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PRELIMINARY BATTERY TESTING SHOWS HAZER GRAPHITE OUTPERFORMS BENCHMARKS

- **Hazer successfully develops and tests small-scale Lithium-ion batteries with Hazer's synthetic graphite used as the active material**
- **Hazer graphite shows specific capacity on initial discharge of 445 mAh/g, compared to commercial synthetic graphite with 331 mAh/g capacity**
- **Results are superior to reported first discharge results from natural flake graphite, without significant post-reaction processing for Hazer product**
- **Hazer non-optimised product also exhibited excellent performance over 10 cycles, comparable to commercial benchmark material**

PERTH, AUSTRALIA; 13th DECEMBER 2016: Hazer Group Ltd ("Hazer" or "the Company") (ASX:HZR, HZRO) is pleased to provide the market with preliminary results from testing its synthetic graphite in Lithium-ion batteries.

Initial results performed within the School of Chemical and Biomolecular Engineering at Sydney University showed the company's graphite product significantly outperformed the benchmark material, with an initial discharge specific capacity of 445 mAh/g (milliampere hour per gram) compared to 331 mAh/g capacity performance from a synthetic commercial graphite.

Theses results also significantly exceed the performance of natural graphite anodes, which typically show first discharge capacity in the range of 360-370 mAh/g, and highlight that Hazer's graphite, even as a non-optimised product, outperforms both synthetic and natural graphite products on first discharge capacity.

	Hazer Graphite (99% tgc)	Synthetic Commercial Spherical Graphite (>99.5% tgc)	Natural Graphite*
First Discharge Capacity	445 mAh/g	331 mAh/g	360-370 mAh/g

** Reported values from public announcements by ASX-listed and other graphite mining companies.*

These initial results are extremely encouraging as the Hazer graphite used was subject only to simple chemical purification after initial methane decomposition and was used at purity (total graphite content) of ~99%. No additional purification, or particle engineering (such as spheronisation) was undertaken for these trials, and further optimisation has the potential to further improve the performance of Hazer graphite in battery trials.

All battery cell trials were undertaken at standard industry testing rate of 0.2 C (5 hours charge, 5 hours discharge rate) for 10 cycles, to show the products irreversible capacity (first cycle) and reversible capacity (2nd to 10th cycles). The discharge capacity data for the first 10 cycles is shown in Figure 1 below:

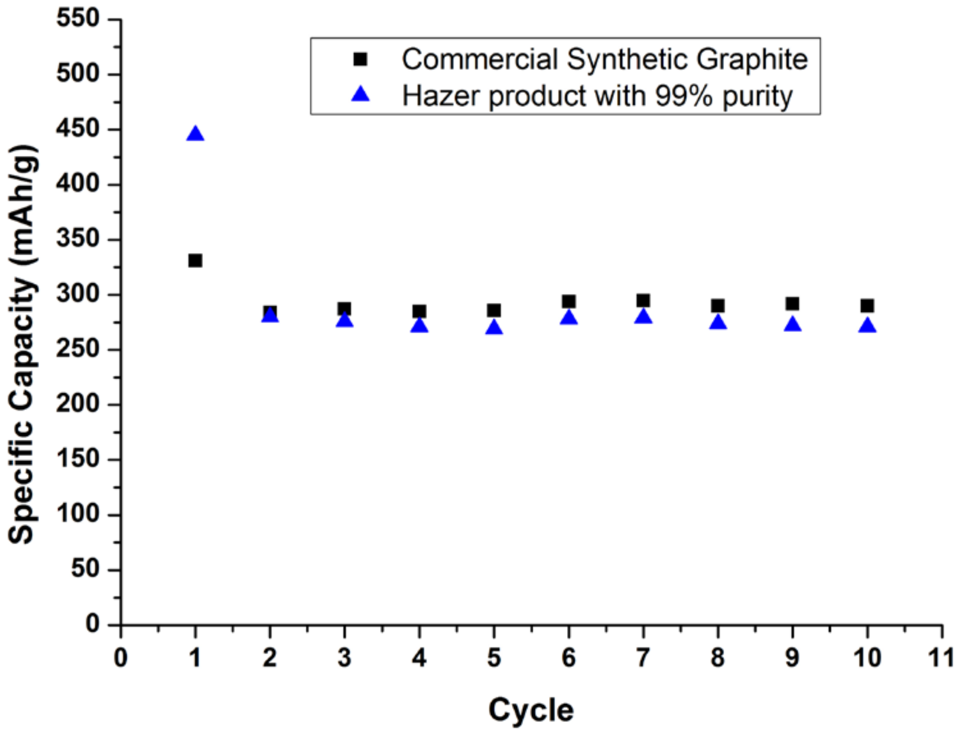

Figure 1. Specific Discharge capacity of Hazer products in comparison to commercial synthetic spherical graphite

Testing and analysis was undertaken by Hazer in collaboration with Sydney University's School of Chemical and Biomechanical Engineering. Under the testing program, lithium-ion half-cell coin batteries were fabricated and tested using Hazer's synthetic graphite as the active material, lithium chips as the cathode, and an industry standard electrolyte to test the discharge capacity and discharge efficiency. The trials were carried out using industry standard battery analysis equipment (Figure 2), and reference cells were prepared using commercial synthetic spherical graphite as an anode for comparison during testing.

Figure 2. Hazer's battery analysis equipment within the University of Sydney

Results highlight that Hazer graphite shows outstanding irreversible capacity performance in the first discharge (first cycle), and exhibits performance over 10 cycles substantially equivalent to commercial product, with reversible capacity of 275 mAh/g and 96% capacity retention. These results highlight Hazer's graphite potential for use in the growing Lithium-ion battery market.

These initial results are very promising and provide a solid foundation for the ongoing test work underway in collaboration with the University of Sydney. The company is currently undertaking longer term stability testing and scaling up into a full cell testing. Hazer has also identified further optimisation that is expected to improve the efficacy of Hazer graphite in battery applications.

Graphite is one of the principal materials (by weight) required in lithium ion batteries, with batteries generally requiring 10 to 20 times more graphite than lithium. Increased use of Li-ion batteries in new products including electric vehicles (including hydrogen-fuelled fuel cell vehicles), and off-grid energy storage systems, as well as growing global use of personal electronic devices powered by Li-ion batteries, has seen the lithium-ion battery market offer the fastest growing market demand for graphite globally, and battery grade graphite typically commands a substantial price premium.

Recently Hazer demonstrated substantial improvements in raw (unpurified) graphite purity, with consistent production now generating graphite with raw purity of 95% (up from 86%wt). Hazer is in the process of purifying this raw product and intends to conduct further battery application tests on the range of graphite products obtained through tailoring the core Hazer process.

Prof Andrew Minett, Chairman of Hazers Group's Science Advisory Committee, commented;
"These preliminary half-cell battery results for Hazer graphite are extremely encouraging, performing on-par with a standard commercial spherical graphite and showing very good rate capability. Increases in performance can be expected with further optimisation and as purity levels increase. It is also expected that such promising results will translate across to full-cell platform testing over the coming months. These results show that Hazer graphite is suitable for applications in the burgeoning secondary battery markets as not only conductive fillers but also as the active materials in anode production."

ABOUT HAZER GROUP LTD
Hazer Group Limited ("Hazer" or "The Company") is am ASX-listed technology development company undertaking the commercialisation of the Hazer Process, a low-emission hydrogen and graphite production process. The Hazer Process enables the effective conversion of natural gas and similar feedstocks, into hydrogen and high quality graphite, using iron ore as a process catalyst.

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