

ASX Announcement (ASX:AXE)

30 October 2017

## **Archer expands graphite capability with strategic acquisition of Carbon Allotropes**

### **Highlights**

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- Archer has acquired 100% ownership of Carbon Allotropes Pty Ltd ("Carbon Allotropes").
  - Carbon Allotropes operates an online graphite and graphene marketplace ([www.carbonallotropes.com](http://www.carbonallotropes.com)).
  - Purchase of Carbon Allotropes completed today, no external approvals required.
  - Highly complementary to Archer's operations and increases the company's presence in the international graphite and graphene market.
  - Dr Mohammad Choucair, member of World Economic Forum's Global Future Council for Advanced Materials, to join Archer as CEO.
  - Dr Choucair will drive the growth of Carbon Allotropes' business and Archer's graphite business.
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Archer Exploration Limited (ASX: AXE) ("Archer" or "the Company") is pleased to announce it has completed the purchase of 100% ownership of Carbon Allotropes, an online graphite and graphene market place that sells graphene and graphite products to international and domestic customers ("Transaction").

Carbon Allotropes is a natural extension providing a critical distribution capability to Archer's Eyre Peninsula Graphite Project. Expected benefits from the combined group include:

- Enhanced service offering – Carbon Allotropes online graphite and graphene sales and consulting services are highly complementary to Archer, and will benefit from Archer's development of the Eyre Peninsula Graphite Project.
  - Cross-sell and up-sell opportunities – to new and existing, global graphite and graphene customers.
  - Strengthened competitive position by combining distribution, production and supply.
  - Accelerates growth in the graphite and graphene space – increased synergies and opportunities for Archer and Carbon Allotropes in fast growing international and domestic markets.
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## **Carbon Allotropes Business Overview**

Carbon Allotropes is an online graphite, graphene and carbon product sales business with existing customers internationally and domestically. Carbon Allotropes' clients are synergistic with Archer's potential clients and include multinational companies, research institutions and development networks in Australia, Europe, the US and Asia. The business invoices approximately 25 clients per year, being a mix of large corporate and e-commerce businesses.

Carbon Allotropes provides its registered customers with high-quality graphite, graphene and other carbon based advanced materials products. It has over 100 registered customers and attracts over 25,000 visits to its website per year. In addition to the online marketplace, Carbon Allotropes also offers consulting and other associated services.

Carbon Allotropes' competitive advantages include its reputation, wide range of consolidated product offering, and geographic reach.

Post-acquisition, Carbon Allotropes' founder, Dr Mohammad Choucair will be appointed as CEO of Archer, and will be responsible for continuing Carbon Allotropes' growth and the development of Archer's Eyre Peninsula Graphite Project.

## **Archer and Carbon Allotropes**

Archer's proposed integrated graphite mine and graphite / graphene processing facility and Carbon Allotropes' businesses are highly aligned in relation to target clients, creating an opportunity for rapid growth both domestically and internationally.

Both Archer and Carbon Allotropes are focussed on supplying graphite and graphene based products and will serve the same type of customers. Carbon Allotropes' registered consumers and clients will benefit from Archer's development of the EPGP in South Australia which will allow Archer to supply high-quality graphite and graphene products. Archer will benefit from Carbon Allotropes' expertise in attracting and engaging with consumers and generating leads.

Archer believes that, in time, there will be substantial product and revenue synergies, along with efficiencies from combining and strengthening the two companies.

Carbon Allotropes will retain its brand and focus following the appointment of Dr Mohammad Choucair as CEO of Archer, and will continue to operate in its current form utilising Archer's resources and capabilities to further strengthen its business.

## **Appointment of Dr Choucair**

Dr Choucair was the first person in the world to directly synthesise graphene (the thinnest material known) in gram-scale quantities as a bulk powder – now a common goal amongst researchers. This work was a paradigm shift because until then, graphene could only be isolated from graphite. The result was a repeatable, simple, and an economical way to scale the production of graphene. The work resulted in publication in the prestigious Nature Nanotechnology journal, has received 840 citations, and ranks in the top 1% in the field of Materials Science. Subsequently, the work was identified by the Royal Society of Chemistry as one of the biggest chemical breakthroughs of 2008, and in 2011 Dr Choucair received the coveted Cornforth Medal from the Royal Australian Chemical Institute.

Dr Choucair is currently developing a nanoscale device as part of a quantum computer that could be capable of indirectly addressing problems associated to human health and the environment. He invented the carbon material that formed the basis of the device. A current limitation of quantum computers is that they only operate efficiently at  $-273^{\circ}\text{C}$  however, through his work Dr Choucair has overcome this barrier and devised the technology that could allow quantum computers to be operated at a room temperature – a significant breakthrough. The global impact of the innovation has since been recognised through publication in the prestigious journal Nature Communications, and currently ranks in the top 2% of all fields.

Dr Choucair has also been actively involved in the enhancement of lithium ion battery storage devices and demonstrated some of the first examples of graphene application in batteries. The graphene synthesised during his PhD research improved the performance of new-age lithium ion batteries, which led to enormous interest in energy storage devices that use bulk, solid forms of graphene. The works have received 655 citations in less than 6 years and rank in the top 1% of the field of Chemistry. In addition, Dr Choucair has synthesised a novel class of metal-decorated fullerenes ('fullerides') that were capable of reversible hydrogen storage with potential applications in hydrogen fuel cells and industrial catalysis.

Dr Choucair was recognised by Virgin Australia as one of the Top Australian Stars of 2016, honouring people from diverse fields who showed excellence, dedication, ambition and community-mindedness in offering new perspectives on seemingly intractable problems.

Dr Choucair is currently serving a 2-year mandate as Councillor on the World Economic Forum's Global Future Council for Advanced Materials. The Council is tasked with developing innovative ideas, frameworks, processes and recommendations for the effective, value based governance of emerging technologies. As part of this work, Dr Choucair has contributed to a 2030 roadmap that was prepared for the major Davos meeting of world politicians and business leaders. The roadmap outlined high-level interactions between Global Systems and Enablers of the Fourth Industrial Revolution, responding to challenges around the future of energy, the environment and advanced computing. Dr Choucair is now involved with the Council in drafting aspects related to Advanced Materials in The Global Risks Report.

## **Transaction Overview**

Archer has agreed to acquire 100% of the shares in Carbon Allotropes. The sale and purchase of the Carbon Allotropes business is unconditional with execution of the agreements and completion taking place today. The purchase price for Carbon Allotropes is the issue of 3,000,000 performance rights to Dr Choucair.

Other key terms of the transaction are:

- Performance rights will vest on 31 October 2018, if Dr Choucair is still an employee of Archer at that time or if Archer terminates Dr Choucair's employment for convenience before that date.
- Performance rights will lapse if Dr Choucair resigns from Archer or is dismissed for cause prior to 31 October 2018.
- Dr Choucair will be appointed CEO of Archer Exploration on a salary of \$175,000 p.a. plus superannuation. Either party can terminate the employment for convenience, on the giving of at least 6 months' notice to the other party.
- Dr Choucair's employment with Archer will commence on 1 December 2017.

## **Management Commentary**

Archer Executive Chairman, Greg English said this acquisition is the first major step in Archer's strategy to realise vertical integration in its graphite business.

"This acquisition is a first major step in Archer's strategy to vertically integrate our graphite operations. It will add a key sales platform for our proposed graphite and graphene manufacturing operations." said Mr English. "We believe that with the growth of lithium ion batteries and expanded uses for graphene products that the supply of high quality graphite and graphene products is a very strong growth area for Archer."

"Archer has been exploring opportunities to expand our graphite business and we identified Dr Choucair and his Carbon Allotropes operation as being an excellent fit with our business model." said Mr English.

"This transaction marks a major step in Archer's growth and is in line with our previously stated goal of acquiring businesses that complement existing operations, deliver scale, and are of immediate benefit to Archer shareholders. Carbon Allotropes fits all of these criteria, as well as giving Archer a much greater competitive advantage in the areas of lead generation and graphite and graphene sales and customer insights.

"The cross-selling and up-selling opportunities are compelling. We are also pleased to welcome Dr Choucair to Archer and are confident that he will continue to drive Carbon Allotropes' business growth as well as that of Archer's.

"The combination of Archer and Carbon Allotropes establishes a very solid organic growth platform for Archer's Eyre peninsula Graphite Project."

Carbon Allotropes' Founder and new Archer CEO, Dr Mohammad Choucair, added:

"I am delighted with this transaction as it fully aligns to the vision of accelerated growth for Carbon Allotropes and Archer through the supply of graphite, graphene and other carbon based advanced materials from Archer's proposed Eyre Peninsula Graphite Project."

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