



ASX Announcement

10 March 2022

## Ancuabe Project Strategic Review & Desktop Study Completed Scoping Study to Commence Immediately on Staged Development Plan

Triton Minerals Limited (ASX: TON, Triton or the Company) is pleased to provide an update of its Strategic Review of the Ancuabe Graphite Project (**Project**) and the Desktop Study for the Commercial Pilot Plant (**CPP**), focused on bringing the project into production in the short term, at a small scale, for low capex and on a commercially viable basis.

### Highlights:

- **Strategic Review and Desktop Study Completed** – extensive review of the various alternatives for bringing the Project into production in the short term completed. Desktop Study finalised which demonstrated the Project could be developed initially via a CPP as part of a two-stage development strategy, using a modular build approach which would provide the most efficient and cost-effective solution to developing the Project.
- **Ancuabe Staged Development Strategic Plan** - two stages:
  - ✓ **Stage 1** – development and construction of CPP for a small-scale processing plant, capable of producing flake graphite concentrate on a commercial basis, investigating a processing plant that will target processing 100 to 125k tpa of ore, producing 5 to 8 k tpa of graphite concentrate.
  - ✓ **Stage 2** – expansion to a large-scale operation as planned in the 2017 DFS<sup>1</sup> incorporating value-add enhancements identified in Stage 1.
- **Value Enhanced Products** – investigate value-added adding opportunities through products and marketing, primarily for the lithium-ion battery and graphite foil applications, to build a vertically integrated business model to supply premium quality graphite products into a diverse range of premium markets.
- **Funding** – given the smaller scale of Stage 1, initial project funding requirements are lower, provides range of options such as BOOT arrangements, contractors and leasing which further reduces upfront direct funding requirements. The Company is receiving strong interest from Western debt providers.
- **De-Risks the Project** – staged approach reduces risk associated with execution, financing and technology for the larger follow-on expansion investment, as well as facilitating the development of end-user markets for its range of graphite products.
- **Validates the Ancuabe Project as a Producing Mine** – Ancuabe is regarded as one of the largest and highest-quality undeveloped graphite deposits globally and the Stage 1 CPP will provide proof of concept, confirms the quality of the orebody and concentrate product to the market.
- **Use of Modular Plant** – is a well-established and proven development methodology, used in other industry's such as oil & gas and chemical industries, which is ideal for African developments and projects in today's tight projects market, with potential to realise significant savings in both construction time and capital costs.
- **Scoping Study and Stage Gate Approach** - Triton is aiming to bring the CPP into production within 18 months or September Quarter 2023, will immediately commence a scoping study in March 2022. The use of Stage Gate approach which will allow for a rapid timeline to first production.

Triton is pleased to provide an update of its **Strategic Review** of the Ancuabe Graphite Project and the **Desktop Study** for the Commercial Pilot Plant (CPP), focused on bringing the Company's flagship project into production in the short term, at a small scale, for low capex and on a commercially viable basis.

In completing the Strategic Review, the company completed an extensive review of the various alternatives for bringing the Company's flagship Ancuabe Graphite Project into production in the short term.

A Desktop Study was then completed (which included a Preliminary Economic Assessment) that demonstrated that the Ancuabe project could be developed on a CPP basis, and it revealed that utilising a two-stage, modular build approach would provide the most efficient and cost-effective solution to developing the Ancuabe project.

The Ancuabe Staged Development Strategic Plan is the development of the project in two stages as follows:

- **Stage 1** - development and construction of CPP for a small-scale processing plant, capable of producing flake graphite concentrate on a commercial basis.
- **Stage 2** – expansion to a large-scale mine as envisioned in the 2017 DFS incorporating value-add enhancements identified in Stage 1.

### **Stage 1 – Commercial Pilot Plant**

The Stage 1 CPP will consist of the construction of a small-scale processing plant, capable of producing flake graphite concentrate on a commercial basis, which will allow the company to sell commercial sized parcels of "run of mine" Ancuabe graphite flake concentrate to off-takers.

It is planned to investigate a processing plant that will target processing 100 to 125k tpa of ore, producing 5 to 8 k tpa of graphite concentrate. Which is smaller than what was reported previously but is based upon the use of mobile and modular processing plant<sup>2</sup>. The modular plant not only allows a smaller and cheaper plant to be constructed but can be completed in short time frame also allows for scaling up to the large-scale project as planned in the DFS.

This will allow the company to provide a commercial "proof of concept" with the goal of optimizing the process circuit while allowing the Company to supply true "run-of-mine" flake concentrate to customers for use in regular product manufacturing on a commercial basis.

Triton is aiming to bring the CPP into production within 18 months or September Quarter 2023, therefore it will immediately commence a scoping study in March 2022. During the scoping study the company will assess the capabilities of the plant and undertake a similar comprehensive costing review exercise to ascertain the possibility of utilizing a modular build methodology for process plant.

The scoping study will investigate other options to reduce up-front capital costs such as dry-stack tailings, single of bulk concentrate and de watering requirements. Direct funding would be lower with the use of BOOT's, contractors and leasing etc.

The Stage 1 CPP Development project moving forward will be completed using a Stage Gate approach, with the decision to move to the next phase being based upon the results of each previous stage, which will allow for a compressed project schedule.

## Stage2 – Expansion to Full DFS Capacity

It is estimated that the Stage 1 CPP will operate for at least 2 years, prior to the Stage 2 Expansion, which will allow the process circuit to be proven and optimized.

The current options for the Stage 2 Expansion are as follows:

- A - Expand to 1 M tpa for 60 k tpa concentrate
- B - Expand to 1 M tpa for 60 k tpa over 2 Expansion Phases
- C - Expand to 1 M tpa for 60 k tpa over 3 Expansion Phases

The final Stage 2 expansion plan will be based upon the performance of the process plant in Stage 1, incorporating value-add enhancements identified in Stage 1 and also the market demand for flake graphite prevailing at the time. Outlined below is indicative expansion plan schedule:

**Table 1 - Ancuabe Graphite Project – Stage 1 Development – Project Schedule**

	Stage One - 100/125k for 5/8 k tpa Concentrate			Stage Two - Expansion to 1M for 60k tpa Con				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
	2022	2023	2024	2025	2024	2024	2025	2026
<b>Stage 1</b>	Development	Production - 125k tpa - 5/8 k tpa						
<b>Stage 2</b>								
<b>Option A</b>				Expansion - 1M tpa/60 k tpa				
<b>Option B</b>								
Phase 1				Expansion - 250 k tpa/15k tpa				
Phase 2						Expansion - 1M tpa/60 k tpa		
<b>Option C</b>								
Phase 1				Expansion - 250 k tpa/15k tpa				
Phase 2						Expansion - 625ktpa/38 ktpa		
Phase 3								Expansion 1M tpa/60 k tpa

Stage 2 will involve the installation and construction of additional processing plant and support service services for a fully operational, large-scale mine as envisioned in the 2017 DFS incorporating value-add enhancements.

The costs for Stage 2 are currently unknown, but the Company will determine these costs in parallel with the development of Phase 1. The Company anticipates that any modules used in Phase 1 will be integrated where possible in the Phase 2 build-out and supported with additional modules as required. In such an event, the Company expects it will be able to achieve savings in both CAPEX and OPEX costs for full-scale production, relative to those envisioned in the 2017 DFS study.

The company will also investigate the inclusion of value-added processing for lithium-ion battery and graphite foil applications at the classification portion of the plant.

**NOTE:** The Company has not yet made a production decision in respect of Stage 1 or 2 and will assess the results of a definitive feasibility study before making a production decision in respect of each of the Phases moving forward.

## Value Enhanced Products and Marketing Strategy

The company will investigate value-added adding opportunities through products and marketing, primarily for the lithium-ion battery and graphite foil applications, to build a vertically integrated business model to supply premium quality graphite products into a diverse range of premium markets.

This will be achieved by investigating the following opportunities:

- Product Development – to cater to a diverse range of products for premium customers
- Marketing – finding the premium niches in a highly fragmented market
- Key Strategic Partnerships - project development, marketing and product development
- Social License to Operate Requirements – responsible sourcing, ensure ethical and sustainable production, green supply (i.e.: CO2 footprint) and traceability of supply.

The value adding strategy will leverage off the large and high-quality Ancuabe Graphite Project resource and which will produce a premium quality with a wide concentrate product range of Expandable 56%, Battery 20% and Refractory 24%.

## The Staged Development Strategic Plan

The Company's ultimate goal for the Ancuabe project is the development of a large-scale project as planned in the DFS and previously approved by the regulatory authorities.

In the DFS for the Ancuabe Graphite Project, Triton established the project as a globally significant graphite development project with strong returns (US\$298m, IRR 37%), targeting production of 60ktpa of high purity large flake graphite concentrate over a long mine life (27 years), with short payback period (3.7 years).

The benefits of the Staged Development Strategic Plan are as follows:

- **Timing of Production** - can be brought into production in relatively short time (15 to 18 months), entering a growth market early, providing first-mover competitive advantage while quickly being able to penetrate the market and the ability to match Market Demand by staged development.
- **Funding** - Commences on a small but commercial basis, with low capex and direct funding requirements there is range of options such as BOOT, contractors and leasing of equipment, which are all well advanced, reduces the direct funding and operational risk etc.
- **De-Risks the Project** – reduces risk associated with execution, financing and technology risks for the larger follow-on expansion investment, as well as facilitating the development of end-user markets for its range of graphite products and services.

- **Validates the Ancuabe Project as a Producing Mine** – Ancuabe is regarded as one of the largest and highest-quality undeveloped graphite deposits globally and the Stage 1 CPP will provide proof of concept, confirms the orebody and concentrate product to the market. The CPP is a commercial development and not a demonstration plant.
- **Modularization** - Is a paradigm shift in the resources industry:
  - ✓ **Well-established and proven development methodology** – used in other industry's such as oil and gas, consumer packaged goods and chemical industries, with entirely modular plant construction, as a result, they have realized significant savings in both construction time and capital costs.
  - ✓ **African Developments** – By fabricating key components in a controlled shop environment, it is possible to accelerate schedule, minimize risk, improve quality and control uncertain field construction costs. Modularization also facilitates plant start-up. Jobsite environmental and safety performance can be improved. Also, permitting, and civil work can be accelerated.
  - ✓ **Current Tight Market** – in the current tight market for construction projects, modularization can enhance project development and execution in terms of budget and schedule.
- **Value Enhancing Strategy** – the Staged Development and Expansion plan will be based upon the performance of the process plant in Stage 1, also the market demand flake graphite prevailing at the time and also allow the company to develop a value-adding strategy which is designed to create investor value, through the up lift in uplift value for graphite from down streaming processing and marketing activities.

**Triton's Executive Director, Mr Andrew Frazer said:**

*"I am pleased with the rapid progress the Triton and CPC teams have been able to deliver in a short period of time since the Strategic Review commenced in early November. We have been working tirelessly to become the second ASX listed graphite producer in Mozambique, a premier graphite producing nation.*

*The team have delivered on what was planned when the Strategic Review/Desktop Study commenced. From that we have a credible plan for both the short and long term.*

*The Ancuabe Staged Development Strategic Plan, combined with the proposed use of modular approach for the proposed commercial pilot plant, is critical as it will enable shorter timeline to first production, with the flexibility to scale up to the large scale 60,000tpa of concentrate production as envisaged in the DFS.*

*We are targeting commercial production within 18 months (or by the September Quarter 2023) for the Ancuabe Project. It is important now is that Triton constructs the CPP in Mozambique as soon as possible so that we can commence production of large flake, high purity graphite for the quickly growing fire retardant and battery markets and importantly realise value for our shareholders.*

*The development of a value-adding strategy is designed to create investor value, the up lift in value for graphite from down streaming processing and marketing is estimated to be in the order of 5 to 20 times.*

*I am pleased to have CPC involved which will ensure rapid, prudent development and construction of the Ancuabe Project with a team that has built numerous mining projects on the African continent and excellent track record of developing efficient mines on time and on budget that is unparalleled and will be able to immediately build on its past work and progress and advance the project in a cost effective and timely manner.*

*We are looking forward to continuing on our path to becoming the next significant graphite producer globally".*

## Stage 1 - Timeline and Next Steps

Triton is aiming to bring the CPP into production within 18 months or September Quarter 2023, therefore it will immediately commence a scoping study in March 2022. During the scoping study the company will assess the capabilities of the plant and undertake a similar comprehensive costing review exercise to ascertain the possibility of utilizing a modular build methodology for process plant.

The project moving forward will be completed using a stage gate approach, the decision to move to the next phase will be based upon the results of each respective stage, which will allow for a compressed project schedule. The Key Stage Gate Points for the development of Stage 1 are the Scoping Study and Definitive Feasibility Study from which Decision to Proceed forward and also major commitments will be made.

Moving forward the following key works are planned to be conducted for the Stage 1 Development as per the schedule below:

**Table 2 - Ancuabe Graphite Project – Stage 1 Development – Project Schedule**

	2022				2023				2024	2025
	Mar Q	June Q	Sept Q	Dec Q	Mar Q	June Q	Sept Q	Dec Q		
<b>Scoping Study</b>										
<b>Definitive Feasibility Study</b>										
Early Design and Engineering										
Request for Quotation										
Funding										
Approvals										
Decision To Proceed		★								
<b>Project Development and Execution</b>										
Detailed Design and Engineering										
Tender and Procurement										
Early Works										
Construction										
Commissioning								★		
<b>Operations</b>										

## End Note

1. See ASX Announcement 15 December 2017 - 'Triton delivers robust Ancuabe Definitive Feasibility Study and declares maiden Ore Reserve' and confirms that all of the material assumptions underpinning the production target, or the forecast financial information derived from the production target in the initial public report continue apply and have not materially changed.
2. See ASX Announcement 4th November 2021 Engagement of CPC Project Design for Commercial Pilot Plant.
3. See ASX Announcements 26th November 2021 Compelling Desktop Study Results on Proposed CPP at Ancuabe Graphite Project
4. 7th December 2021 Significant Potential Production Capacity Increase at CPP and 11th January 2022 CPP Economics Independently Further Improved by US\$7m.

**This ASX release was authorised by the Board of Directors.**

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