

Archer Exploration Two Year Deal Signed for Commercial Graphite-Graphene Development with University of Adelaide

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Melbourne, Australia (ABN Newswire) - Australia's potential to develop breakthrough global products around the acclaimed properties of graphene - a derivative of graphite - has been given a boost through a research agreement announced today by ASX-listed explorer, [Archer Exploration Ltd.](#) (ASX:AXE) and the University of Adelaide.

Archer has teamed up with the University's School of Chemical Engineering for a two-year \$200,000 research program.

The research will focus on the best commercial uses for the specific graphite and graphene types originating from Archer's wholly-owned, high grade Campoona and Sugarloaf graphite deposits, on South Australia's Eyre Peninsula.

In particular, the program will focus on new product opportunities especially in the agricultural and environmental arenas.

Graphene - "New age" material

Graphene - a one atom thick layer of carbon - has outstanding mechanical, electrical, optical, thermal and chemical properties with many industry observers dubbing it The New Age material.

The new research agreement follows an initial collaboration between the Company and the University last year when tests by the University's School of Chemical Engineering demonstrated that Campoona's mineralogy was readily amenable to the production of graphene and graphite products.

The raft of such potential products included graphene nanosheets, powders, films, membranes, electrodes and nanocarriers as well as a range of conductive and magnetic gels.

Those results were sufficient for Archer to further probe the probability of delivering two long-term production and revenue earnings streams from Campoona and nearby Sugarloaf, based around high grade to ultra-pure fine natural flake graphite, and, high tech high value graphene and graphite related products.

New era of carbon-based technologies

Archer's Managing Director, Mr Gerard Anderson, said today that as the Company already had advanced metallurgical results available from Campoona, the next step was to fully explore value-add options.

"The value-add focus will build on the outstanding results of the initial collaboration and will seek to define the optimal route to commercialise the type of products best suited to our graphite deposits," Mr Anderson said.

"There is little doubt globally that we are entering a new era of carbon-based technologies," he said.

"It is Archer's objective to not only be a low risk, long-term supplier of high grade graphite concentrates into global markets but also to develop new applications based on graphene and graphite derivative materials to deliver measureable returns for our shareholders in terms of sustainable sales volumes, quality of product and customer allegiance.

"The two-year research program with the University will provide clarity on our commercial product options and put momentum into project funding."

"If Australia doesn't take leadership with efforts to commercialise value-adding opportunities around its

high-grade graphite deposits, it will be beaten to the graphite-graphene punch by other countries striving to achieve early development and first mover position in these emerging markets." The uses for graphene and graphite-related products continue to grow including in display screens in mobile devices, in organic light emitting diodes (OLED), faster charging lithium-ion batteries, high performance ultracapacitors, high strength composite materials, storing hydrogen for fuel cell powered cars, lower cost fuel cells, water desalination, more efficient lower cost solar cells, high frequency transistors and widespread medical applications.

The joint Archer-University of Adelaide research program will pay specific attention to the characterisation of Archer's Campoona and Sugarloaf ores.

"We have identified several very exciting opportunities in the agricultural, environmental and bio-remediation industries that offer large scale and universal applications," Mr Anderson said.

"There is little doubt that graphite-graphene presents a significant and rapidly emerging opportunity for Archer."

The Company is well advanced in studies to support the Campoona Mining Lease Proposal, which Archer plans to lodge with the SA Government during Q3 calendar 2014.

Benefits of Campoona location

Campoona, located 15km north of Cleve, has a total JORC 2004 Resource of 2.57 million tonnes @ 12.3% C (based on 5% C lower cut-off). The deposit is located close to infrastructure with existing high voltage power line and gazetted truck routes running through the tenement area. The Sugarloaf deposit located 10 kilometres north of Campoona has an Exploration Target* of 40-70 million tonnes grading 10-12% C.

* The potential quantities and grades presented are conceptual in nature, there has been insufficient exploration to define an overall Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource

Campoona is different from almost all other graphite deposits in the world in its ability to deliver high value, highly crystalline ultra-fine graphite using conventional mechanical cell flotation.

Metallurgical bench-scale testing of Campoona graphite has delivered graphite concentrates grading 97-99.4% TGC (total graphitic carbon) at recoveries of 90%. Acid cleaning of lower grade concentrates (92% TGC) results in concentrates grading >99.5% TGC.

"These results reinforce our confidence that Archer is very likely able to enter the higher value end of the graphite market to give the project robustness. Any commercialisation opportunities arising from the research would add substantially to project returns," Mr Anderson said.

To view figures, please visit:

<http://media.abnnewswire.net/media/en/docs/76791-ASX-AXE-789614.pdf>

About Archer Exploration Limited:

[Archer Exploration Ltd.](#) (ASX:AXE) is a graphite, magnesite, copper, gold and manganese explorer focused on the discovery of world-class ore deposits.

The company has carefully acquired a portfolio of projects, covering an area in excess of 5300 km², in the highly prospective Gawler Craton and Adelaide Fold Belt regions of South Australia. All projects are 100% owned by the Company.

Archer also has earned the right to 100% of minerals other than uranium on EL4693 Wildhorse Plain located near Cleve on Eyre Peninsula.

The Company's flagship Campoona and Sugarloaf graphite deposits occur in the Cleve district where the Company has tenure of 933km² in the emerging graphite province.

[Archer Exploration Ltd.](#) has an experienced board and management team and has the ability to maximise the potential of the company's world-class projects.

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