

# Alabama Graphite Corp. Announces Research Partnership with United States Department of Energy's Oak Ridge National Laboratory

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## Receives Positive Preliminary Battery-Ready Graphite Test Results

- The Energy Graphite(TM) Company
- Sourced and Manufactured in the United States of America

TORONTO, Apr 10, 2017 - [Alabama Graphite Corp.](#) ("AGC" or the "Company") (TSX VENTURE:CSPG)(OTCQB:CSPGF)(FRANKFURT:1AG) is pleased to announce that the Company's 100% wholly owned subsidiary - Alabama Graphite Company, Inc. ("AGC USA."), a corporation registered in the state of Alabama, USA - has entered into a research partnership with the United States Department of Energy's Oak Ridge National Laboratory ("ORNL") of Oak Ridge, Tennessee, USA. The Company is working with ORNL's lithium-ion ("Li-ion") battery team, led by ORNL Senior Staff Scientist Dr. David L. Wood III and Research and Development Staff Scientist Dr. Zhijia Du, under the laboratory's Sustainable Transportation Program. AGC USA will be applying for DOE grants and other US-based research-and-development funding initiatives, having ORNL as the participating laboratory. Per the Company's February 8, 2017 announcement, [Alabama Graphite Corp. Receives Commercial and Government Entity \(CAGE\) Code Assigned by the US Department of Defense's \(DoD's\) Defense Logistics Agency \(DLA\)](#), at the request of ORNL, AGC USA is registered to pursue United States federal government funding to advance its research and development, and technology commercialization efforts, as well as to conduct business directly with the US federal government and its various agencies, including the US Department of Defense ("DoD") and the US Department of Energy ("DOE").

ORNL's Li-ion battery team's internal initiative is three-fold:

- 1.) Reduce battery costs;
- 2.) Increase energy capacity; and
- 3.) Promote domestic production of Li-ion batteries and the related supply chain.

## TEST RESULTS

In late February 2017, AGC USA sent evaluation samples of its sourced-and-manufactured-in-USA, natural Coated Spherical Purified Graphite ("CSPG") to ORNL for electrochemical testing. Two size specifications of AGC's battery-ready CSPG were conveyed; a D50 19-micron (" $\mu\text{m}$ ") and a D50 26- $\mu\text{m}$  evaluation sample.

Early preliminary test results received from ORNL were positive, with Li-ion battery cycling efficiencies of 95.21% (Irreversible Capacity Loss of 4.79%) for the 19- $\mu\text{m}$  CSPG and 97.40% for the 26- $\mu\text{m}$  CSPG (Irreversible Capacity Loss of 2.60%) during second-cycle Coulombic efficiencies. Although preliminary and not optimized, these early results indicate that AGC's CSPG outperforms costlier and environmentally harsh commercially available synthetic graphite. Please refer to the Company's January 19, 2016 announcement, *'Independent Test Results: [Alabama Graphite Corp. Succeeds in Producing High-Performance Coated Spherical Purified Graphite \(CSPG\) for Lithium-ion Batteries](#)',* in which independent testing indicated D50 15.8  $\mu\text{m}$  synthetic graphite had cycling efficiencies of 93.94% (Irreversible Capacity Loss of 6.06%), versus AGC's test results of 94.91% (Irreversible Capacity Loss of 5.09%).

ORNL achieved an unusually high electrode loading of 13 milligrams per square centimeter (" $\text{mg}/\text{cm}^2$ ") with AGC's CSPG. A typical natural coated spherical graphite will coat at only 10 to 12  $\text{mg}/\text{cm}^2$ . This means that a typical battery could potentially fit approximately 10% by weight ("wt%") of AGC's CSPG. The more graphite per battery cell equates to greater energy density per each individual cell and, ultimately, a better performing battery.

President and Chief Executive Officer, Donald Baxter commented, *"We are very encouraged by these*

*positive initial electrochemical test results from ORNL. AGC's battery-ready CSPG has demonstrated, once again, its excellent high performance in Li-ion batteries and its superiority to premium quality synthetic graphite.*

*"Additionally, we are very pleased with the electrode loading result, another very important metric in battery-anode graphite performance. Because ORNL's results were not optimized, after thorough review and analysis, my technical team and I have reason to believe that the electrode loading holds the potential to increase to 13.5 to 14 mg/cm<sup>2</sup>. For AGC greater electrode loading would mean more sales of graphite per battery unit; for the end user community that would mean a battery with a longer runtime. The reason for the observed phenomenon in AGC's unusually high electrode loading is due to the high packing density of the Company's CSPG. The packing is defined quantitatively by the Tap density and Scott Volumeter ASTM-referenced methods. One of the benefits of working with a DOE national laboratory is that our relationship with ORNL allows for significantly faster test results," stated Mr. Baxter. "We look forward to announcing to the market complete electrochemical test results from ORNL and DoD battery manufacturers as soon as they become available."*

For more information about AGC's specialty, secondary processing to produce its CSPG, in addition to detailed explanations of tap density, bulk density and Scott Volumeter, please refer to the June 2016 independent report, 'Alabama Graphite's Coated Spherical Purified Graphite for the Lithium-ion Battery Industry,' researched and prepared by Dr. Gareth P. Hatch, CEng, FIMMM, FIET, President of Innovation Metals Corp., and Founding Principal of Technology Metals Research, LLC.

AGC USA's graphite is sourced from its flagship, 100%-owned Coosa Graphite Project - located in Coosa County, Alabama, USA - and is purified via the Company's propriety, low-temperature thermal purification process. AGC USA's environmentally responsible and sustainable graphite purification process does not utilize acids that are commonly regarded as dangerous and environmentally harmful (e.g. hydrofluoric acid - as is commonly used in Chinese graphite production [source: Benchmark Mineral Intelligence, 2017] - hydrochloric acid, sulfuric acid, nitric acids, or alkali roasting, caustic-soda roasting, etc.), nor does the process require copious amounts of scarce, clean water or costly, energy-intensive high-temperature thermal upgrading. Please refer to the Company's February 17, 2017 announcement, '[Alabama Graphite Corp. Achieves 99.9997% Graphite Purity via Proprietary, Environmentally Responsible and Sustainable Purification Process; Exceeds Nuclear Graphite Purity Requirements.](#)'

AGC USA and ORNL have outlined several potential avenues to pursue for cooperation and collaboration, including further optimizing our CSPG via research and development efforts and demonstrating manufacturing capability. AGC USA intends to aggressively pursue all potential US government granting and funding opportunities as both a Principal Investigator ("PI") and a Co-Principal Investigator ("Co-PI"), in conjunction with ORNL.

A technical data sheet ("TDS") for AGC's ULTRACSPG® battery-ready anode graphite - the first trademarked sourced-in-America, natural battery-ready graphite for use in Li-ion batteries - is available at [www.alabamagraphite.com](http://www.alabamagraphite.com).

On behalf of the Board of Directors of

[Alabama Graphite Corp.](#)

Donald K. D. Baxter, P.Eng.

President, Chief Executive Officer and Executive Director

#### QUALIFIED PERSON

Donald K. D. Baxter, P.Eng., President, Chief Executive Officer and Executive Director of [Alabama Graphite Corp.](#), is a Qualified Person as defined by National Instrument 43-101 ("N.I. 43-101") guidelines, and has reviewed and approved the content of this news release.

## ABOUT OAK RIDGE NATIONAL LABORATORY

ORNL is managed by UT-Battelle for DOE's Office of Science. The Office of Science is the single largest supporter of basic research in the physical sciences in the United States, and is working to address some of the most pressing challenges of our time. For more information, please visit <https://science.energy.gov>

## ABOUT ALABAMA [Graphite Corp.](#)

[Alabama Graphite Corp.](#) is a Canadian-based flake graphite exploration and development company as well as an aspiring battery materials production and technology company. The Company operates through its wholly owned subsidiary, Alabama Graphite Company Inc. (*a company registered in the state of Alabama*). With an advancing flake graphite project in the United States of America, [Alabama Graphite Corp.](#) intends to become a reliable, long-term U.S. supplier of specialty high-purity graphite products. A highly-experienced team leads the Company with more than 100 years of combined graphite mining, graphite processing, specialty graphite products and applications, and graphite sales experience. [Alabama Graphite Corp.](#) is focused on the exploration and development of its flagship Coosa Graphite Project in Coosa County, Alabama, and its Bama Mine Project in Chilton County, Alabama as well the research and development of its proprietary manufacturing and technological processing process of battery materials.

[Alabama Graphite Corp.](#) holds a 100% interest in the mineral rights for these two U.S.-based graphite projects, which are both located on private land. The two projects encompass more than 43,000 acres and are located in a geopolitically stable, mining-friendly jurisdiction with significant historical production of crystalline flake graphite in the flake graphite belt of central Alabama, also known as the Alabama Graphite Belt (*source: U.S. Bureau of Mines*). A significant portion of the Alabama deposits are characterized by graphite-bearing material that is oxidized and has been weathered into extremely soft rock. Both projects have infrastructure in place, are within close proximity to major highways, rail, power and water, and are approximately three hours (by truck or train) to the Port of Mobile, the Alabama Port Authority's deep-seawater port and the ninth largest port by tonnage in the United States (*source: U.S. Army Corps of Engineers/USACE*). The state of Alabama's hospitable climate allows for year-round mining operations and the world's largest marble quarry (which operates 24 hours a day, 365 days a year in Sylacauga, Alabama), is located within a 30-minute drive of the Coosa Graphite Project.

On November 30, 2015, [Alabama Graphite Corp.](#) announced the results of PEA for the Coosa Graphite Project, indicating a potentially low-cost project with potential positive economics. Please refer to the Company's technical report titled "[Alabama Graphite Corp. Preliminary Economic Assessment \(PEA\) on the Coosa graphite Project, Alabama, USA](#)" dated November 27, 2015, prepared by independent engineering firms AGP Mining Consultants Inc. and Metal Mining Consultants Inc., and filed on SEDAR at [www.sedar.com](http://www.sedar.com).

*Note: a preliminary economic assessment is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the preliminary economic assessment will be realized.*

*\* Inferred Mineral Resources represent material that is considered too speculative to be included in economic evaluations. Additional trenching and/or drilling will be required to convert Inferred Mineral Resources to Measured or Indicated Mineral Resources. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve.*

[Alabama Graphite Corp.](#) is a proud member of the National Association of Advanced Technology Batteries International ("NAATBatt International"), a U.S.-based, not-for-profit trade association commercializing advanced electrochemical energy-storage technology for emerging, high-tech applications.

For further information and updates on the Company or to sign up for [Alabama Graphite Corp.](#) News, please visit [www.alabamagraphite.com](http://www.alabamagraphite.com) or follow, like and subscribe to us on Twitter, Facebook, YouTube, and LinkedIn.

## FORWARD-LOOKING STATEMENTS

This press release contains forward-looking information under applicable Canadian securities laws ("forward-looking statements"), which may include, without limitation, statements with respect to any potential relationships between the Company and any end users and/or the DoD. The forward-looking statements are based on the beliefs of management and reflect [Alabama Graphite Corp.](#)'s current expectations. When used in this press release, the words "estimate", "project", "belief", "anticipate", "intend", "expect", "plan", "predict", "may" or "should" and the negative of these words or such variations thereon or comparable terminology are intended to identify forward-looking statements. Such statements reflect the current view of [Alabama Graphite Corp.](#) with respect to risks and uncertainties that may cause actual results to differ materially from those contemplated in those forward-looking statements.

By their nature, forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements, or other future events, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such factors include, among other things, the interpretation and actual results of current exploration activities; changes in project parameters as plans continue to be refined; future prices of graphite; possible variations in grade or recovery rates; failure of equipment or processes to operate as anticipated; the failure of contracted parties to perform; labor disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of exploration, as well as those factors disclosed in the Company's publicly filed documents. Forward-looking statements are also based on a number of assumptions, including that contracted parties provide goods and/or services on the agreed timeframes, that equipment necessary for exploration is available as scheduled and does not incur unforeseen breakdowns, that no labor shortages or delays are incurred, that plant and equipment function as specified, that no unusual geological or technical problems occur, and that laboratory and other related services are available and perform as contracted. Forward-looking statements are made based on management's beliefs, estimates and opinions on the date that statements are made and [Alabama Graphite Corp.](#) undertakes no obligation to update forward-looking statements (unless required by law) if these beliefs, estimates and opinions or other circumstances should change. Investors are cautioned against attributing undue certainty to forward-looking statements. [Alabama Graphite Corp.](#) cautions that the foregoing list of material factors and assumptions are not exhaustive. When relying on [Alabama Graphite Corp.](#) forward-looking statements to make decisions, investors and others should carefully consider the foregoing factors and assumptions and other uncertainties and potential events.

[Alabama Graphite Corp.](#) has also assumed that the material factors and assumptions will not cause any forward-looking statements to differ materially from actual results or events. However, the list of these factors and assumptions is not exhaustive and is subject to change and there can be no assurance that such assumptions will reflect the actual outcome of such items or factors.

*Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.*

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