the term sheet approved by Tianqi's lenders
- Tianqi obtaining >50% shareholder approval (controlling shareholder is Founder and Chairman Mr Weiping who owns ~35% and has committed to support the transaction)
- No Court or regulatory authority having issued a restraint or prohibition preventing the Transaction
- Tianqi's Chairman making available a US\$117 million loan to Tianqi to provide funding in the period to completion of the Transaction.

IGO has agreed to pay a deposit of US\$70 million to Tianqi which is payable if completion does not occur because IGO cannot fund the purchase price. Conversely, a break fee of US\$70 million is payable by Tianqi to IGO if certain conditions precedent are not satisfied (including for example: failure by Tianqi to gain shareholder approval for the transaction, adverse change in the terms of Tianqi's refinancing between signing and completion). A lower break fee of US\$35 million is payable in a more limited set of circumstances (for example, if Tianqi fails to obtain necessary financier consents).

#### **Greenbushes Overview**

Greenbushes is a large-scale, long life, low cost, Tier 1, hard rock lithium mine with spodumene concentrate plants, located approximately 250km south of Perth, Western Australia. Its Central Lode deposit is the world's largest, hard rock lithium mine by production or contained Ore Reserve. Greenbushes quality is underscored by its position as the lowest cost, hard rock lithium mine on the cost curve<sup>8</sup> with the highest Ore Reserve grade of any hard rock lithium mine globally.

Greenbushes is a well-established operation with mining operations spanning over many years with lithium operations commencing in 1983. The site comprises a large open pit mine, three processing plants – two

<sup>&</sup>lt;sup>8</sup> CRU Consulting, Lithium Economics Through the Value Chain Report, March 2020. Based off 2019 cash cost curve (US\$/t concentrate).



producing chemical grade lithium concentrates (**CGP1** and **CGP2**), one producing technical grade lithium concentrates (**TGP**), and associated infrastructure.

In 2019, Greenbushes produced 764kt of lithium concentrate. Greenbushes completed the construction of CGP2 in mid-2019, bringing annual production capacity to approximately 1.2Mtpa of chemical grade spodumene concentrate.

Significant expansion options exist to increase annual production capacity beyond 1.2Mtpa of chemical grade spodumene concentrate. Near term expansion projects include two additional chemical grade plants (**CGP3** and **CGP4**), each with production capacity of 520ktpa chemical grade concentrate as well as a Tailings Retreatment Plant with production capacity of 280ktpa of chemical grade concentrate. These projects (subject to any final JV approvals and market conditions) are planned to be funded from existing Greenbushes debt facilities, combined with Greenbushes cash flows.

Greenbushes Joint Ore Reserve Committee (**JORC**) Ore Reserve as at 31 March 2018 underpins a mine life in excess of 20 years. In addition to the in-situ orebody at the Central Lode, the Greenbushes Tailings Storage Facility 1 also has a significant lithium endowment (refer to table below):

JORC Reserves and Resources <sup>9</sup> Including Stockpiles	Central Lode	Tailings Storage Facility #1
Ore Reserve (March 2018)	133.1Mt @ 2.1% Li <sub>2</sub> O (2.8Mt contained Li <sub>2</sub> O)	10.1Mt @ 1.4% Li <sub>2</sub> O (0.14Mt contained Li <sub>2</sub> O)
Mineral Resource (March 2018)	178.5Mt @ 2.0% Li <sub>2</sub> O (3.6Mt contained Li <sub>2</sub> O)	18.3Mt @ 1.3% Li <sub>2</sub> O (0.23Mt contained Li <sub>2</sub> O)

Note that the Mineral Resource is inclusive of the Ore Reserve. Since these estimates were prepared effective 31 March 2018, Greenbushes has processed 5.2Mt grading 2.71% Li<sub>2</sub>O from the Ore Reserve (and the Mineral Resource).

#### **Kwinana Overview**

Kwinana is one of the first fully automated battery grade lithium hydroxide facilities globally and the only constructed lithium hydroxide plant in Australia. Kwinana is approximately 35km south of Perth, Western Australia, and only 200km north of Greenbushes, adjacent to major supply chain logistics. The completed plant will comprise two individual production trains with an aggregate nameplate capacity of 48ktpa of premium battery-grade lithium hydroxide.

The first production train (**Train I**) is fully constructed and currently awaiting commissioning, it is expected to commence production in 2021 and complete ramp up by Q4 2022. The second production train (**Train II**) is under construction (approximately 50% of budgeted capital has been spent and 20-30% of the build is complete) and is expected to commission in 2024. Tianqi has spent approximately US\$700 million in total

<sup>&</sup>lt;sup>9</sup> BDA Independent Technical Report for Greenbushes Lithium Operation, March 2020; Mineral Resources are inclusive of Ore Reserves. The estimate has not been depleted for mining after 31 March 2018; Tianqi advised that from the 31 March 2018 estimate to 30 June 2020 5.2Mt grading 2.71% Li₂O has been processed. The information required under ASX Listing Rules 5.8 and 5.9 is set out at the conclusion of this announcement.



at Kwinana with approximately US\$30M to commission Train I and US\$190 million required to complete Train II.

Kwinana forms part of a vertically integrated lithium value chain with Greenbushes to supply the chemical grade lithium spodumene concentrate feedstock required for the Kwinana Plant.

Kwinana will supply lithium hydroxide to customers which include leading global battery cell manufacturers from South Korea and Europe. Kwinana's customers will benefit from strong ESG credentials and visibility over both the raw material supply chain and the source of intermediate processing for the premium battery-grade lithium hydroxide product.

#### **Acquisition Funding**

The US\$1.4 billion (approximately A\$1.9 billion) cash consideration for the Transaction will be funded through a combination of:

- A\$1,100 million new senior secured syndicated and underwritten debt facilities, comprising:
  - A\$450 million amortising Term Loan with a maturity date of the earlier of three years from completion, or 31 March 2024
  - A\$300 million Revolving Credit Facility, also with a maturity date of the earlier of three years from completion, or 31 March 2024
  - A\$350 million Bridge Facility with a maturity date of 31 December 2021.
- Equity raising of up to A\$766 million, comprising:
  - A\$446 million fully underwritten institutional placement (Placement)
  - A\$320 million 1 for 8.5 accelerated non-renounceable entitlement offer (Entitlement Offer), of which the institutional component (A\$256 million) (Institutional Entitlement Offer) will be fully underwritten.
- Balance of between A\$85 million and A\$149 million <sup>10</sup> to be funded through existing cash reserves.

IGO has entered into a credit approved commitment letter with Australia and New Zealand Banking Group Limited, Citibank N.A., Commonwealth Bank of Australia, National Australia Bank Limited and Westpac Banking Corporation to provide the senior secured facilities.

Citigroup Global Markets Australia Pty Ltd and Macquarie Capital (Australia) Limited are acting as Joint Lead Managers and Joint Underwriters to the Placement and Institutional Entitlement Offer.

#### **Equity Raising**

As noted above, the acquisition will be partially funded by an equity raising of new fully paid ordinary IGO shares (**New Shares**) to certain eligible investors to raise up to A\$766 million at an issue price of A\$4.60 per share (**Offer Price**). The Equity Raising is being launched today comprising of:

- A\$446 million fully underwritten Placement of up to 97.0 million New Shares in IGO
- A 1 for 8.5 accelerated pro rata non-renounceable entitlement offer of up to 69.5 million New Shares to raise up to approximately A\$320 million. The Institutional Entitlement Offer (A\$256 million) is fully underwritten.

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<sup>&</sup>lt;sup>10</sup> Dependent on take-up of the Retail Entitlement Offer.



IGO has been granted an ASX Waiver of Listing Rule 7.1 to enable expanded Placement capacity given the institutional component of the Entitlement Offer is fully underwritten.

Approximately 166.5 million New Shares to be issued under the Offer representing approximately 28% of current issued capital of IGO.

The Offer price of A\$4.60 per share represents a:

- 7.7% discount to the theoretical ex-rights price (TERP) of A\$4.99 on 7 December 2020<sup>11</sup>
- 9.7% discount to IGO's last traded price of A\$5.095 on 7 December 2020.

Each New Share issued under the Offer will rank equally with existing fully paid ordinary shares in IGO on issue. IGO will, upon issue of the New Shares under the Offer, seek quotation of the New Shares on the ASX.

Under the Entitlement Offer, eligible shareholders are invited to subscribe for one New Share for every 8.5 existing shares held as at 7:00pm (Sydney time) on Friday, 11 December 2020 (**Record Date**). Eligible institutional shareholders will be invited to participate in the Institutional Entitlement Offer, which is being conducted today, Wednesday, 9 December 2020, along with the Placement.

The retail component of the Entitlement Offer (**Retail Entitlement Offer**) will be open from Tuesday, 15 December 2020 to Friday, 15 January 2020 to eligible retail shareholders with a registered address in Australia or New Zealand as at 7:00 pm (Sydney time) on the Record Date. A retail offer booklet in respect of the Offer has been lodged with the ASX today and is expected to be mailed to eligible retail shareholders on Tuesday, 15 December 2020. Eligible retail shareholders will also be invited to subscribe for shares over and above their entitlement, subject to the overall level of participation in the Entitlement Offer.

The Entitlement Offer is non-renounceable, and entitlements will not be tradeable or otherwise transferable.

All directors of IGO who are shareholders of IGO have indicated they intend to participate in the Entitlement Offer. Mark Creasy, IGO's largest shareholder (13%) has also committed to take up A\$20 million of his entitlements.

Placement.

Offer will depend on many factors and may not equal the TERP. The TERP also includes New Shares to be issued under the

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<sup>11</sup> TERP is the theoretical price at which IGO shares should trade immediately after the ex-date for the Entitlement Offer. The TERP is a theoretical calculation only and the actual price at which IGO's shares trade immediately after the ex-date for the Entitlement



## **Timetable**

Event	Date
Announcement of Equity Raising	Wednesday, 9 December 2020
Placement and Institutional Entitlement Offer Opens	Wednesday, 9 December 2020
Announcement of results of Placement and Institutional Entitlement Offer	Thursday, 10 December 2020
Trading halt lifted and shares recommence trading	Friday, 11 December 2020
Entitlement Offer record date	7:00pm AEDT, Friday, 11 December 2020
Retail Entitlement Offer opens and Retail Offer Booklet dispatched	Tuesday, 15 December 2020
Settlement of New Shares issued under the Placement and Institutional Entitlement Offer	Thursday, 17 December 2020
Allotment and commencement of trading of New Shares under the Placement and Institutional Entitlement Offer	Friday, 18 December 2020
Retail Entitlement Offer closes	Friday, 15 January 2021
Announcement of results of Retail Entitlement Offer	Tuesday, 19 January 2021
Settlement of New Shares issued under the Retail Entitlement Offer	Friday, 22 January 2021
Allotment of New Shares under the Retail Entitlement Offer	Friday, 22 January 2021
Commencement of trading of New Shares issued under the Retail Entitlement Offer	Monday, 25 January 2021
Holding statements in respect of New Shares issued under the Retail Entitlement Offer dispatched	Monday, 25 January 2021

#### **Advisors**

IGO is advised by BurnVoir Corporate Finance as Debt Adviser, Herbert Smith Freehills as Legal Advisor and Standard Chartered Bank as Financial Advisor in relation to the Transaction.

# **Further information**

Further details of the Offer are set out in the Investor Presentation also lodged on the ASX today (9 December 2020). The Investor Presentation contains important information including key risks and foreign selling restrictions with respect to the Offer.



#### Investor call and webcast

An investor call and webcast has been scheduled for 8.00am AWST (11.00am AEDT), Wednesday, 9 December 2020. Dial-in details for the call and the webcast link can be found below.

#### Participant telephone numbers

#### Participants can register for the conference call by navigating to:

#### https://s1.c-conf.com/DiamondPass/10011442-gh34Rz.html

Please note that registered participants will receive their dial in number upon registration. Pre-registration fields of information to be gathered: Full Name, Company

#### Webcast link

Participants can view the webcast by navigating to:

#### https://78449.choruscall.com/dataconf/productusers/macquariecap/mediaframe/42494/indexr.html

Please note it is best to log on at least 5 minutes before 8.00am AWST (11.00am AEDT) on Wednesday, 9 December 2020 to ensure you are registered in time for the commencement of the presentation.

Investors are advised that, in addition to the live webcast, a recording of the presentation will be available on the IGO website (<a href="www.igo.com.au">www.igo.com.au</a>) approximately one hour after the conclusion of the webcast.

#### **About Tianqi**

Listed on the Shenzhen Stock Exchange (SZSE: 002466), Tianqi is a leading global lithium chemicals company with a market capitalisation of US\$4.5 billion.

Founded in 1997 by Chairman Mr Jiang Weiping, Tianqi's operational footprint extends across lithium resource development and extraction, downstream production processing and trading. Tianqi produces a diverse range of high-quality lithium products including lithium hydroxide, lithium carbonate, lithium chloride, lithium metal and mineral concentrates.

Tianqi has a well-established presence in China, Australia and the Americas, from where it services customers globally. Tianqi also owns a 25.86% interest in Sociedad Quimica y Minera de Chile S.A (SQM), a leading global integrated producer of lithium, plant nutrition and industrial chemicals.

Tianqi intends to use proceeds from the Transaction to recapitalise its balance sheet and refinance its existing debt facilities in preparation for the next phase of the company's growth.

More information can be found at en.tianqilithium.com.

This announcement is authorised for release to the ASX by the IGO Board of Directors.

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Ore Reserve Estimate and Mineral Resource Estimate for Greenbushes – information required under ASX Listing Rules 5.8 and 5.9

#### MINERAL RESOURCE ESTIMATES

Chapter 5 of the ASX listing rules requires that IGO provide for each Mineral Resource Estimate (**MRE**) reported to the ASX, descriptions of the geology and mineralisation, sampling, sub-sampling methods and drilling techniques, sample analysis method(s), estimation methodologies, the criteria used for JORC Code classification of the estimates, cut-off grade information including the basis, along with assumed mining and metallurgical methods and other material modifying factors applied to the MREs.

# **Geology and Mineralisation**

The Greenbushes Central Lode Deposit is one of the world's largest and highest lithia grade hard rock deposits. The Central Lode is a large steeply northwest dipping, spodumene rich pegmatite body, that intruded along the Donnybrook-Bridgetown shear zone ~2.53Ga years ago into the older and largely lithium-barren, high grade metamorphic country rocks of amphibolite and granofels of the Balingup Metamorphic Belt. The tectonic history of the region is complex, with up to four phases of correlated deformation and metamorphism recognised in the technical literature. The pegmatite is interpreted to have intruded around the time of the second major tectonic event and was subsequently crosscut by later east-west dolerite intrusives prior to the fourth event. All rocks have been weathered to depths of ~40m below the current natural surface.

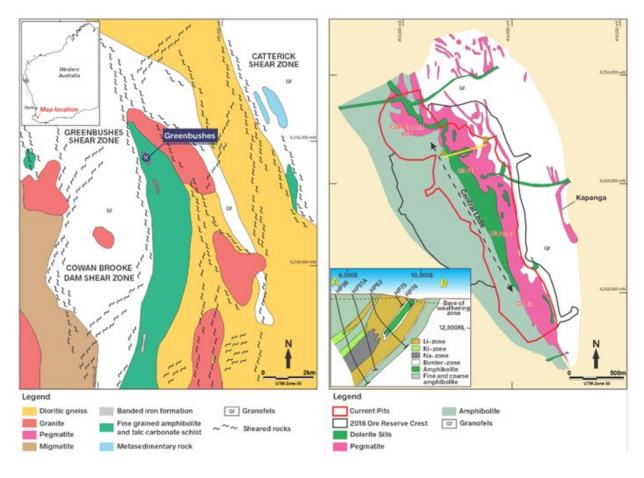


Figure 1: Greenbushes regional and local geology

The Greenbushes lithia bearing pegmatites present as a series of linear dykes and/or en echelon pods that range from a few metres in strike length up to 3km, and with true thicknesses ranging from a few metres to 300 metres. The pegmatites have intruded at the boundaries between the major sequences of country rocks. Several mineral compositional zones are recognised, with lithia rich zones observed to occur preferentially



on the footwall and hangingwall zones of the Central Lode pegmatite. Tin and tantalum rich mineralisation occurs in the albite zone of the pegmatite. This style of mineralisation was the motivation for the historic open pit mining at Greenbushes, which occurred mainly from the nearly completed Cornwall Pit. The high-grade lithia zones of the Greenbushes pegmatite comprises mostly spodumene, apatite and quartz, with some parts of the zone hosting up to 50% of the lithia bearing mineral spodumene, which contains ~8% Li2O.

The Greenbushes TSF1 (Tailings Storage Facility #1) MRE is the processing residue from earlier phases of tin and tantalum mining and processing from the Central Lode deposits. As such, the tailings have similar mineralogy to the Central Lode pegmatite. The TSF1 'geology' is characterised by a ~7m thick upper layer of higher lithia grade 'enriched' tailings overlying a ~7.5m lower grade 'depleted' layer, which in turn overlies the pre-existing natural surface clay layer.

# Drilling, sampling, sub-sampling and assaying methods

Talison Lithium Pty Ltd (Talison) estimated the 31 March 2018 MRE for the Greenbushes Central Lode Deposit using samples collected from reverse circulation percussion (RC) and diamond core drill (DD) holes. The TSF1 estimate, with the same effective date of 31 March 2018, is based on samples collected by sonic drilling (SD).

The Central Lode MRE is based on the data from 331 DD holes and 514 RC holes drilled from surface, and a further 228 DD holes drilled from underground workings. The 31 March 2018 Central Lode MRE is based on all drill hole data available to 31 December 2017. Some holes in the database date back to the 1970s but most information is relatively recent. The drill hole information for the Central Lode provides geoscientific information on a ~25m to ~50m cross section spacing north to south. Talison reports that the RC and DD sample recoveries are high, with near 100% recovery recorded for fresh pegmatite. Some triple tube drilling has been used to ensure good recovery in areas of broken ground. The drill hole methods used by Talison are consistent with industry norms for the style and geometry of the mineralisation under consideration and are considered a reasonable basis for MRE work.

TSF1 was sampled using short vertical SD holes, which is a drilling method that achieves very good sample recovery in unconsolidated materials such as processed tailings. The SD holes were collared on a ~200m square pattern over the ~1km by 0.7km horizontal dimensions of TSF1. This spacing is considered reasonable for estimation purposes given the fine-grained nature of the tailings mineralisation and its horizontal stratification in TSF1.

The primary sample collected from DD and SD sampling was a half-core sample, while from RC sampling a splitter was used to collect a representative split of 3-5kg from the drill cuttings. The typical downhole sampling interval was 1m for DD and RC and 1.5m downhole from the SD.

Apart from very early sampling programs, all assaying has been completed at the operation's on-site, ISO9002 certified laboratory. MRE samples were dried and crushed, then a ~1kg sub sample was collected by splitter for pulverising. For lithia analysis an aliquot of the pulp was digested using a sodium peroxide solution, with the digested concentration of lithia determined by atomic absorption spectroscopy. A suite of 36 accessory analytes were determined using fusion digestion of a pulp aliquot and X-ray fluorescence analysis of the fusion bead. However, only lithia is estimated in the MREs.

Talison reports that the Greenbushes sample quality control systems have improved over time with routine industry practices applied. Since 2007, Talison's quality control protocols have included collecting replicate samples to quantify precision and blind submission of known grade reference materials to quantify accuracy. Combined with good mine to model reconciliation results to date, the quality control information confirms that the assay information has acceptable precision and accuracy for MRE work.

Talison has determined the in-situ densities of key rock types from DD samples from the Central Lode and from SD cores from TSF1. The density of fresh rock pegmatite is correlated to lithia concentration and a linear regression has been used to assign density to pegmatite in the MRE model for the Central Lode.



Mean density values are applied to the waste rock types based on mining survey and trucking information. Oxide rock density has also been assigned based on mining reconciliation data. The density of the TSF1 mineralisation is based on the mean density of five SD core samples.

Further details regarding drilling, sampling, sub-sampling and assaying are included in the JORC Code Table 1 Appendix.

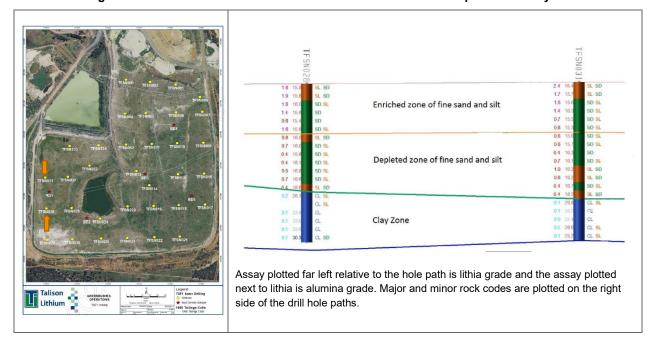


Figure 2: TSF1 SD drill hole locations and Talison's sectional interpretation of layers

# **Estimation Methodology**

Talison prepared the 31 March 2018 Greenbushes MREs using industry conventional methods of digital block modelling in an industry-recognised software system. The geological estimation zones of the deposit were prepared by Talison's geologists, who used wireframing to model the Central Lode pegmatite, the higher-grade mineralised pegmatite at >0.7% Li2O threshold, the cross-cutting barren dykes, a surface to model the base of weathering, and a surface topographic survey including the pit surface at 31 March 2018. The TSF1 MRE was constrained by the surveys of the volumetric limits of the tailings and surface wireframes for the upper and lower limits of the tailings enriched and depleted zones.

The sample data sets for the MREs were composited to uniform lengths. Block model lithia grades were estimated by Talison using ordinary block kriging for the Central Lode estimate, and inverse distance squared weighting estimation for the TSF1 estimate. Grades of lithia were estimated both inside and outside the >0.7% Li2O volume with separate sub-domains created to accommodate local orientation changes in the pegmatite geometry along the strike of the Central Lode. A small zone of technical grade resource was modelled using combined high lithia and low iron criteria. The estimation parameters and controls applied by Talison are consistent with industry norms for the style of deposit under consideration – readers should refer to the JORC Code Table 1 Appendix for more details.

Talison validated the MREs using on-screen inspection comparisons of input sample grades and output block estimates to confirm that input data grade trends were reproduced acceptably in the MRE models. Statistical checks were also completed, such as confirming input and output local and global mean grades had reasonable agreement. The ore mined to process comparison for the Central Lode mining to date is



very good, with Tailson reporting the 2018 MRE forecasts for the 12 months of mining prior to 31 March 2018 were within 6% relative of tonnages received to the mill and within 3% of reconciled contained lithia.

Talison assigned the Central Lode block model mineralisation densities using a regression equation based on lithia grade, and Talison assigned the waste rocks and the oxide zone based on reconciled mining data. The density of TSF1 MRE was assigned from the mean density of the available SD samples. Further estimation details are included in the JORC Code Table 1 Appendix.

# **JORC Code classification and reporting**

Talison assigned JORC Code Mineral Resource classifications to the block model estimates, giving due consideration to data quality, grade continuity and geology, with data spacing being a primary driver in the classification process.

Talison has classified most of the Central Lode estimate as JORC Code Indicated Mineral Resources, with only a small tonnage of Measured Mineral Resources assigned to the mined ore stockpiles available at 31 March 2018. Deeper and peripheral parts of the deposit, where the average drill spacing is wider, have been classified as Inferred Mineral Resources. The Central Lode MRE, listed below, is reported effective from 31 March 2018 using a >0.5% Li2O block model cut-off grade within the volume of a 'break-even' open pit optimisation shell.

#### **Central Lode JORC Code Mineral Resource Estimate**

JORC Code Classification	Mass (Mt)	Grade (Li₂O%)
Measured Resource	0.2	3.0
Indicated Resource	169.4	2.0
Inferred Resource	8.9	1.3
Total	178.5	2.0

#### Notes:

- Reported >0.5% Li<sub>2</sub>O block model cut-off effective from 31 March 2018
- Numbers have been rounded so totals may apparently not tally correctly
- Inside a break-even pit optimisation shell
- The estimate has not been depleted for mining after 31 March 2018; Tianqi advised that to 30 June 2020 5.2Mt grading 2.71%  $\rm Li_2O$  has been processed from the 31 March 2018 estimate

Talison classified the 31 March 2018 TSF1 MRE as JORC Code Indicated Mineral Resource, and reported the estimate using a 0.7% Li2O block model cut-off grade. Separate estimates for the TSF1 upper enriched and lower depleted zones are listed below.

**TSF1 JORC Code Mineral Resource Estimate** 

JORC Code Classification	Mass (Mt)	Grade (Li₂O%)
Indicated Resource (enriched)	13.5	1.46
Indicated Resource (depleted)	4.9	0.78
Total	18.3	1.28

#### Notes:

- Reported >0.7% Li $_2$ O block model cut-off effective from 31 March 2018
- Numbers have been rounded so totals may apparently not tally correctly
- The estimate is in situ with no mining depletion



# **Cut-off grade and modifying factors**

The MRE reporting cut-off grades of >0.5% Li2O for the Central Lode and >0.7% Li2O for TSF1 approximate the respective break-even grades and respective mineral processing routes for each estimate using product prices, total costs and metallurgical recoveries which were prevailing at the time the estimate was prepared.

The key JORC Code Modifying Factors assumed for the Central Lode MRE are conventional open pit mining by drill, blast, load and haul for the Central Lode and saleable concentrate extraction through the existing and planned expansion processing plants at the Greenbushes Operation. The TSF1 resource will be extracted using free digging, then load and haul to a tailings retreatment plant that is currently under construction near TSF1.

Further details are given below under the Ore Reserve description relating to the materiality of metallurgical and environmental modifying factors and in the JORC Code Table 1 Appendix.

#### ORE RESERVE ESTIMATES

Talison has prepared the Ore Reserve Estimates (OREs) for the Greenbushes Operation using Talison's considerable experience at the current mining and processing operation. Talison's in-house feasibility studies have confirmed that the life-of-mine (LOM) plan covering the ORE is technically feasible and economically viable after all material Modifying Factors of the prevailing JORC Code have been considered.

The ASX Chapter 5 listing rule Section 5.9 requires for first time reporting of an ORE that IGO provide a summary of the material assumptions and outcomes from either the preliminary feasibility study or feasibility study, including the economic assumptions, criteria used for classification of the ORE into JORC Code classes, mining method and mine recovery and dilution factors, the assumed processing method and assumptions including metallurgical recovery factors, the basis for the reporting cut-off grade, estimation methodology and material Modifying Factors, including approvals, governmental factors, infrastructure requirements for the selected mining and processing methods, and for transportation of saleable products to market.

## Basis of estimates, study status and reporting cut-off parameters

Talison prepared the ORE for each deposit using the MRE models described above, with the Central Lode model depleted for mining to 31 March 2018. The MREs are reported inclusive of the OREs for both deposits. The TSF1 ORE only considers mining and processing of the upper Enriched Zone.

The Greenbushes short to medium term ORE studies were based on prevailing operating budgets and forecasts and as such were equivalent to or better than a Feasibility Study as defined in the JORC Code. Talison prepared several in-house Feasibility Studies for proposed process plant expansions including high-level process designs, contractor mining estimates, assessment of administration and product supply chain costs, and preliminary capital and sustaining cost estimates for the proposed new plants. The level of uncertainty of the information used is appropriate to convert JORC Code Measured Mineral Resources to Proved Ore Reserves and Indicated Mineral Resources to Probable Ore Reserves as listed further below.

#### **Central Lode JORC Code Ore Reserve Estimate**

JORC Code Classification	Mass (Mt)	Grade (Li₂O%)
Proved Reserve	0.2	3.0
Probable Reserve	133.0	2.1
Total	133.1	2.1

#### Notes:

- Reported >0.7% Li<sub>2</sub>O block model cut-off effective from 31 March 2018
- Numbers have been rounded so totals may apparently not tally correctly



- The estimate has not been depleted for mining after 31 March 2018; Tianqi advised that to 30 June 2020 5.2Mt grading 2.71%  $\rm Li_2O$  has been processed from the 31 March 2018 estimate

#### **TSF1 JORC Code Ore Reserve Estimate**

JORC Code Classification	Mass (Mt)	Grade (Li₂O%)
Indicated Resource (enriched)	10.13	1.42
Total	10.13	1.42

#### Notes:

- Reported >0.7% Li<sub>2</sub>O block model cut-off effective from 31 March 2018
- Numbers have been rounded so totals may apparently not tally correctly
- The estimate is in situ with no mining depletion

The ORE reporting block model cut-off of >0.7% Li2O applied by Talison approximated the break-even grade under market conditions prevailing at the time of estimation preparation. The details of the full cut-off calculation contain several commercially confidential details that cannot be included in a Public Report. However, the JORC Code Table 1 Appendix includes detail for readers to understand the key inputs to the cut-off selection.

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Resource Shall
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SECTION 12300mN

Figure 3: Central Lode ORE pit design and example cross section

# Mining and metallurgical assumptions and modifying factors

Mining assumptions for the ORE exploitation are that conventional open pit mining would continue using the current mining contractors for drill and blast, load and haul and grade control drilling. The Central Lode open pit mining has been scheduled in several logical cut-backs with the design considering the well understood geotechnical and geohydrological conditions of the current mining operation. The life of mine (LOM) of the ORE is ~20 years.

Any Inferred Mineral Resources included in the LOM pit design were excluded from the Central Lode ORE and treated as waste. For TSF1, mining is expected to be by free digging and haulage to a dedicated



treatment plant near TSF1. Only the top ~7m of the enriched zone is in the LOM plan and Talison has assumed 0.2m of ore losses due to vegetation at surface, and a 3:1 stand-off distance from the TSF walls. Dilution from the underlying depleted zone is expected to be in the order of 0.2m.

Greenbushes Operation currently has three processing plants with one plant (TGP1) producing ~150kt/a of technical grade concentrate (grading from 5.0-7.2% Li2O) and two plants (CGP1 and CGP2) with combined production of ~1,200kt/a of chemical grade concentrates (grading 6.0% Li2O). The tailings retreatment plant (TRP) is under construction with planned production of ~280kt/a of chemical grade concentrate with commissioning planned during 2022. Two additional chemical grade plants are planned to be constructed and ramped up with the first commissioned in 2024 (CGP3) and the second commissioned in 2027 (CGP4). According to Talison's 2018 Feasibility Study each plant is expected to produce ~520kt/a of chemical grade concentrate. Talison has considerable expert experience in the preparation of saleable concentrates using well tested processing flowsheets. Detailed metallurgical testing has been completed on the TSF1 ore while the process response from the Central Lode ore is well understood. The LOM metallurgical recoveries are based on historical performance of the processing plants.

The planned plant expansions will significantly increase process water demand from the current surface run-off dams and there are no known subsurface water sources for process water. Talison is in the process of assessing additional water supply and can reasonably expect approvals will be granted for expanded surface water harvesting and is also implementing strategies to reduce water losses in the process circuits. Water supply is a key factor for process expansion.

#### **Environmental and infrastructure**

Tianqi has confirmed to IGO that there are no environmental or infrastructure restrictions existing or anticipated that would limit the proposed production expansions. Long-term waste dumping areas are somewhat restricted but manageable. The tailings from the TRP will be directed to the current TSF2. On completion of mining of the ORE from TSF1, the void will be used as tailing storage for the operation, and ultimately TSF1 will be buried by waste rock dumping. A fourth TSF has been identified in the longer-term LOM.

The local infrastructure is good with sealed road access nearby the operation for saleable product road haulage to customers. The operation is only ~90km SE of the Port of Bunbury, and ~250km south of Perth. Talison is investigating power upgrades for the proposed new processing plants and is applying for permits for waste dump expansions. Talison considers that no other significant infrastructure is required and all sustaining capital costs for infrastructure are included in Talison's ORE financial model.

# Costs, revenue, market assessment, economic and social factors

Costs were based on current mining operations, and processing costs were derived from the prevailing operations budgets at the time of the ORE preparation. IGO understands from Tianqi that the operating cost for CY19 averaged A\$271/t of concentrate. Talison has used its experience in the recent construction of its second chemical grade plant to estimate the capital costs for two additional plants. Tailson pays a WA State royalty of 5% of the sales value of concentrates after allowable deductions for shipping costs to offshore customers.

Talison's revenue forecasts were based on Talison's current sales contracts and forecasts by reputable advisors as to future prices at the time of ORE preparation. For the 31 March 2018 ORE, Talison expected chemical grade product prices would increase over the next few years due to the expected increasing world demand for rechargeable batteries. For its in-house Feasibility Studies and for the Central Lode pit optimisation, Talison applied a 7% discount rate per annum to cash flows in the LOM plan, a 0.79 AUD:USD



exchange rate and an \$A1,605/t net value for chemical grade concentrates. An inflation rate of 2.5% was assumed for process and costs.

The capital expenditure for expansion plants CGP3 and CGP4 in Talison's June 2018 in-house Feasibility Study was estimated to be A\$893.6 million to construct both plants.

For the 31 March 2018 ORE, Talison considered the market outlook was very positive with expected rapid increases in lithium demand up to 2026, then demand flattening. Talison expected to increase sales volumes by up to 29%. The proposed expansions would increase process production rate to at least 9Mt/a of ore producing more than 2Mt/a of saleable concentrate. Talison's methods of forecasting product prices and exchange rates are consistent with industry practices and based on data sourced from reputable forecasters.

Talison has strong working relationships with the local communities and its Greenbushes workforce is mostly sourced from nearby towns. Talison considered these relationships provide a sound social licence to operate and expand production as projected in the LOM plans. There are no material naturally occurring risks to the operation, and Tianqi has confirmed to IGO that it considers there are no material issues in relation to legal and marketing agreements and there are reasonable grounds to expect all necessary approvals for proposed expansions will be granted within the timeframes of the in-house Feasibility Studies.

#### JORC Code classification and external reviews

Talison has classified the Greenbushes OREs after consideration of all material Modifying Factors as described in the prevailing JORC Code. Measured Mineral Resources (ore stockpiles only) were directly converted to Proved Ore Reserves and Indicated Mineral Resources were converted to Probable Ore Reserves after application of factors for ore loss and dilution. No part of the OREs are derived from Inferred Mineral Resources.

Greenbushes have recently been reviewed by well-respected independent external reviewers who concluded that the MRE and ORE estimates for the operation were consistent with the requirements of the prevailing JORC Code and that reasonable prospects of eventual economic extraction have been demonstrated.

#### **Competent Persons**

The table below is a listing of the names of the Competent Persons (as defined by the JORC Code) who are taking responsibility for the JORC Code reporting to the ASX of the Greenbushes MREs and OREs for the purposes of this Public Report. Both Competent Persons are members of IGO's due diligence team that reviewed the MREs and OREs of the Greenbushes Operation through site visits, desk top assessment of due diligence data provided by Tianqi and interactions with several well-respected external consultants, who provided expert opinions that the Competent Persons have relied upon for assessment of certain Modifying Factors such as metallurgy, environment, infrastructure and other fields outside their core expertise.

The Competent Person listing includes details of professional memberships, professional roles, and the reporting activities for which each person is accepting responsibility for the accuracy and veracity of the information related to the Publicly Reported Mineral Resources and Ore Reserves of the Greenbushes Operation effective of 31 March 2018. Each Competent Person has provided IGO with a sign-off for the relevant information provided by each contributor in this report.



Activity Competent Person		Professional association		IGO	Responsible
		Membership	Number	relationship	activity
Mineral Resource Estimates	Mark Murphy	MAIG/RPGeo	2157/10039	Resource Geology Manager (IGO)	Mineral Resource assessment
Ore Reserve Estimates	Gregory Laing	MAusIMM	206228	Strategic Mine Planner (IGO)	Ore Reserve assessment

- MAusIMM = Member of the Australasian Institute of Mining and Metallurgy
- MAIG/RPGeo = Member of the Australasian Institute of Geoscientists and Registered Professional Geoscientist
- Both Competent Persons are full-time employees of IGO and were part of the due diligence team for the assessment of the Greenbushes Operation
- The information in this presentation Public Report that relates to Mineral Resource Estimates is based on and fairly represents, information and supporting documentation compiled by Mr Mark Murphy. The information in this Public Report that relate to Ore Reserve Estimates is based on and fairly represents, information and supporting documentation complied by Mr Gregory Laing.
- Both Competent Persons have provided IGO with written confirmation that they have sufficient experience that is relevant to
  the styles of mineralisation and types of deposits, and the activity being undertaken with respect to the responsibilities listed
  above, to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting Exploration
  Results, Mineral Resources and Ore Reserves The JORC Code
- · Each Competent Person listed above has provided to IGO by e-mail:
  - Proof of their current membership to their respective professional organisations
  - A signed consent to the inclusion of information for which each person consents to the disclosure of the matters in this
     Public Report based on their responsible activity in the form and context in which it appears in the Public Report, and that
     the respective parts of this report accurately reflect the supporting documentation prepared by each Competent Person
     for the respective responsibility activities listed above.
  - Confirmation that there are no issues that could be perceived by investors as a material conflict of interest in preparing the reported information

#### **Disclaimer**

This announcement does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States or any other jurisdiction in which such an offer or solicitation would be illegal. Neither the Entitlements nor the New Shares have been, or will be, registered under the U.S. Securities Act of 1933, as amended ("U.S. Securities Act") or the securities laws of any state or other jurisdiction of the United States. Accordingly, the Entitlements may not be exercised or taken up by, and the New Shares may not be offered or sold, directly or indirectly, to, persons in the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act and any other applicable securities law of any state or other jurisdiction of the United States.

This announcement may not be released or distributed in the United States.

This announcement contains certain "forward-looking statements", including but not limited to projections, guidance on future revenues, earnings, margin improvement, other potential synergies and estimates, the timing and outcome of the Transaction, the outcome and effects of the Entitlement Offer and the use of proceeds, and the future performance of IGO post Transaction. Forward-looking statements can generally be identified by the use of forward-looking words such as 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target', 'outlook', 'guidance', 'potential' and other similar expressions within the meaning of securities laws of applicable jurisdictions and include, but are not limited to, statements relating to the impact of the Transaction, the future performance and financial position of IGO, estimated synergies, the outcome and effects of the Entitlement Offer and the



use of proceeds. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements.

The forward-looking statements contained in this announcement are not guarantees or predictions of future performance and involve known and unknown risks and uncertainties and other factors, many of which are beyond the control of IGO, its Directors and management, and may involve significant elements of subjective judgment and assumptions as to future events which may or may not be correct. There can be no assurance that actual outcomes will not differ materially from these forward-looking statements. No representation or warranty, express or implied, is made as to the accuracy, likelihood of achievement or reasonableness of any forecasts, prospects, returns or statements in relation to future matters contained in this announcement. The forward-looking statements are based on information available to IGO as at the date of this announcement. To the maximum extent permitted by law, IGO and its Directors, officers, employees, advisers, agents and intermediaries disclaim any obligations or undertakings to release any updates or revisions to the information to reflect any changes in expectations or assumptions.

Nothing contained in this document shall form the basis of any contract or commitment, or constitute investment, legal, tax or other advice. You should make your own assessment and take independent professional advice in relation to the information and any action taken on the basis of the information.

#### Ore reserve and mineral resource estimates – basis for preparation

Prior to this announcement, the Ore Reserve estimates (ORE) and Mineral Resource estimates (MRE) for the Greenbushes Central Lode deposit and Tailings Storage Facility 1 (TSF1) had not been Publicly Reported to the Australian Stock Exchange (ASX).

Whilst the MRE and ORE set out in this announcement reference estimates that were prepared by Talison's technical experts, IGO notes that Talison's technical experts have not reviewed, signed-off or consented to the disclosure of the MRE and ORE in this announcement.. The MRE and ORE in this announcement are based on, and fairly represents, information and supporting documentation prepared by the Competent Persons referred to above in accordance with the requirements of ASX Listing Rule 5.22 and the JORC Code. Those IGO personnel have been closely involved in IGO's due diligence for the transaction and had access to the detailed digital data rooms prepared for the transaction by Tianqi (as well as visiting the site to understand the context of the information for the respective MRE and ORE JORC Code sign-offs).

Investors should be aware that the IGO's sole economic interest in Greenbushes is pursuant to the transaction and that IGO will not acquire an ownership interest in Greenbushes unless and until completion of the transaction occurs.



# ATTACHMENT 1 - JORC TABLE 1 CHECKLIST

	Section 1 – Greenbushes – Sampling and Data
Compatible	
Sampling techniques	<ul> <li>Talison Lithium Pty Ltd (Talison) has drill-sampled the Greenbushes Central Lode and Tailings Storage Facility 1 (TSF1) Mineral Resource estimate (MRE) volumes, with the Central Lode drilled by reverse circulation percussion (RC) drilling and diamond core drilling (DD). The TSF1 MRE volume was drilled using sonic drilling (SD).</li> <li>The holes drilled from surface at the Central Lode have collar spacings ranging from 25m to 50m across and along strike. The DD holes drilled from underground workings at the northern end of the Central Lode have a close spaced pattern, fanning out from the workings.</li> <li>Apart from a few holes drilled to collect geotechnical information, the holes drilled from surface generally plunge towards local mine grid east to intersect the mineralisation at a high angle.</li> <li>For the 31 Mar 2018 Central Lode MRE, the drill hole database included 1,073 drill holes for a total length drilled of 160,232m, and comprised 502 RC holes with the remainder being DD. The final drilling database contained 76,478 assayed intervals.</li> <li>The 34 SD holes drilled for the TSF1 MRE (31 Mar 2018) were drilled on an approximately 200m square collar spacing for 759m of drilling.</li> </ul>
Drilling techniques	<ul> <li>RC drilling using face-sampling bits was used for shorter near-surface holes with hole diameters of either 5½ inch (140mm) or 5½ inch (133mm).</li> <li>DD has been used for deeper holes and for drilling from underground platforms, with a few diamond tail extensions drilled from RC pre-collars. Triple tube DD has been used in areas of broken ground to improve core recovery.</li> <li>The core from some DD holes drilled to collect data for geotechnical studies has been oriented.</li> <li>The DDs drilled for MRE work include several different core diameters including 36.4mm (BQ), 47.6mm (NQ) and 63.5mm (HQ2, HQ3).</li> <li>The TSF1 MRE drilling comprised SD to collect 3-inch (76.2mm) cores.</li> </ul>
Drill sample recovery	<ul> <li>RC recovery:</li> <li>Selected RC holes have had the cuttings from 1m downhole intervals weighed over the entire hole length to provide data for assessment of the expected mass against the actual recovered mass. A few of the older RC holes have had samples collected over 2m down hole intervals.</li> <li>Generally RC recovery is logged qualitatively as 'good' to 'poor' with recovery generally logged as 'good' except for samples collected within the first few metres from surface.</li> <li>The lithia grades from nearby RC and DD holes have been compared to assess the potential for grade bias due to RC fines losses. No material biases have been identified.</li> <li>DD recovery:</li> <li>DD recovery has been measured as the percentage of the total length of core recovered compared to the drill interval.</li> <li>Core recovery is consistently high (95-100%) in fresh rock with minor losses occurring in heavily fractured ground or for DD drilling in the regolith.</li> <li>Triple tube DD has been used to maximise recovery in zones of broken ground.</li> <li>Recovery monitoring and triple tube drilling are the main methods used to maximise recovery.</li> <li>The TSF1 SD recovery was very high – effectively 100%.</li> <li>There is no relationship between sample recovery and lithia grade in any of the drill methods used and the potential for upgrade or downgrade of samples due to partial sample losses is considered low risk.</li> </ul>
Logging	<ul> <li>RC cuttings and DD and SD cores have been logged geologically and geotechnically with reference to a logging standard library, to levels of detail that support MRE work, Ore Reserve estimation (ORE) and metallurgical studies.</li> <li>Qualitative logging includes codes for lithology, regolith, and mineralisation for RC, DD and SD samples, with sample quality data recorded for RC such as moisture, recovery, and sub-sampling methods.</li> <li>DD cores are photographed, qualitatively structurally logged with reference to orientation measurements where available.</li> <li>Logs for older holes have not yet been converted to digital format with only lithia and tantalum assay data available digitally for the current estimate.</li> <li>Geotechnical quantitative logging includes QSI, RQD, matrix and fracture characterisation.</li> <li>The total lengths of all drill holes have been logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>RC:</li> <li>RC samples were collected from a splitter (riffle, static cone and rotary cone) that collected a 3-5kg split of the primary lot from each downhole sampling interval.</li> <li>Most samples collected were dry.</li> <li>The main protocol to ensure the RC samples were representative of the material being collected was monitoring of sample recovery and more recently, collection and assay of 5% replicates of primary samples.</li> <li>DD:</li> <li>DD cores samples have been collected over intervals determined by geological boundaries but generally targeting a 1m length within the same zone of contiguous geology.</li> <li>Cores were generally half-core sampled with the core cut longitudinally using a core saw having a wet diamond impregnated cutting blade. Some of the larger diameter HQ core collected for metallurgical test was quarter core sampled.</li> <li>SD:</li> <li>The TSF1 SD sample intervals are 1.5m down hole with the SD core captured in half PVC pipe and cut with a blade or wire to prepare a half-core tailings sample.</li> <li>Laboratory preparation:</li> <li>RC, DD and SD samples were delivered in pre-numbered sample bags to Talison's on-site laboratory, with the sample chain-of-custody from the drill site to the laboratory managed by the mine site technical staff.</li> <li>The laboratory then took over the chain-of-custody and used an internal digital tracking system for sample management.</li> <li>The samples were then oven dried for 12 hrs at ~110°C before being crushed to a particle size distribution (PSD) of 100% passing 5mm.</li> <li>A riffle, or more recently a rotary splitter, was then used to collect a ~1kg sub-sample from the crushed lot.</li> </ul>



#### Section 1 - Greenbushes - Sampling and Data For samples deemed likely to represent technical grade (TG) mineralisation (which must be low in iron concentration), the crushed lots were pulverised using tungsten grinding bowls, otherwise non-TG samples were pulverised using standard steel grinding bowls. - Following pulverising, a pulp sub-sample was collected into a small packet to serve as the assaying source lot. Quality controls: - All laboratory sample preparation was carried out by trained technicians who followed the specified laboratory procedures for each sample preparation workflow. - The laboratory inserted blanks and certified reference materials at a 1:20 frequency in every batch with a duplicate pulp collected for assay every 20th sample. Sample pulps are retained for future reference and coarse rejects are discarded. Talison's reviews of quality sample results confirm that the levels of precision, accuracy and levels of potential sample cross contamination are acceptable for MRE work. The precision half absolute relative difference values for field duplicates having grades ≥0.2% Li<sub>2</sub>O is less than ±10% relative for 85% of replicates collected since 2016. · Sample size versus grain size: - Lithia bearing spodumene typically comprises between 15-55% of the mineralisation, and as such is in relatively high concentration. While no specific heterogeneity tests have been completed, the sample sizes collected at the primary and sub-sampling stages are consistent with industry norms for the style of mineralisation under consideration. No geophysical tools have been used to determine any analyte concentrations for MRE work. Quality of assay data and A small aliquot of the sample preparation pulp was collected and digested in sodium peroxide and the resulting solution concentration of lithia laboratory determined using atomic absorption spectroscopy. tests A suite of 36 accessory analytes were also determined using fusion digestion and X-ray fluorescence, however these additional analytes are not included in the Publicly Reported MRE, albeit iron grade has been used to assist in the interpretation of zones of TG mineralisation. Verification of Significant drill hole intersections of mineralisation have been routinely verified by Talison's senior geological staff and have also been inspected by independent external auditors. sampling and assaying Twin holes have been drilled to compare assay results from RC and DD drilling. From these comparisons Talison considers that there is no material down hole smearing of grades in the RC drilling and sampling. Assay data from the laboratory is electronically merged via an acQuire software interface to Talison's SQL server centralised drill hole database Talison's technical staff maintains standard work procedures for all data management steps, with an assay importing protocol established that ensures quality control samples are checked and accepted before data can be loaded. There have been no adjustments or scaling of assay data for lithia. Surface drill hole collars have been located using differential GPS surveying equipment. Talison considers that the precisions of the surface Location of collar surveys are within $\pm 10 \text{cm}$ of true location in three dimensions. data points Underground DD collars were surveyed using total station equipment during the time of underground mining. The plunges of drill hole paths have been surveyed using single shot cameras for holes drilled prior to 2007, and gyroscopic or Reflex electronic survey tools for more recent drilling. Generally, holes have the plunge recorded every ~30m down hole. A few early RC holes have not been surveyed and the short vertical SD holes in TSF1 do not have hole path surveys. The mine grid eastings are approximately aligned to the strike of the main pegmatites with the trend of mine grid north approximately 11° west of Magnetic North and 15.7° west of True North. . The digital terrain model is a synthesis of photogrammetric surveys and regular pit surveys and of good quality for MRE work. • The precision of the TSF1 survey is considered have a precision of ±1m in three dimensions. • The drill hole spacing for the Central Lode MRE ranges from 25mN by 25mE to 50mN by 100mE (local grid) over most of the MRE area. Data spacing and The drill hole spacing for the TSF1 estimate is ~200m square collar spacing. distribution • Down hole sample intervals for the Central Lode are 1m, while a 1.5m metre down hole interval was used for the TSF1 estimate. The Competent Person considers that these data spacings are sufficient to establish the degree of geological and grade continuity appropriate for the MRE and ORE estimation procedures, and the JORC Code classifications applied by Talison. Orientation of Nearly all drill holes are oriented to intersect the mineralisation at a high angle and as such, the Competent Person considers that a grade bias effect related to the orientation of data is highly unlikely. data in relation to geological structure The sample chain-of-custody is well managed by Talison's technical personnel. Samples were collected in pre-numbered bags, for transport Sample security from the primary collection site to the laboratory. Sample dispatch sheets are verified against samples received at the laboratory and other issues such as missing samples and so on are resolved before sample preparation commences. The Competent Person considers that the likelihood of deliberate or accidental loss, mix-up or contamination of samples is very low. · Field quality control data and assurance procedures are reviewed by Talison's technical staff on a daily, monthly and quarterly basis. Audits or reviews The sampling quality control and assurance of the sampling was reviewed by consultants Quantitative Geoscience in the 2000s, Behre Dolbear

Australia in 2018, and (as part of IGO's due diligence work) by Snowden Mining Industry Consultants in 2019. No adverse material findings were

reported in any of these reviews.



#### Section 2 - Greenbushes - Exploration Results

#### Mineral tenement and land tenure status

- At the time, the MREs and OREs were prepared in 2018, Talison Lithium Australia Pty Ltd (Talison) is the 100% owner of the Greenbushes
  Operation with Talison owned by JV entity Winfield Holdings Pty Ltd. Winfield is 49% owned by RT Lithium Limited, which is an entity owned by
  Albemarle Co of the USA and Tianqi UK Limited (51%).
- The WA mineral tenements relevant to the MREs and OREs in this Public Report are tabulated below:

Lease Tenement		Г	Area	
Туре	Name	Granted	Expiry	(ha)
Mining lease	M01/02	28 Dec 1984	27 Dec 2026	969
	M01/03	28 Dec 1984	27 Dec 2026	1000
	M01/04	28 Dec 1984	27 Dec 2026	999
	M01/05	28 Dec 1984	27 Dec 2026	999
	M01/06	28 Dec 1984	27 Dec 2026	985
	M01/07	28 Dec 1984	27 Dec 2026	998
	M01/08	28 Dec 1984	27 Dec 2026	999
	M01/09	28 Dec 1984	27 Dec 2026	987
	M01/10	28 Dec 1984	27 Dec 2026	1000
	M01/11	28 Dec 1984	27 Dec 2026	999
	M01/16	28 Dec 1984	27 Jun 2028	19
	M01/18	28 Sep 1994	27 Dec 2036	3
	M70/765	20 Jun 1994	19 Jun 2036	70.4
General purpose	G01/01	17 Nov 1986	5 Jun 2028	10
	G01/02	17 Nov 1986	5 Jun 2028	10
Miscellaneous	L01/01	19 Mar 1986	27 Dec 2026	9

- Tianqi has confirmed (by e-mail on 6 Dec 2020) to the Competent Persons for MRE and ORE reporting that there are no material issues relating to native title or heritage, historical sites, wilderness or national parks, or environmental settings.
- Tianqi has also confirmed in the same communication to the Competent Persons that the Greenbushes Operation tenure is secure at the time of reporting in this ASX release and there are no known impediments to exploitation of the MRE and ORE and on-going exploration.

# Exploration done by other parties

- Mining in the Greenbushes region has been almost uninterrupted since the tin mineral cassiterite was first discovered in 1886, making Greenbushes the longest continuously operating mine in Western Australia.
- The first tin miner in the area was the Bunbury Tin Mining Co in 1888 followed by Vulcan Mines who carried out oxide tin sluicing operations from 1935 to 1943.
- From 1945 to 1956 tin dredging commenced using more modern equipment and in 1969, Greenbushes Tin NL commenced open pit mining of oxidised soft rock below surface
- Hard rock open pit tin-tantalum mining and processing at 0.8Mt/a commenced in 1992 with the ore sourced from the now near complete Cornwall
  Pit. This mining included underground mine development in 2001 to source high grade tantalum ore when the process capacity was increased to
  4Mt/a. In 2002, tantalum demand declined rapidly and the tantalum/tin treatment plant was placed into care and maintenance.
- Greenbushes Limited commenced open pit mining in 1983 and commissioned a 30kt/a lithium mineral concentrator in 1985. The mining and
  processing assets were subsequently acquired by Sons of Gwalia Ltd (SOG) in 1989 and the concentrate production capacity was increased to
  the 100kt/a in the early 1990s, then increased to 150kt/a by 1997, including the production of chemical grade lithium concentrate.
- Talison purchased Greenbushes Mine tenement package from SOG in 2009 and agreed to provide Global Advance Metals Ltd with the rights to
  explore and mine all other non-lithium minerals on the tenure.

#### Geology

- The Greenbushes Central Lode Deposit is one of the world's largest and highest lithium grade hard rock deposits. The Central Lode is an
  elongate steeply northwest dipping, lithium rich pegmatite body, that intruded along the Donnybrook-Bridgetown shear zone ~2.53Ga years ago
  into the older and largely lithium-barren, high grade metamorphic country rocks of amphibolite (hangingwall) and granofels (footwall) of the
  Balingup Metamorphic Belt.
- The tectonic history of the region is complex with up to four phases of correlated deformation and metamorphism. The pegmatite is interpreted to
  have intruded around the time of the second major tectonic event and was subsequently crosscut by later east-west dolerite intrusives prior to the
  fourth event
- All rocks have been weathered to depths of ~40m below natural surface.
- The Greenbushes lithium bearing pegmatites present as a series of linear dykes and/or en echelon pods that range from a few meters in strike length up to 3km, and with true thickness ranging from 10 to 300m. The pegmatites have intruded at the boundaries between the major sequences of country rocks.



	Section 2 – Greenbushes – Exploration Results
	<ul> <li>Several compositional zones are recognised in the pegmatite, with lithium rich zones observed to occur preferentially on the footwall and hangingwall zones of the Central Lode pegmatite. Tin and tantalum occur in the albite zone of the pegmatite and were the motivation for the historic mining at Greenbushes, mainly from the Cornwall Pit. Generally, the mineralisation presents as stacked higher grade lenses within a low-grade alteration envelope.</li> <li>The high-grade lithium zone of the pegmatite comprises mostly spodumene, apatite and quartz, with local parts of the zone containing up to 50% of the lithium bearing mineral spodumene, which has a lithium concentration of ~8% Li<sub>2</sub>O.</li> <li>The Greenbushes TSF1 mineral resource is the processing waste from earlier phases of tin and tantalum mining and processing from the Central Lode deposits. As such the tailings have similar mineralogy to the Central Lode pegmatite.</li> <li>The TSF1 'geology' is characterised by a ~7m thick upper layer of higher-grade 'enriched' tailings overlying a ~7.5m lower grade layer 'depleted' layer, which in turn overlies the pre-existing natural surface.</li> </ul>
Drill hole information	<ul> <li>A summary of the many holes used to prepare the Greenbushes MREs is not practical for this Public Report.</li> <li>The Competent Person considers the MREs give a balanced view of all the drill hole information.</li> </ul>
Data aggregation methods	No drill hole intercepts are reported.
Relationship between mineralisation width and intercept lengths	<ul> <li>Apart from a few geotechnical drill holes and selected underground fan DD holes, the majority of the MRE related drilling intersects the mineralisation at a high angle and as such approximates true thicknesses in most cases.</li> <li>The Competent Person considers that the risk of a grade bias introduced due to a relationship between intersection angle and grade is very low.</li> </ul>
Diagrams	Representative diagrams of the geology and mineral resource extents are included in the main body of this Public Report.
Balanced reporting	The Competent Person considers that the MREs are based on all available data and provide a balanced view of the deposits under consideration.
Further work	Exploration drilling is continuing within the Greenbushes tenements with several advanced exploration targets on regional pegmatites.

	Section 3 – Greenbushes – Mineral Resources
JORC Criteria	Explanation
Database integrity	<ul> <li>Talison Lithium Pty Ltd (Talison) capture all geoscientific drill hole information for MRE work using laptop interfaces. The data is then stored in an SQL Server database and managed using acQuire software, which is a well-recognised industry software for geoscientific data storage, manipulation and validation.</li> <li>Much of the older drill hole data was manually captured on hard copy log sheets. Talison has focussed on verifying the assay data from early drill holes and not all geological logging has been captured in the SQL database. However, as interpretation of the mineralisation is primarily driven by lithia assays, the Competent Person considers that the lack of complete geology transfer to be not material.</li> <li>Talison selected a random sample of historical assay data transferred into the QSL database and compared the results to the original records to confirm the loading of historical assay records was correct – no material issues were found in this audit process.</li> <li>Talison validates all data following loading through visual inspection of results on-screen both spatially and using database queries and cross section plots. Typical checks carried out against original records to ensure data accuracy include items such as overlapping records, duplicate records, missing intervals, end of hole checks and so on.</li> <li>The Competent Person considers the risk of data corruption through transcription errors between initial collection and use in the MRE process to be very low risk.</li> </ul>
Site visits	The Competent Person for this MRE Public Report visited Greenbushes Operation for one day on 12 Mar 2020 to inspect the mine surface infrastructure, meet with Talison's geological technical personnel, and inspect drill core and the mining operations. The Competent Person was accompanied by geological, mining, metallurgical, environmental and infrastructure experts from Snowden Mining Industry Consultants.
Geological interpretation	<ul> <li>Central Lode:         <ul> <li>Talison prepared a three dimensional (3D) digital wireframe of the Greenbushes pegmatite by linking 15m north south spaced cross-sectional interpretations in mine grid coordinates. Talison also used pit grade control drill hole information and geological mapping to improve local precision of the interpretation where such data was available.</li> <li>Talison prepared a second 3D digital wireframe in a similar process for the highly mineralised pegmatite using a &gt;0.7% Li₂O threshold on one metre drill composites to interpret the cross-section limits. The high-grade wireframe was nested inside the larger volume pegmatite wireframe.</li> <li>Talison also prepared a small 3D digital wireframe to interpret the volume of high-grade low-iron Technical Grade (TG) mineralisation using a combined composite threshold of &gt;3.8% Li₂O and ≤ 0.15% Fe. The TG grade wireframe was nested inside the high-grade wireframe.</li> <li>Barren dyke 3D digital wireframes were also prepared to model these internal waste zones that crosscut the pegmatite mineralisation.</li> <li>A depth of weathering surface was prepared to allow modelling of the oxidised near surface parts of the deposit.</li> </ul> </li> <li>TSF1:</li> </ul>



	Section 3 – Greenbushes – Mineral Resources
JORC Criteria	Explanation
	<ul> <li>Talison prepared 3D digital wireframe surfaces to delimit the top and bottom surfaces of the upper Enriched Zone (EZ) and lower Depleted Zone (DZ) of the tailings using lithia grades and multielement chemistry to determine the boundary between the EZ and DZ, and the boundary between the DZ and the underlying clay zone.</li> <li>The Competent Person considers that Talison's digital geological interpretations are a sound basis to constrain the main zones of mineralisation and model waste for dilution estimation within the Central Lode and TSF1 MREs.</li> </ul>
Dimensions	<ul> <li>Central Lode:         <ul> <li>The pegmatite zone in the MRE model is ~2.8km strike length (north-south in mine grid) and horizontal east-west widths ranging from ~150m to ~300m. The maximum MRE modelled depth is ~800m below surface with depth varying along strike as a function of maximum drill depths on drill sections.</li> <li>The Publicly Reported MRE is constrained by a 'break-even' pit optimisation shell that has dimensions of 2.8km along strike 150-180m wide horizontally and extending to a maximum depth of 580m below surface.</li> </ul> </li> <li>TSF1:         <ul> <li>TSF1's MRE is has dimensions of ~1km north south and ~0.7km east west in the mine grid system.</li> <li>The mean depth of the combined mineralised tailings (EZ+DZ) ranges between 8-15m below current surface.</li> </ul> </li> </ul>
Estimation and modelling techniques	<ul> <li>Central Lode:</li> <li>Talison prepared a digital block model template in Surpac software, which is a well-known modelling software in the WA mining industry for MRE work.</li> <li>The model template was prepared in mine grid coordinates with parent block dimensions of 15m squares in the horizontal and 5m in elevation. Sub blocks were permitted to better model geological boundaries down to half the parent dimensions (7.5m squares) in the horizontal.</li> <li>The geological wireframes were then used to create blocks for each estimation zone with sub blocking along geological boundaries.</li> <li>Grades within the pegmatite mineralised envelopes and waste zones were estimated using ordinary block firiging with the kriging sample weight parameters controlled by continuity models (variography of the lithia composite grades in each estimation zone. Talison interpreted the variography controls using Supervisor software, which is a well-known software system in the WA mining industry for grade continuity analyses in MRE work.</li> <li>Estimation of lithia concentration (weight percent) was completed for multiple separate domains using 'soft' boundary conditions for composite selection between domains, with soft-boundary constraints applied where smooth grade transitions between adjacent zones were deemed geologically appropriate</li> <li>Talison applied a multi-pass composite search strategy for composite selection typically requiring 4-12 composites to be found in the search neighbourhood for the first three estimation passes (doubling the search distance for each pass – 40m, 80m, 120m maximum), then a reduction to a one or two composites minimum for the final 300m long maximum range search. As such, blocks not meeting the minimum composites-found criteria in an estimation search pass would be estimated in subsequent wider search passes.</li> <li>Each estimation domain had composite search orientation parameters set to control the dip, strike and plunge of the composite semina</li></ul>
Moisture	Tonnages for both the Central Lode and TSF1 were estimated on a dry basis.
Cut-off parameters	<ul> <li>Central Lode:         <ul> <li>Talison reported the estimate using a 0.5% Li<sub>2</sub>O block model cut-off within a break-even pit optimisation shell. The cut-off grade is consistent with the operations' process tailing grades at the time the estimate was prepared.</li> </ul> </li> <li>TSF1:         <ul> <li>Talison reported the estimate using a 0.7% Li<sub>2</sub>O block model cut-off which is deemed the break-even grade for processing of tailings through the tailings retreatment plant (TRP) in the Feasibility Study.</li> </ul> </li> </ul>
Mining factors or assumptions	Central Lode:



Section 3 – Greenbushes – Mineral Resources		
JORC Criteria	Explanation	
	<ul> <li>Talison has assumed that mining will continue by conventional open pit drill and blast, and load and haul as currently used in the active Central Lode pits.</li> <li>RC grade control will be used to define ore prior to mining, and close spaced patterns will be used to delineate pods of TG ore.</li> <li>TSF1:</li> <li>Mining is assumed to be conventional open pit free-digging, and load and haul to the TRP.</li> </ul>	
Metallurgical factors or assumptions	<ul> <li>Central Lode.</li> <li>Ore will be processed through the existing spodumene concentration plants to produce TG and CG saleable products.</li> <li>Proposed new plants will have similar or superior design parameters to the existing plants.</li> <li>TSF1:</li> <li>The tailings will be processed through the TRP with expected lithia recovery of 70%.</li> </ul>	
Environmental factors or assumptions	<ul> <li>Tianqi has confirmed to IGO that Greenbushes Operation has all approvals in place to mine, process, and extract spodumene concentrates.</li> <li>The Competent Person understands from IGO's due diligence experts that there are no known impediments to gaining additional approvals for additional process plants, expanded infrastructure and water supply.</li> </ul>	
Bulk density	<ul> <li>Central Lode:         <ul> <li>In situ density of the pegmatite was determined using conventional water displacement methods on drill cores.</li> <li>The data was used to derive a regression equation to estimate MRE block density based on lithia grade – where Density (t/m³) = 2.59 + 0.07× %Li<sub>2</sub>O.</li> <li>A density value of 3.0 t/m³ was assigned to waste zones in the MRE model based on mining reconciliation information.</li> <li>A value of 1.8t/m³ was applied to the oxidised near surface materials, also based on mining reconciliation information.</li> </ul> </li> <li>TSF1:         <ul> <li>A density of 1.67t/m³ was assigned to all tailings (both EZ and DZ) being the average density of five SD core measurements throughout the deposit.</li> </ul> </li> </ul>	
Classification	<ul> <li>Central Lode:         <ul> <li>The MRE has been classified into the JORC Code categories of Measured, Indicated and Inferred Mineral Resource based on Talison's and the Competent Persons assessment of data quality, data spacing and estimation quality.</li> <li>JORC Code Measured Mineral Resources were assigned to broken ore stockpiles, where grade control has given high confidence in the lithia grades.</li> <li>Indicated Mineral Resources were assigned to volumes with average wider spaced data, and Inferred Resources have been assigned at depth and at the peripheries of the MRE, where the data is very widely spaced.</li> </ul> </li> <li>TSF1:         <ul> <li>The MRE has been classified as JORC Code Indicated Mineral Resource based on Talison's and the Competent Persons assessment of data quality, data spacing and estimation quality.</li> <li>The outcome of the MRE process reflects the Competent Person's view of the estimates.</li> </ul> </li> </ul>	
Audits or reviews	<ul> <li>The MRE estimates have been reviewed in 2018 at a high level by Behre Dolbear Australia Pty Ltd, who concluded that the estimates were consistent with the requirements of the prevailing JORC Code and that reasonable prospects of eventual economic extraction had been demonstrated.</li> <li>In 2020, Snowden Mining Industry Consultants reviewed the estimates for IGO and concluded there were no fatal flaws in the MRE processes applied for the Central Lode and TSF1 and the estimates were generally low risk.</li> </ul>	
Relative Accuracy/ Confidence	<ul> <li>No specific statistical studies have been completed to quantify the estimation precision of either the Central Lode or TSF1 estimates.</li> <li>The ore mined to process comparison for the Central Lode mining to date is very good with Talison reporting that the 2018 MRE model forecasts for the 12 months of prior mining, were within 6% relative of tonnages received to the mill and within 3% of reconciled contained lithia.</li> </ul>	

Section 4 – Greenbushes – Ore Reserves		
JORC criteria	Explanation	
Mineral Resource estimate for conversion to Ore Reserves	<ul> <li>The MREs for the Central Lode and TSF1 described in the previous sections of this JORC Table 1 were used as the basis for ORE work.</li> <li>The MREs are inclusive of the ORE for both the Central Lode and TSF1 estimates.</li> </ul>	
Site visits	<ul> <li>The Competent Person for the OREs visited site on 12 Mar 2020. The Competent Person was accompanied by geological, mining, metallurgical, environmental and infrastructure experts from Snowden Mining Industry Consultants.</li> </ul>	
Study status	<ul> <li>Central Lode:</li> <li>The Central Lode open pit mine has been in operation since the mid-1980s.</li> </ul>	



	Section 4 – Greenbushes – Ore Reserves
	- The ORE study is based on operational budgets, well understood OPEX and CAPEX costs with the level of study equivalent to Feasibility
	Study or better as defined in the prevailing JORC Code.  - Process expansions have been costed and scheduled for in-house studies at a Feasibility Study level.
	<ul> <li>Process expansions have been costed and scrieduled for in-nouse studies at a reasonity study level.</li> <li>As part of IGO's due diligence Snowden has confirmed that the mine plan based on the ORE is technically feasible, economically viable and</li> </ul>
	that all material Modifying Factors have been considered.  TSF1:
	The Talison study for the exploitation of the TSF1 ORE is consistent with Feasibility Study as defined in the prevailing JORC Code.
	- The construction of the TRP is nearly complete and residual CAPEX is well understood.
Cut-off	Central Lode:
parameters	<ul> <li>The cut-off grade is a &gt;0.7% Li<sub>2</sub>O ORE model block threshold after application of key Modifying Factors such as mining, processing and product delivery cost assumptions.</li> </ul>
	- The ORE is reported within the LOM final pit design.
	TSF1:  - The cut-off grade is a >0.7% Li <sub>2</sub> O ORE model block threshold after application of key Modifying Factors such mining, processing and
	product delivery cost assumptions.
	Costs considered include processing and maintenance fixed and variable costs, general administration costs, ore premium including re-handle and overhaul, closure costs and all non-mining related stay-in-business capital expenses.
Mining factors or	Central Lode:
assumptions	<ul> <li>Ore recovery factors were determined from mining data for the prior MRE (2016) based on the prior 12 months of forecast mining performance on the prior model. The Modifying Factors applied to the ORE are 100% tonnage recovery at 95% of the lithium grade in the</li> </ul>
	MRE model.
	The mining method is contractor mining open pit drill and blast, load and haul, which has been executed at the operation since the mid- 1980s.
	The pit development plan is a series of staged cutbacks using practical mining widths and equipment access, and achievable vertical advance rates.
	- The pit cutbacks are designed based on current geotechnical slope management plans and pit dewatering strategies. Close spaced RC
	drilling in advance of mining is used to delineate the TG and CG ore within the smaller pods of TG ore.  - Any Inferred Mineral Resources in the pit design are not included in the ORE or LOM plan.
	TSF1:
	- Only the top ~7m of TSF1, which comprises the EZ of mineralisation, is considered for the ORE.
	<ul> <li>An average of 0.2m has been considered as ore loss, mainly due to the vegetation cover.</li> <li>An average of 0.2m has been considered as floor dilution from the underlying DZ.</li> </ul>
	- The TSF walls are assumed to remain with a 3:1 slope angle around the margins of the extracted ORE.
	- There are no Inferred Mineral Resources associated with the ORE for TSF1.
Metallurgical factor or	<ul> <li>Spodumene concentrates have been extracted and sold from Talison's Greenbushes Operation since the mid-1980s using conventional crushing, grinding, gravity, and flotation circuits.</li> </ul>
assumptions	Process plant recovery factors and mineralogy for the existing plants are based on historical processing metrics, with these recoveries considered achievable in two new proposed chemical grade plants.
	The process flowsheets keep deleterious elements at acceptable levels for customer products and multi-finger stockpile blending is also used
	to assist in meeting product specifications.  • The technical grade concentrate produced ranges from 5.0%-7.2% L <sub>12</sub> O and <0.15% Fe, and chemical grade concentrate grades 6.0% L <sub>12</sub> O.
Environmental	Greenbushes operates under the Department of Mines, Industry Regulation and Safety (DMIRS) requirements and a Department of Water and
Liiviioiiiieitai	Environmental Regulation (DWER) environmental licence.
	<ul> <li>Current permits allow a processing rate of ~4.8Mt/a of ore.</li> <li>Approvals to expand the processing capacity to ~9.5Mt/a are in progress with the relevant state and federal authorities and Talison expects</li> </ul>
	that the expansions will be managed under the existing licences described above.
	• IGO has completed sufficient due diligence on approvals to consider that the operation can be expanded, albeit the expansion of water sources to meet a ~9.5Mt/a process rate will require the identification of new surface water catchment sources.
	<ul> <li>All approvals for the exploitation of the TSF1 ORE are in place.</li> <li>Greenbushes Operation is within a state forest and Talison are in ongoing consultation with the Department of Biodiversity, Conservation and</li> </ul>
	Attractions with respect to mine closure.
Infrastructure	Greenbushes Operations have been mining and processing lithium ore since the mid-1980s and all necessary infrastructure is in place to support the currently approved operations.
	The two planned additional chemical grade plants (CGP3 and CGP4) will require additional power supply and Talison are working with Western Power to install a 133kV powerline from Bridgetown to the mine to power the new processing operations.
	The current water supply is being upgraded with a new clear water dam and water treatment plant to enable more efficient water reuse and reduction of water losses in the processing circuits.
	Investigations are underway to provide additional catchment water supply from the eastern side of the mine area.
	An additional tailing storage facility (TSF4) is being designed to store tailings for the mine plan that are more than the capacity of current TSFs and the mined out TSF1.
	Applications are in progress to clear areas for additional waste rock dumping.
	No other significant infrastructure is anticipated and sustaining capital costs for infrastructure are included in the financial model.



Section 4 – Greenbushes – Ore Reserves		
Costs	<ul> <li>Capital costs for production expansions include the cost associated with the completion of the TRP plant and the construction of CGP3 and CGP4. The costs for the TRP are based on ECPM estimates by the construction contractor, while the costs for the additional two chemical plants are based on in-house Feasibility Studies and Talison's prior experience with the construction of the newly commissioned CGP2 plant.</li> <li>In Talison's July 2018 in-house Feasibility Study, the capital spends estimated for CGP3 and CGP4 totalled \$A893.6 million with an estimation precision of ±15%. The September 2018 Feasibility Study for the TRP plant was \$A125.8 million with an estimation precision of ±20%.</li> <li>Sustaining capital costs are estimated based on Talison's prior experience of cost relative to the value of installed processing operations.</li> <li>Mining costs are based on current open pit contractor mining costs and have been adjusted for 'rise and fall' terms.</li> <li>For pit optimisation studies a processing cost of ~\$A43.00/t was assumed for technical grade ore, ~\$17.20/t for chemical grade ore with additional administration plus tailings cost of ~A\$1.80/t.</li> <li>Other operating costs including processing and product transportation costs are based on operating budgets, that have been adjusted for planned increases in production and are based on Talison's past extensive experience relating to fixed and variable costs.</li> <li>WA State royalties are levied at 5% of sales revenue after allowing for deductions of overseas shipping costs, where applicable.</li> </ul>	
Revenue factors	<ul> <li>Long term product prices and exchange rates are based on Talison's corporate guidance.</li> <li>The average price for technical grade product is projected to reduce by 10% in real terms over the next few years due to Talison's pricing mechanism and distribution agreements. Prices were then expected to remain flat</li> <li>The average price for chemical grade product is projected to increase by an average of 7% per annum over the next five years, due to increased demand for lithium carbonate for rechargeable batteries, then remain flat.</li> <li>An exchange rate of \$AU: \$US of 0.79 has been assumed based on consensus forecasts of exchange rates for the study. The Central Lode optimisation was run using an exchange rate of 0.80 and a 7.75% discount rate.</li> <li>The value of lithium for the Central Lode pit optimisation was set to A\$1,605/t net price for chemical grade lithium product with selling costs including all expenses and royalties. The net price for technical grade produce was slightly lower at \$A1,575/t.</li> </ul>	
Market assessment	<ul> <li>The continued strong growth in the rechargeable battery sector is expected to drive increasing demand for lithium up until 2026 according to Roskill forecasts made in 2018.</li> <li>Talison has assumed it will be able to increase its current market share due to Greenbushes high grade and product quality advantages over other competitors, with an annual increase in sales volumes by 29% until 2024, when final expansions are complete.</li> </ul>	
Economic	<ul> <li>An inflation rate of 2.5% per annum was assumed for all prices and costs.</li> <li>The NPV of the mine plan was determined using a discount rate of 10% per annum.</li> <li>The NPV is most sensitive to changes in product price, exchange rates and sales volumes.</li> <li>The confidence in product prices and exchange rates is consistent with routine industry practices with the data derived from reputable forecasters.</li> </ul>	
Social	Talison has strong working relationships with the local community and key stakeholders and has a social licence to operate.	
Other	<ul> <li>Talison considers that are no material naturally occurring risks associated with the current operation or planned future expansions.</li> <li>Talison considers that there are no material issues relating to current legal and marketing agreements.</li> <li>Talison considers that there are reasonable grounds to expect that all necessary government approvals will be received within the timeframes anticipated for the Feasibility Study expansion plans.</li> </ul>	
Classification	<ul> <li>The OREs are classified after due consideration of the MRE classifications with Measured Mineral Resources converting to Proved Ore Reserves and Indicated Mineral Resources converting to Probable Ore Reserves after due consideration of all Modifying Factors as described in the JORC Code.</li> <li>The results reflect the Competent Persons view of the Central Lode and TSF1 OREs.</li> <li>No portion of Probable Reserves is derived from Measured Resources.</li> </ul>	
Audits or reviews	<ul> <li>The ORE estimates have been reviewed in 2018 at a high level by Behre Dolbear Australia Pty Ltd, who concluded that the estimates are consistent with the requirements of the prevailing JORC Code and that reasonable prospects of eventual economic extraction had been demonstrated.</li> <li>In 2019 and 2020, Snowden Mining Industry Consultant reviewed the estimates and concluded there were no fatal flaws in the ORE processes applied for the Central Lode and TSF1 and the estimates were generally low risk.</li> </ul>	
Discussion of relative accuracy and confidence	<ul> <li>No specified statistical studies have been completed to quantify the estimation precision of either the Central Lode or TSF estimates.</li> <li>Mining reconciliation for the Central Lode mining to date is very good with Talison reporting the estimate forecasts were within 6% relative of tonnages received to the mill and within 3% of reconciled contained 'metal' for the 12 months prior to reporting the estimate.</li> </ul>	