

**MEDIA RELEASE**  
 For Immediate Release  
 27 June 2023

## Successful Completion of Thermal Purification Treatment Uley Flake Achieves Purity of more than 99.99%

The Company announces today the second and final phase of the thermal purification results of the test work program conducted by INEMET, ProTherm Systems and Sunlands Power.

This final phase of the program was supervised by the Company's technical consultants and ALS' Perth laboratories at Balcatta conducted the elemental analysis following thermal treatment at 2,850°C.

The results confirm within the sensitivity of the test equipment:-

- Uley flake purity of 99.99% graphitic carbon (gC) is achievable from the Sunlands proprietary thermal treatment process
- The direct correlation between predicted impurity element removal (IER) and actual removal of these elements based on the boiling point data for all detectable Uley flake impurities

Process	Thermal Treatment @ °C		
	No thermal treatment	2,200°C	2,850°C
Purity Level	95.6%	97.7%	99.99%

Table 1: Graphite Purity after Thermal Treatment @ °C

These results have a significant impact on the Company's Uley 2 Project, i.e.,

- Based on this purity level the current market price for the Company's Uley 2 products is approximately US\$1,540<sup>1</sup> per tonne - compared to the basket price used in the 2019 DFS of US\$919<sup>2</sup>
- The Sunlands proprietary process is commercially scalable and can deliver this level of purity in a production environment
- Commercial demand for such purified product confirms the need to increase production levels in the anticipated revision of the Company's DFS



### 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](http://qgraphite.com).



### ABOUT SUNLANDS POWER

Sunlands Power is our joint venture with Sunlands Co. for the manufacture of coarse natural flake based thermal storage media and the manufacture of complete TES Graphite Cell facilities. The flake for the storage media will be sourced exclusively from the QGL's Uley mine. The manufactured media will be fitted within TES Graphite Cells and the completed facility delivered to Sunlands Co. for deployment as a grid connected long duration energy storage solution. <https://www.sunlandSCO.com/>

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## Commercial Impacts of Results

The results confirm that commercial production of Uley flake at a purity of 99.99% can be achieved utilising the Sunlands proprietary process, free of any chemical processes or processes with adverse environmental effects.

Managing Director, Sal Catalano commented that,

*“The results deliver on the Company’s commercial strategy to deliver the leading natural flake products across all applications. From high technology industrial uses to thermal storage products and feed material for Li-ion anode, Uley flake demonstrably delivers a superior product in an environmentally sustainable way.”*

As previously announced, the Company is updating its 2019 Definitive Feasibility Study (DFS). As part of this update the Company will revise the DFS basket price to reflect the market price for Uley flake at the 99.99% purity level. Based on the latest available market data, the market price across all Uley products at this purity level is approximately US\$1,540 (DFS, US\$919). The Company will revise the DFS basket price based on the relevant market price at the time of the release of the update to the DFS.

There is significant market demand, across industrial and battery markets segments, for such purified graphite. This strengthens the market case for the production level to be increased to more than 100,000 tonnes per year.

Head of Asia Pacific Trading for Uley 2 offtaker, MRI Trading AG, Andrew Briscoe said,

*“These are very exciting results. The capability to deliver Uley flake of this quality into the market puts MRI in an extraordinary position. We are now placed to market the highest quality flake to some of the most sophisticated customers in Europe and Japan.”*

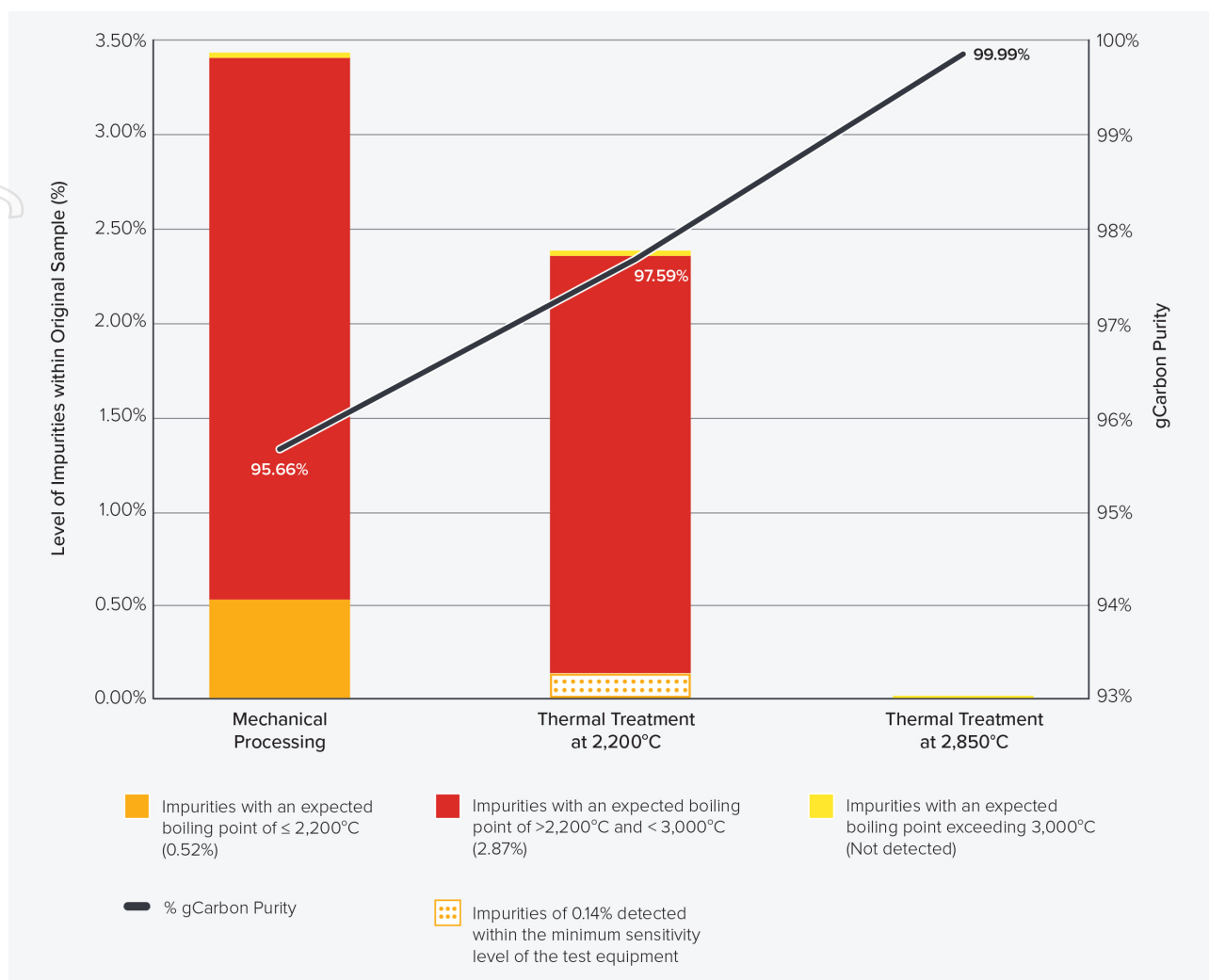
The increase in basket price is anticipated to be achieved with a capital investment of less than 50% of the capital cost disclosed in the DFS. Moreover, the use of the Sunlands thermal energy storage technology provides a pathway for use of renewable energy to produce Uley Green Purified Graphite.

## Results in Line with Projections

On 23 March 2023, the Company announced the first phase results of this program. These results confirmed that thermal treatment of Uley flake at a temperature of 2,200°C eliminated all impurities with a boiling point of up to 2,200°C and achieved a purity of 97.59% gC.

Based on the results of this thermal treatment, the Company’s technical team predicted that thermal treatment of Uley flake at temperatures of up to 3,000°C would achieve a purity of approximately 99.86% gC; these projections were based on the most prevalent impurities remaining after the first phase thermal treatment being Sulphur (S), Aluminium (Al), Calcium (Ca), Iron (Fe), and Silicon (Si).





The final phase of the thermal treatment was conducted at a temperature of 2,850°C under substantially similar conditions to that of the first phase program. The result of the thermal treatment of Uley flake at this temperature achieved a near imperfect IER and a purity of Uley flake of more than 99.99%. The chart above graphically illustrates the results of the first and second phases of the thermal treatment testwork program.

This process was developed by Sunlands as part of the thermal storage technologies it developed for the conversion of electrical power to heat and the storage of heat for delivery to thermal power plants.

**FOR FURTHER INFORMATION CONTACT:**

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<sup>1</sup>Based on Benchmark Mineral Intelligence current pricing data

<sup>2</sup>ASX Release of 11 December 2019, Further Update of Mining Study and Ore Reserve Estimate (DFS Update)



**ABOUT PROTHERM**

Protherm Systems, founded in July 1987, is a leading thermal process engineering company, based in South Africa. The Company designs and supplies a wide range of thermal and related thermal processing plant and equipment for industrial users world wide, such as Plate Heat Exchangers, Shell and Tube Heat Exchangers, Air Dryers and Evaporators.



**ABOUT INEMET**

The Institute for Non-Ferrous Metallurgy and High Purity Materials focuses on sustainable and innovative processes that rethink existing production processes and the handling of supposed waste products in the spirit of the circular economy and zero waste thinking. INEMET's dedicated team work toward a greener future and the revolutionizing of non-ferrous metallurgy. It develops existing processes within pyrometallurgy, hydrometallurgy and the semiconductor industry in working groups and in a variety of projects. <https://tu-freiberg.de/en/fakult5/inemet>

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