

ASX Announcement (ASX:AXE)

28 September 2017

## Eyre Peninsula Graphite and Graphene update

### Highlights

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- Campoona mining lease and Sugarloaf graphite and graphene processing plant licence progressing to grant.
  - Graphene commercialisation work with the ARC Graphene Research Hub is underway and ongoing.
  - Local environment supportive of developing advanced material technology and businesses.
  - Eyre Peninsula Graphite Project enhanced by recent developments on Eyre Peninsula.
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Archer Exploration Limited (ASX:AXE) is pleased to provide an update on the development of the Company's 100% owned Eyre Peninsula Graphite Project (**EPGP**), located near Cleve, South Australia.

Archer has made substantial progress during the past 12 months in developing our high purity graphite and graphene project on South Australia's Eyre Peninsula. The Company is expecting the grant of a mining lease before the end of the year for the mining and manufacture of high quality graphite and graphene in South Australia.

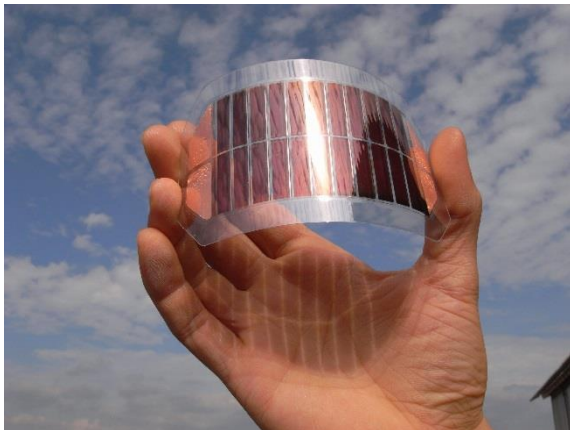
The EPGP will be Australia's first vertically integrated graphite and graphene manufacturing facility. Ultra-pure graphite from the EPGP will be used to make ultra-pure graphene. Campoona has the ability to supply up to 10,000t per annum of high grade graphite which is orders of magnitude more than is required to establish a viable graphene business. The Campoona graphite will be high quality and ultra-pure and will be sold to overseas markets as well as provide a cheap high quality feedstock for Archer's graphene manufacturing facility.

The Company's EPGP is located within a safe and reliable jurisdiction that supports the development of advanced material manufacture and provides potential local customers for Archer's graphite and graphene products. For example, recently in South Australia:

- On 7 Jul 2017, Elon Musk announced that Tesla will build the world's largest lithium ion battery near Jamestown, SA (approximately 200km east of the EPGP).
- Indian energy company Adani confirmed on 26 September 2017 that it will commence construction of a 140MW solar farm near Whyalla, SA (approximately 110km north of the EPGP).

- On 14 August 2017, SolarReserve announced that it will build a 150MW solar thermal power plant near Port Augusta, SA (approximately 200km north of the EPGP).
- French driverless vehicle company Navya announced on 14 September 2017 that they would be establishing their Asia-Pacific manufacturing base in Adelaide.
- On 21 September 2017, the South Australian Government announced the establishment of the space industry “node”.
- The world’s largest aerospace company, Boeing announced on 6 April 2017 that it will create 250 new highly-skilled technical and advanced research positions in a new hub in SA.
- In July 2017, the Australian Research Council Research Hub for Graphene Enabled Industry Transformation (ARC Graphene Research Hub) commenced operations in Adelaide.

The EPGP provides Archer with an opportunity to position itself as an advanced materials company capable of supplying high purity graphite and graphene materials and products to local and overseas customers.



## High quality Archer graphite and graphene

The amazing properties and advantages of graphene have been well reported and researched. Previous research by the University of Adelaide showed that Archer graphene demonstrates excellent electrical conductivity properties and that Archer graphite generates a high yield when converted to graphene. Also, CSIRO research showed that Archer graphite is suitable for use in lithium ion batteries.

Archer will initially look to develop a graphene business within “our own back yard” and will focus primarily on the supply of high quality graphene to the defence, space, medical industries, energy storage and coatings and polymer industries.

There is some confusion in the market over what is graphene, with some companies categorising graphene nanoplatelets as graphene. Graphene is defined as being from 1 to 10 layers in thickness and not all graphite is capable of making graphene. Some graphite and graphene companies are only making graphene nanoplatelets and are not capable of making graphene. Archer graphite is capable of making high purity graphene and this separates us from many other producers.

## Efforts towards commercialisation continue

Archer has entered into an agreement with the ARC Graphene Research Hub with the aim of developing a scalable graphene production facility that complements the Company's graphite business. This graphene commercialisation work provides further support for the development of the EPGP and has the potential to materially improve the economics of what is already an attractive project. The previous scoping study released by the Company was based entirely on the production of graphite without any economic contribution by the graphene business.

Archer has shown that it is capable of manufacturing a high quality graphene from its purified high grade graphite, as well as demonstrated the ability to produce a range of different graphene related products.

As the Company increases its focus towards commercial opportunities, Archer is working to produce further samples of graphite and graphene with various specifications for third parties to assess the value and potential market opportunities.

Archer's strategy is to develop and commercialise large 100% owned mineral projects and the development of the EPGP is consistent with this strategy. The grant of a mining lease and associated processing infrastructure will be another step forward in the creation of an advanced materials business in South Australia producing high quality graphite and graphene.

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