

ASX Announcement (ASX:AXE)

20 March 2018

## Archer to develop carbon-based biosensor technologies with The University of Adelaide

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### Highlights

- The collaboration agreement with the University of Adelaide for the ARC Graphene Hub has been redefined to focus on carbon-based biosensors
  - The research will seek to develop graphene-based materials for complex biosensing, potentially generating technologies and patents that have commercial applications in human health
  - The global biosensor market is forecast to grow from US\$16 billion to US\$27 billion from 2016 to 2022<sup>1</sup>
  - Collaborative effort combines Archer's graphite and graphene materials with the R&D capability of The University of Adelaide
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Archer Exploration Limited (ASX:AXE) is pleased to announce that the existing collaboration agreement with The University of Adelaide for the Australian Research Council Research Hub for Graphene Enabled Industry Transformation has been varied. The new collaboration project will seek to develop and implement graphene and carbon-based materials for use in complex biosensing targeting applications in human health.

The research will have the aim of producing technological advances utilising Archer's graphite and graphene materials and the R&D capability of The University of Adelaide. The research directly aligns with Archer's vision of developing and integrating advanced materials, specifically in the focus area of human health for the betterment of society.

The emerging biosensor market is forecast to increase from around US\$16 billion to US\$27 billion from 2016 to 2022<sup>1</sup> and forms a niche segment of the US\$328 billion<sup>2</sup> global biotechnology market.

Biosensors have targeted applications servicing various market segments including:

- Medical testing
- Food toxicity
- Industrial processes
- Environmental and agricultural testing

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The primary focus of the collaboration is on developing generic biosensors capable of addressing the largest market segment being medical testing, for the detection of cholesterol, blood glucose, blood gases, pregnancy, infectious diseases and drugs.

Commenting on the new agreement, Archer Exploration CEO, Dr Mohammad Choucair added, "This is an exciting repositioning of our materials development focus with the University of Adelaide to target a high value, high growth market for innovative carbon-based technologies. This change is part of our strategy to capture niche segments of the carbon-based material's market where we have potential competitive advantages as a vertically integrated participant."

"This is the first of our targeted efforts to capture and develop carbon-based solutions with Archer's graphite and graphene materials through collaboration with The University of Adelaide, and one that offers significant upside potential for Archer."

This work is expected to result in the development of all functional elements of a versatile *in vitro* electrochemical carbon-based biosensor. The carbon-based materials developed would be electronically, chemically and structurally tuneable with nanoscale-level optimisation tailored for electrochemical detection of complex biological molecules.

Archer's participation in the development of materials for use in carbon-based biosensors will provide future opportunities and new markets to underpin further development of Archer's substantial graphite resources.

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<sup>1</sup> Markets and Markets 2017, *Biosensors Market by Application (POC, Home Diagnostics, Research Labs, Biodefense, Environmental Monitoring, Food & Beverages Industry), Technology, Product (Wearable and Non-Wearable), and Geography - Global Forecast to 2022*, accessed 19 March 2018, <<https://www.marketsandmarkets.com/Market-Reports/biosensors-market-798.html>>

<sup>2</sup> IBIS World 2017, *Global Biotechnology - Global Market Research Report*, accessed 19 March 2018, <<https://www.ibisworld.com/industry-trends/global-industry-reports/business-activities/biotechnology.html>>