ASX ANNOUNCEMENT
By e-lodgement

Alabama Graphite Refinery Scoping Study Confirms Strong Project Economics

Volt Resources Limited (**ASX:VRC**) ("**Volt**" or "**the Company**) is pleased to announce that it has completed a Scoping Study for the planned Alabama Graphite Refinery which reinforce that Volt's graphite purification process delivers strong project economics.

This milestone represents an important phase in Volt's strategy to advance the US Graphite Refinery. The Company is proceeding with plans for pilot plant trials, engaging with potential offtake partners, exploring government facilitation, and considering funding options as it moves forward with project development. Our potential funding pathways for this project include:

US Government Funding – The US Government remains committed to building localized supply chains for battery materials and critical minerals. Executive Orders such as "ENSURING NATIONAL SECURITY AND ECONOMIC RESILIENCE THROUGH SECTION 232 ACTIONS ON PROCESSED CRITICAL MINERALS AND DERIVATIVE PRODUCTS" issued on 15 April 2025 emphasize the supply of critical minerals (e.g. graphite). On 6 June 2025, US President Trump declared a national emergency and invoked Defense Production Act (DPA) authorities to fast-track U.S. production of critical minerals vital to the economy and national security. The Department of Energy (DOE) and Department of Defense (DoD) have funded several graphite projects in the US and we are in discussions with these agencies and will pursue appropriate funding opportunities.

US Agencies – Export Import Bank (EXIM) is also a potential source of funding, and we have re-initiated dialogue with the bank. ASX listed Quantum Graphite recently announced progress with US$300 million financing from EXIM for their graphite project in US & Australia.

State Government Funding – We have identified an industrial site in Tuscaloosa, Alabama for this project. To attract and retain high quality jobs, the State Government and Local Government offers financial incentives including grants, loans, tax breaks, etc. We are in discussions with these agencies and are optimistic of securing partial financing for the project once the site selection is completed and other project requirements are met.

Pre-Payment from Customers – In 2024, US companies imported approximately 60kt of graphite from China and other countries. We are qualifying our purified graphite products with several such companies and may seek pre-payment from customers.

Placements / Capital Raises - Volt has had successful placements and this is also a potential way to secure partial financing for the project.

Debt Funding – The Alabama Graphite Refinery project has strong project economics. Following the completion of further testwork and studies, commercial agreements including product sales contracts, Volt believes it will be in a good position to access conventional debt finance facilities from banks and non-bank lenders for a substantial portion of the total funding required to develop the project.

Based on the above, we believe that we have a reasonable chance of securing financing for the project. The project is expected to be cash flow positive from year 4 of operation and cash flow from sales will fund the operation of the project.

Please refer to the Cautionary Statement below.

Cautionary Statement

The Scoping Study referred to in this ASX announcement is a preliminary technical and economic study of the potential viability of producing High and Ultra High Purity Graphite products from graphite concentrate feed by constructing a graphite refinery facility. The Scoping Study is based on low-level technical and economic assessments, which is not sufficient to support any financial investment or development decision, or to provide certainty that the conclusions of the Scoping Study will be realised. Further evaluation work, test work, and studies are required before Volt will be in a position to provide any assurance of an economic development case, or to provide certainty that the conclusions of the Scoping Study will be realised.

The Scoping Study is based on material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Volt considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved. To achieve the potential development outcomes indicated in the Scoping Study, funding of at least US$21 million will likely be required. Investors should note that there is no certainty that Volt will be able to raise funding when needed. It is possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Volt's existing shares. It is also possible that Volt could pursue other strategies to provide alternative funding options including third parties through joint venture or processing agreement. If Volt does decide to pursue these other 'value realisation' strategies, this could materially reduce the Company's proportionate ownership of the Project. Volt has not secured any contracts and accordingly cannot make an assurance that it will have contracts available within the scoping study development timeframe. Volt will update the market accordingly if any contracts are entered into. This release contains a series of forward-looking statements. Volt has concluded that it has a reasonable basis for providing the forward-looking statements included in this announcement and believes that it has a reasonable basis to expect it will be able to fund the development of the high purity graphite (HPG) and ultra-high purity graphite (UHPG) facilities. However, a number of factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of this Scoping Study.

Executive Summary

- Robust Pre-tax NPV_{13} real US$136M
- Pre-tax IRR of 58%
- Average Annual EBITDA US$38M over 21 years
- Low Initial Capital Cost of US$21M, Total Capital Cost of US$57M
- Graphite Refinery's location in an US industrial park has ready access to energy, water, and excellent transport infrastructure
- Located near potential customers

Development Strategy

With the growth of ex-China battery markets and sourcing of battery materials, it is paramount to have a low cost, proven, and environmentally superior refining process for the production of high and ultra-high purity flake graphite. Projected battery production in Europe and North America by 2030 will need approximately 1.1 million tonnes each of purified natural and synthetic graphite.

We believe the Company's non-hydrofluoric acid (HF) and non-thermal graphite refining process to produce ultra-high purity (99.95%) graphite is a technical breakthrough and the Company has applied for a US Provisional Patent titled "Low-Cost HF Free Purification to Produce Battery Grade Graphite".

Figure 1 – High Purity (99.5%) Graphite Production Line at Zavalievsky Graphite

To optimize the process for bench-scale production of ultra-high purity graphite (UHPG) using the patent pending technology, the Company procured a specialized chemical reactor[1]. The reactor was successfully installed and commissioned at Zavalievsky Graphite's (ZG) processing facility, as shown in Figure 2. This reactor

[1] Refer to the ASX announcement dated 2 September 2024 titled "Volt Resources Operational Status Updates"

provides better control on reagent addition, reaction time, process safety, and provides design data needed for the next step of industrialization. The reactor production trials have been underway for over five months and provide the basis for some of the cost assumptions for the Scoping Study financial model.

Figure 2: Installed UHPG Reactor (Right)

Volt is targeting industrial applications of HPG and UHPG and the source of feed material (flake graphite) could be a third party supplier with existing natural graphite production undertaken in Canada, Brazil, Mozambique, Madagascar, China, and other locations.

Graphite Refinery

As shown in Figure 4 below, Volt's downstream focus is the development, manufacturing, marketing, and sales of High Purity Graphite (HPG, ~99.5% TGC) and Ultra-High Purity Graphite (UHPG, ~99.95% TGC) products for industrial applications such as electronics, polymers and insulation, lubricants, oil and gas drilling, refractories, and batteries (alkaline, lithium ion). These are existing markets for graphite currently served in the US by a combination of import and domestic graphite refineries. Volt's experience in the commercial production of HPG since 2017 at ZG coupled with the patent pending process for UHPG, provides the Company with a competitive edge over conventional graphite refining processes.

Volt's two-step process involves:

Step 1: Starting with flake graphite concentrate (~95%), ~99.5% high purity graphite based on Volt's proven process is produced (Figure 1).

Step 2: Starting with ~99.5% high purity graphite produced in Step 1, ultra-high purity (~99.95%) graphite is produced via Volt's new chemical purification process.

The schematic of the process is shown below in Figure 3. Key material processing assumptions are as below.

i. Utilisation factor = 0.9
ii. Operating hours = 7,884 hrs per year
iii. Input graphite purity = 95% TGC

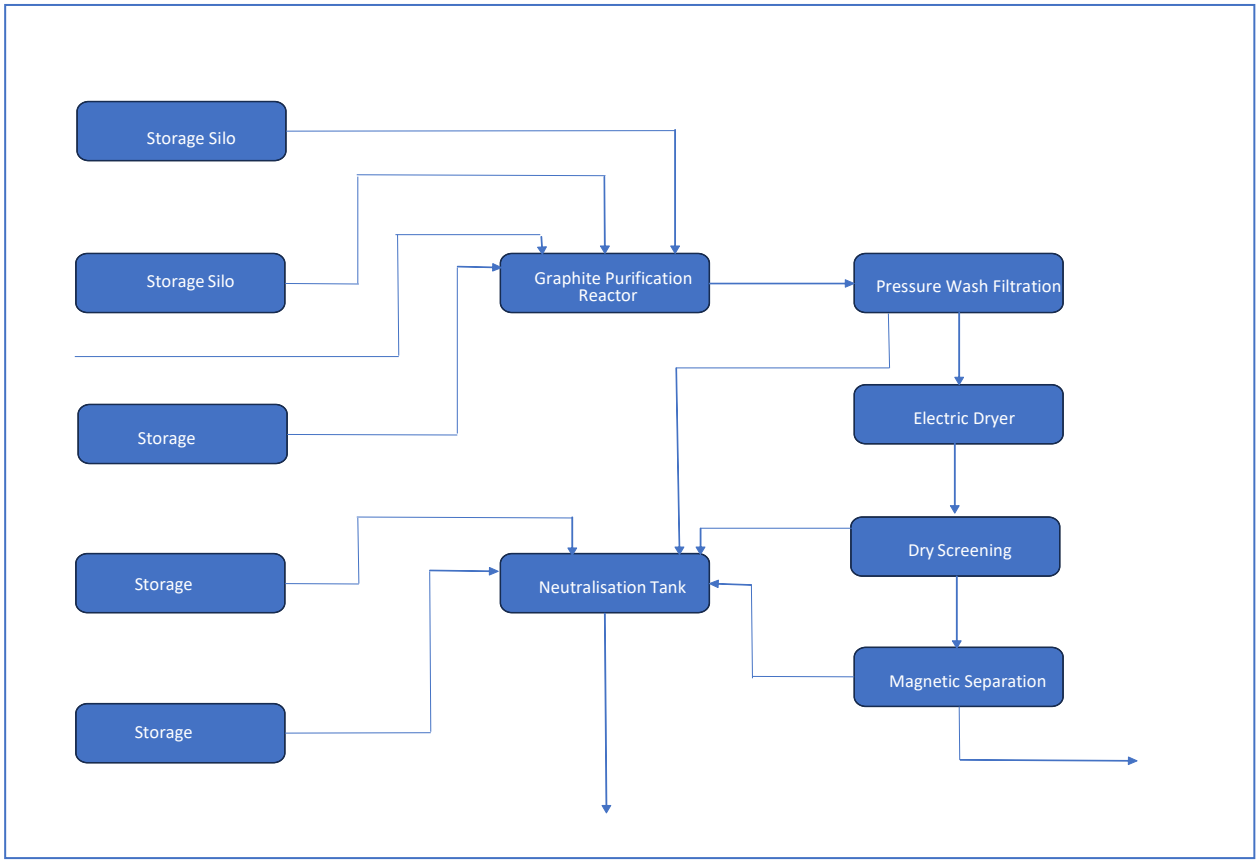

Figure 3: Schematic of the Ultra High Purification Process

The Scoping Study was performed by Amity Mining and Volt with assistance from Agilitus.

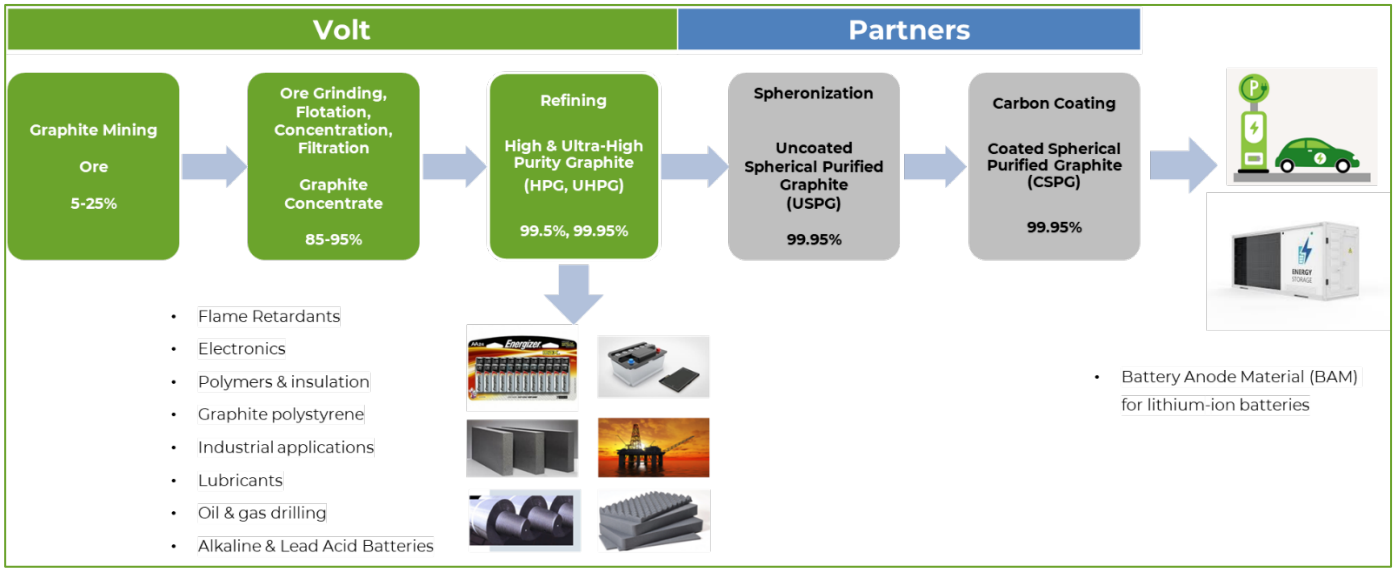

Figure 4: Volt Strategy for Downstream HPG and UHPG Business

Development Schedule

The Alabama Graphite Refinery is to be developed in three stages commencing with a low capital expenditure first stage of US$21 million producing annually approximately 12,000t of HPG and UHPG by CY 2028. Further staged developments with additional capital expenditure of US$18.6 million and US$17.7 million are forecast to result in annual production levels increasing to approximately 30,000t and 48,000t by 2031 and 2035 respectively.

Graphite Refinery Assumptions and Products

Assumptions	Product Output
Location • Alabama, US **Graphite Concentrate Feed (~95%)** • 13 ktpa **Feed Graphite Sources** • Flake Graphite Concentrate from third party producers **Two Step Production Process (non HF acid)** • Step 1 (~95% → ~99.5%) – Caustic Bake and Acid Leach Process (Chemical) • Step 2 (~99.5% → ~99.95%) – Patent Pending Process (Chemical)	**Near Term Products** • High Purity (~99.5%) Graphite • Ultra-High Purity (~99.95%) Graphite **HPG and UHPG Product** • 12.1 ktpa **Long Term Products (not included in financials)** • Uncoated Spherical Purified Graphite

Marketing and Product Pricing

Per the US Geological Survey, in 2024 no natural graphite was produced (mined) in the US. However, approximately 100 companies consumed 52,000 tonnes of graphite concentrate valued at an estimated US$115 million. The major uses of natural graphite were in batteries, brake linings, lubricants, powdered metals, refractory applications, and steelmaking. During 2024, the US natural graphite imports were an estimated 60,000 tonnes (consisting of 88% flake and high-purity graphite, 12% amorphous, and 0.5% lump and chip graphite) while exports were estimated to be 8,400 tonnes. Furthermore, average price of imports was US$ 1,070 per tonne at foreign port which includes both coarse and fine graphite and excludes coated spherical purified graphite (CSPG) and un-coated spherical purified graphite (USPG). The accessible market for our US graphite refinery would be most of the 52,000 tonnes graphite currently consumed in the US.

The proposed plant will produce two products – HPG & UHPG. The HPG is currently produced and sold by the Company's 70% owned subsidiary Zavalievsky Graphite. Therefore, the HPG price is based on market knowledge. The UHPG prices are derived from market report[2].

Processing Costs

The estimation of the processing cost for UHPG of US$1,016 per tonne has been carried out using standard project engineering methodology, test work data, vendor data, and has addressed all material aspects of the graphite refinery. The main items which make up the processing operating costs are as follows. The Reagent cost includes US$ 6.5M for the cost of flake graphite concentrate feed at US$ 500 per tonne. For this Scoping Study, graphite concentrate has been assumed to be sourced from a third party and that has been factored into the processing cost. The Company is confident that it will be able to acquire feedstock from third parties given the large volume of graphite concentrate production globally.

For the period January to March 2025, Battery Raw Material Price Update, Fastmarkets Index[3] was about US$ 435 per tonne price for 94C, -100 mesh graphite, fob China.

[2] Benchmark Market Intelligence, 1Q 2023 report
[3] Battery Raw Material Price Update | Fastmarkets.

Operating Cost Item	Annual Cost
Power	US $372,687
Reagent	US $7,683,323
Labour	US $2,310,000
Maintenance	US $329,235
Owner's Cost	US $808,500
Transport	US $768,332
Total Operating Cost	**US $12,272,077**

Table 1: Operating Cost Estimates

The operating cost divided by annual production (12,000tpa) calculates US$1,016 per tonne processing cost.

Planned Plant Location

The identified site for the graphite refinery (Figures 5 and 6) is currently owned by the Tuscaloosa County Economic Development Authority. It is strategically located in Tuscaloosa County Alabama's Airport Industrial Park and has several key attributes that are important for constructing the graphite refinery. These include:

- Access to Water and Waste Disposal Systems
- Energy Infrastructure – Electricity and Gas supply
- Telecommunications Services
- Transportation Infrastructure with direct access to roads, highways and rail
- Proximity to the Tuscaloosa National Airport

Figure 5: Potential Site - 1,000-acre Airport Industrial Park Site Map

Figure 6: Tuscaloosa County Airport Industrial Park Greenfield Site

We anticipate needing various permits from the city and Alabama Department of Environmental Management such as Annexation and Zoning, Land Disturbance Permit, Building Permit, Stormwater Permit, Environmental Permit, Air Permit which are typical for such a project. The project will consist of land clearing, site grading, building construction, and manufacturing activities.

Capital Cost

The initial capital cost estimate is based on the flowsheet, tonnage, grades, and recoveries detailed in the Scoping Study. The estimate was developed using standard project engineering practices, integrating test work data and vendor insights to ensure inclusion of all plant aspects. The total capital cost is derived for an 13ktpa processing capacity, incorporating 15% of direct cost as contingency to manage uncertainties and potential cost escalations and the breakdown is included in the below Table 2.

Description	Cost US$M
Equipment and Infrastructure Supply and Installation	14.1
Buildings	0.9
EPCM	0.7
Indirect	2.7
Contingency	2.3
Total	**20.7**

Table 2: Capital Cost Estimates

Scoping Study Results

The excellent economic results delivered by the Scoping Study are summarised below in Table 3.

Financial Metrics	Unit	
Initial Capital Cost	US$M	21
Capital Intensity	US$/t	1,709
Average Annual EBITDA Over 21 Years	US$M	38
Pre-tax NPV_{13} real	US$M	136
Pre-tax IRR	%	58

Table 3: Financial Metrics

The financial model uses a real discount rate of 13%.

Sensitivity Analysis

Sensitivity analysis was undertaken for three key economic drivers being purified graphite prices, capital expenditure, and operating expenditure as shown in Figure 7 and Table 4 below. The sensitivity range used is +/- 30% movement from the Scoping Study estimate for each of the drivers. The price factor has the largest impact on project economics. Expenditure sensitivity analysis highlights the Alabama Graphite Refinery Scoping Study has relatively low sensitivity to capital expenditure outcomes with operating expenditure movements providing a larger impact on project NPV. In all sensitivity cases evaluated, the project NPV remains positive.

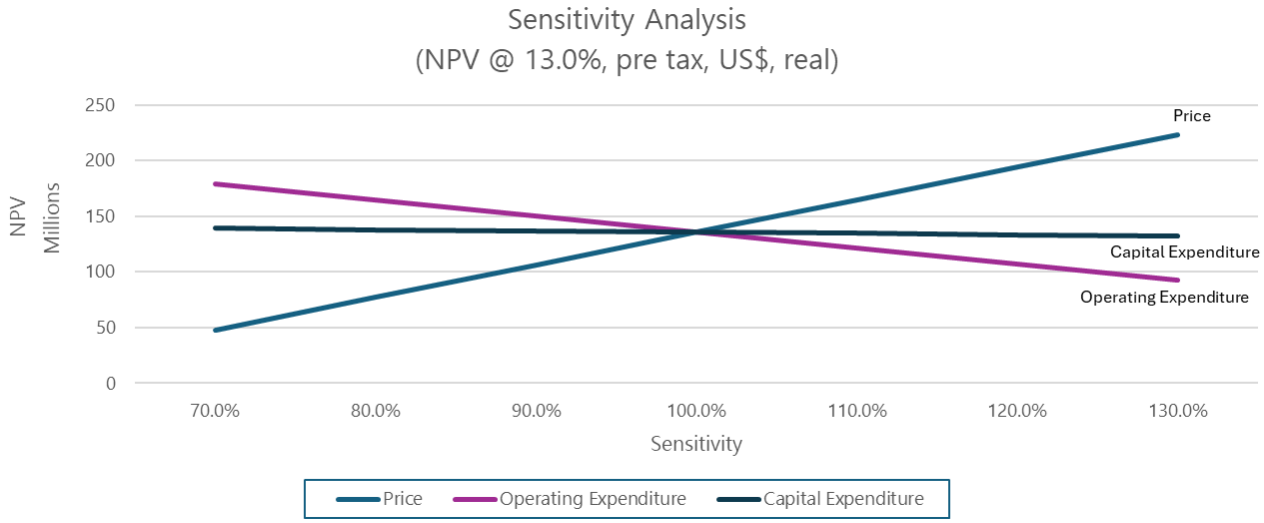

Figure 7: Sensitivity Spider Chart

Key Economic Driver	Sensitivity Factor						
	70.0%	80.0%	90.0%	100.0%	110.0%	120.0%	130.0%
Capital Expenditure	139.0	137.9	136.8	135.7	134.6	133.4	132.3
Operating Expenditure	178.9	164.5	150.1	135.7	121.3	106.9	92.4
Price	47.9	77.1	106.4	135.7	165.0	194.2	223.5

Table 4: US$M NPV Sensitivity Results

Further Sensitivity Analysis shows that both project NPV and IRR vary with the cost of flake graphite. As shown in Figure 8, the project is not financially viable at flake graphite cost of ~US$ 1,350 per tonne or higher, a 170% increase from the base price used in the financial model, if the prices of products (HPG and UHPG) and other input variables do not change.

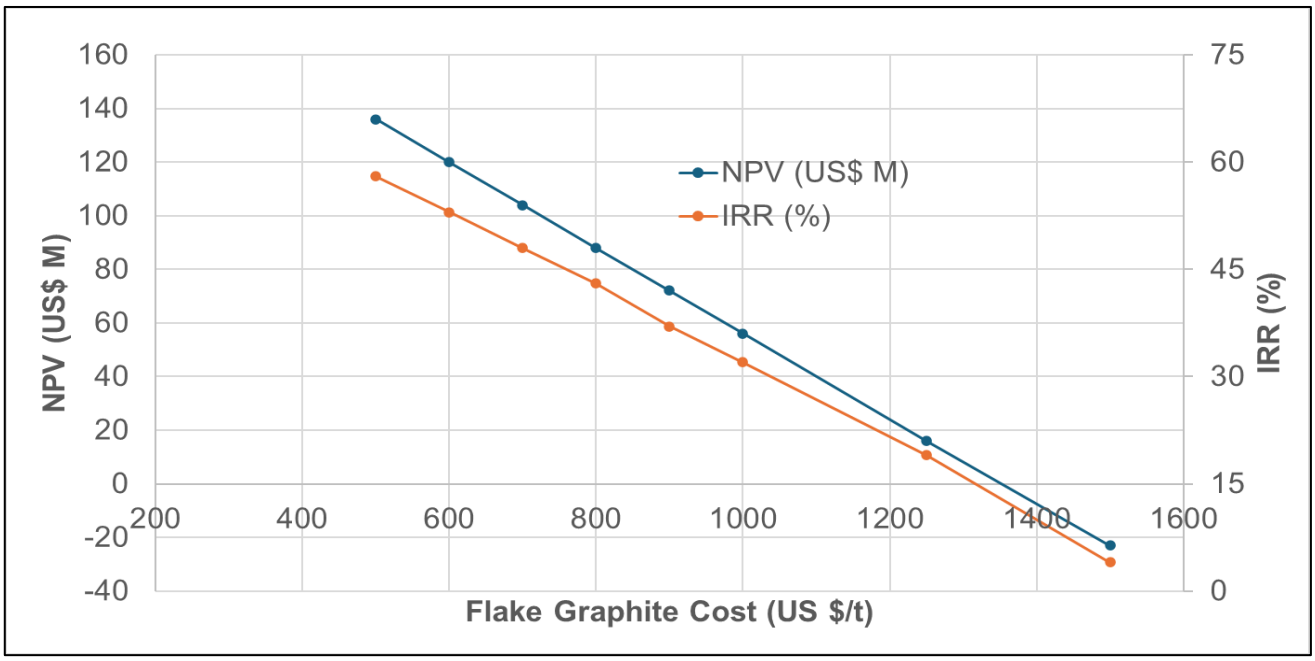

Figure 8: Sensitivity of IRR and NPV to the Flake Graphite Cost

Competition and Competitive Advantage

Thermal Purification – Graphite is typically processed at a temperature above 2,500°C in an electrically fired kiln. The ultra-high temperatures that are required for this process means that this is not a simple operation. To prevent oxidation of the graphite, the thermal purification process must be carried out in a vacuum (or inert atmosphere). The major issues presented by this processing technique are:

- Very high temperatures mean that the choice of materials of construction is very limited.
- Both capital cost and the operating cost are high due to high electrical energy requirements and control complexity.

Hydrofluoric Acid (HF) Purification - Graphite is immersed in a hydrofluoric acid (HF) and sulphuric acid (H_2SO_4) bath. The use of excess acid produces over 20 kg

of wastewater per kg of purified graphite. This method dissolves most of the impurities but the use of HF does impose serious issues.

- Advanced logistical requirements (HF has high vapour pressure even at ambient conditions)
- Handling and safety procedures
- Waste treatment
- Environment authority permitting

The use of HF poses several serious health and safety challenges as it is both a highly corrosive liquid as well as a very powerful contact poison. All these issues lead to higher cost, environmental and health risks.

A comparison of various graphite purification processes, including the Volt purification process, is shown below[4].

Graphite Purification Process	Capital Cost Intensity (US$/annual product tonne)
Volt Process	US$ 1,709
Thermal Purification	~US$ 4,750
HF	~US$ 2,750

Table 5: Purification Process Comparison

Next Steps

With the Scoping Study confirming the Alabama Graphite Refinery's strong economics, low-cost advantages, and strategic importance, Volt is now focused on executing a clear development pathway and is continuing to optimize the purification process via a planned pilot plant development and associated testwork. Subject to further testwork, pilot plant production, studies followed by offtake agreements, approvals, and financing, a Final Investment Decision (FID) will be made.

-ENDS-

This announcement was authorised for release by the Board of Volt Resources Limited.

For further information, please email
contact@voltresources.com

[4] Refer to EcoGraph Quarterly Activities Report dated, 30 January 2025

About Volt Resources Limited

Volt Resources Limited ("Volt") is a critical minerals and advanced materials company listed on the Australian Stock Exchange under the ASX code VRC. We are an established graphite producer and advanced materials developer.

In 2021, Volt acquired a 70% interest in each of the companies comprising the ZG Group, namely - Zavalievsky Graphite LLC (processing plant buildings, processing plant, mining equipment, power sub-station, and distribution), Stone Found LLC (crushed rock operations), and Graphite Invest LLC (holds a 79% interest in PJC Zavalievsky Graphite Kombinat – mine, land, main administration office building. It is this entity that holds the 636 hectares of freehold land on which the Zavalievsky mine, and other related buildings and facilities are located)[5].

Volt holds two licence applications that are prospective for lithium-borate mineralisation. The licence applications are located in Serbia and are west and south-west of the Serbian capital, Belgrade[6].

Volt is progressing the development of its large wholly owned Bunyu Graphite Project in Tanzania, as well as gold exploration in Guinea leveraging the Company's existing extensive networks in Africa.

The Bunyu Graphite Project in southeast Tanzania is ideally located near critical infrastructure with sealed roads running through the project area and ready access to the deep-water port of Mtwara 140km from the Project. In 2018, Volt reported the completion of the Feasibility Study ("FS") into the Stage 1 development of the Bunyu Graphite Project followed by a Feasibility Study Update published in August 2023. The Stage 1 development is based on a mining and processing plant annual throughput rate of 400,000 tonnes of ore to produce on average 24,780 tpa of graphite products. A key objective of the Stage 1 development is to establish infrastructure and market position in support of the development of the significantly larger Stage 2 expansion project at Bunyu[7].

The Guinea Gold Projects comprise three projects in Guinea, West Africa having a total area of 348 km^2. The Projects are located in the prolific Siguiri Basin which forms part of the richly mineralised West African Birimian Gold Belt.

Volt's wholly owned US subsidiary, Volt Energy Materials LLC, is headquartered in EcoComplex "Clean Energy Centre" in New Jersey, US and is focussed on the downstream graphite business including the high purity graphite processing technology. EcoComplex has laboratories which provide bench space for wet chemistry, chemical hoods, vented hood, a clean room, separate gas storage, and laboratory refrigeration. This facility also offers 1,200 square feet, two story scale-up space, specifically designed for pilot scale demonstration of new clean technologies.

Information in this report that relates to the production target of the Bunyu Graphite Project was released to the ASX on 14 August 2023 and is available to view on www.asx.com.au. Volt Resources Limited confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement, and that all material assumptions underpinning the production target continue to apply and have not materially changed.

---

[5] Refer to Volt's ASX announcement titled "Volt to Acquire European Graphite Business Following Completion of Due Diligence" dated 14 May 2021.

6 Refer to Volt's ASX announcement titled "Strategic European Lithium Acquisition – Jadar North" dated 18 November 2021.

7 Refer to Volt's ASX announcement titled "Feasibility Study Update for Bunyu Graphite Project Stage 1, Tanzania Delivers Significantly Improved Economics" dated 14 August 2023.

About Amity Mining

Amity Mining is a small independent process engineering company with over 40 years of experience in both mineral processing operations and development of green fields projects. A significant portion of this experience has been with both primary and secondary purification of naturally occurring flake graphite

About Agilitus

Agilitus is majority owned by our employees, who are united by our purpose – together, we embrace innovation to solve complex problems, for today and future generations.
As a trusted advisor to clients in the Resources, Energy and Industrial sectors, Agilitus provides multidisciplinary, fit-for-purpose engineering, design, project delivery and advisory capabilities.
Our teams leverage technical ingenuity across the entire project life cycle to help clients realise their development vision. This includes mitigating risk, improving safety, minimising operational disruptions, optimising asset performance, connecting to infrastructure and freight networks, navigating through statutory approvals, enhancing their social license to operate, making projects bankable and increasing value for all stakeholders. For further information refer to https://www.agilitus.com/