

Research and Development Program Update

Receipt of A\$472k 2024 R&D Rebate

The Company is pleased to announce that it has received the amount of A\$472,550.07 from the Australian Taxation Office in respect of the Commonwealth Government's research and development (R&D) concession. The amount represents the rebate for the Company's 2024 financial year allowable R&D expenditure.

The Company's R&D activities are undertaken in conjunction with Sunlands Co. under the parties' R&D partnership. These activities are covered by the Advanced Overseas Finding Certificate issued by AusIndustry for the 2023, 2024 and 2025 financial years.

AusIndustry's certification of the overseas R&D activities has been essential to the program's success to date. Accessing expertise and technical facilities not available in Australia continues to be an integral part of the parties' R&D collaboration.

R&D Workstreams

The R&D activities cover two main areas of study:

- High Purity Graphite (HPG) Workstream - the development of process technologies delivering Uley 2 high purity (>99%) flake graphite
- Thermal Energy Storage (TES) Media Workstream - the development of high temperature materials technologies for the processing and configuration of TES media for Sunlands Co.'s Graphite Cells.

Following registration in 2023, the Company finalised the design of the existing phase of R&D activities. These activities were designed to apply the successful outcomes from the pre-2023 R&D program to achieve the critical commercial objectives of scalable production of HPG and the manufacturing of the TES Media.

For the HPG Workstream, the parties confined activities to the development of a single process that satisfied two criteria, i.e.,

- i. a continuous uninterrupted process that would ensure consistent results from a range of Uley 2 concentrate specifications; and
- ii. a process that would include sufficient versatility to deliver HPG with a range of characteristics to suit multiple markets and applications.

In comparison, the parties' TES Media Workstream activities required subsequent revision following certain deficiencies uncovered in the original design. The R&D activities that were ultimately adopted ensured that TES Media configurations properly suited varying sizes of Graphite Cells without compromising the overall efficacy.



ABOUT QUANTUM GRAPHITE LIMITED

QGL is the owner of the Uley flake graphite mineral deposits located south-west of Port Lincoln, South Australia. The company's Uley 2 project represents the next stage of development of the century old Uley mine, one of the largest high-grade natural flake deposits in the world. For further information, [qgraphite.com](https://www.qgraphite.com)



ABOUT SUNLANDS ENERGY CO.

Sunlands Energy Co. is the leading developer of thermal energy storage technology designed to drive utility-scale steam turbine generators. The company designs thermal energy storage cells (TES) that are capable of restoring baseload generation, critical inertia to grid networks and eliminating the large scale curtailment of renewables generation. <https://www.sunlandsco.com/>

Successful Development of Commercially Scalable Processes

Over the last 30 months, the existing phase of activities has successfully resulted in the development of commercial scalable processes for the production of HPG at >99.7% and the manufacturing of TES Media with a range of application (mainly size-related) specific configurations (see Figure 1).

The results of the HPG Workstream were adopted for the design of the South Carolina 100,000 tonnes per annum HPG purification facility (see Figure 2), an essential element of the Project Utile proposal currently the subject of due diligence by US EXIM Bank (see ASX release of 20 December 2024, *US EXIM Bank Update - Lodgement Of Direct Loan And Guarantee Final Application*).

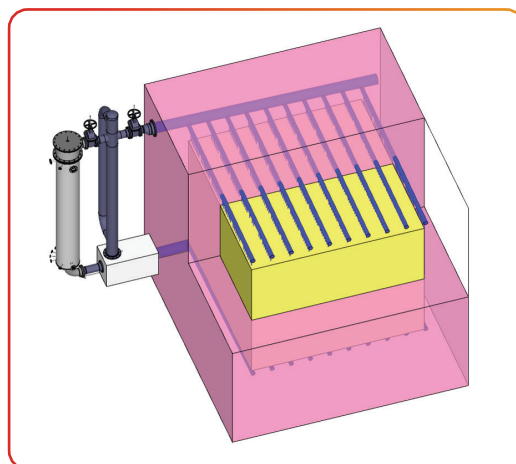


Figure 1. Engineering schematic of small-scale TES Media Cell

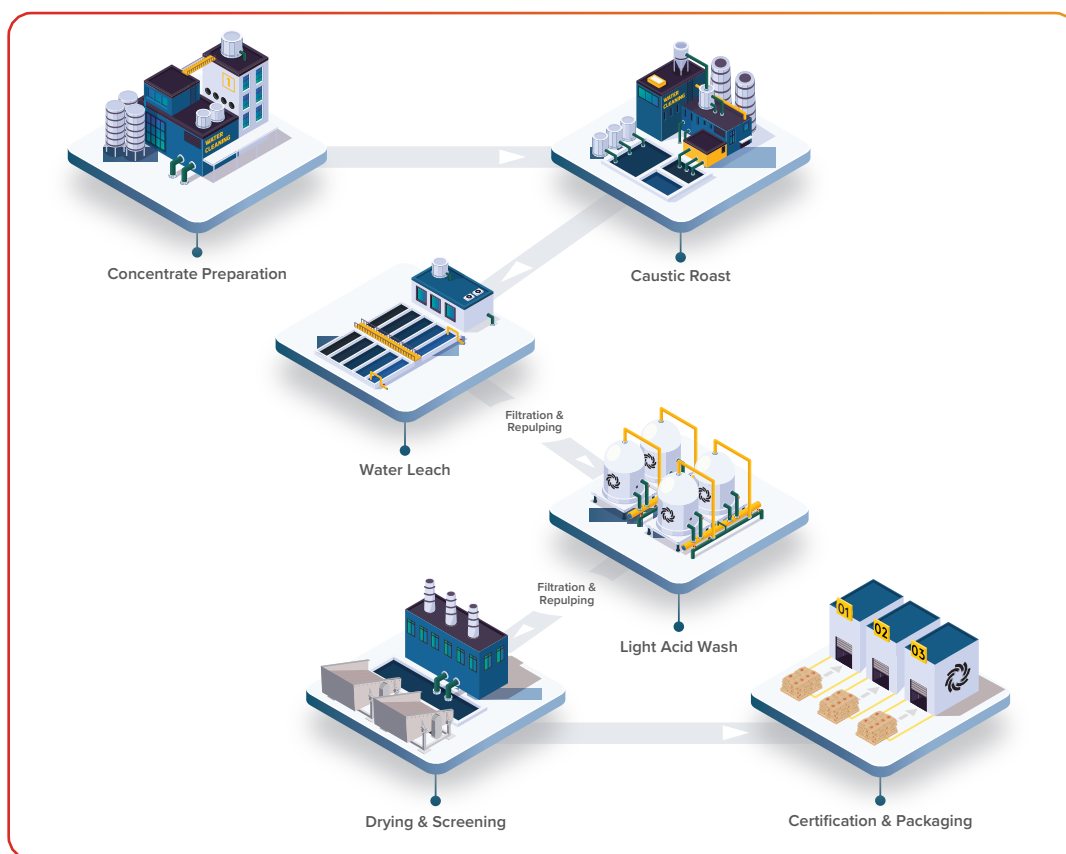


Figure 2. Process flowsheet for the South Carolina HPG production facility

As the TES Media Workstream is impacted by the size of Graphite Cells, data from the R&D activities delivered a set of results for various configurations of TES Media. These configurations are suited to a range of Graphite Cells, from small-scale and mid-scale (<200MWhrs) systems to large grid-connected scalable systems. The current design of the demonstrator Graphite Cell has adopted the unique configuration of TES Media suitable for small-scale systems. The parties are collaborating with a range of energy sector stakeholders, including power companies and energy storage providers, for the installation of the demonstrator Graphite Cell.

FOR MORE INFORMATION PLEASE CONTACT:

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