# *Archer Exploration Limited*

*Investor Presentation - Graphite and Magnesite*

February 2016


Gerard Anderson — Managing Director

Greg English — Chairman


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  - soil amelioration and soil remediation prospect
  - progress with Adelaide University research

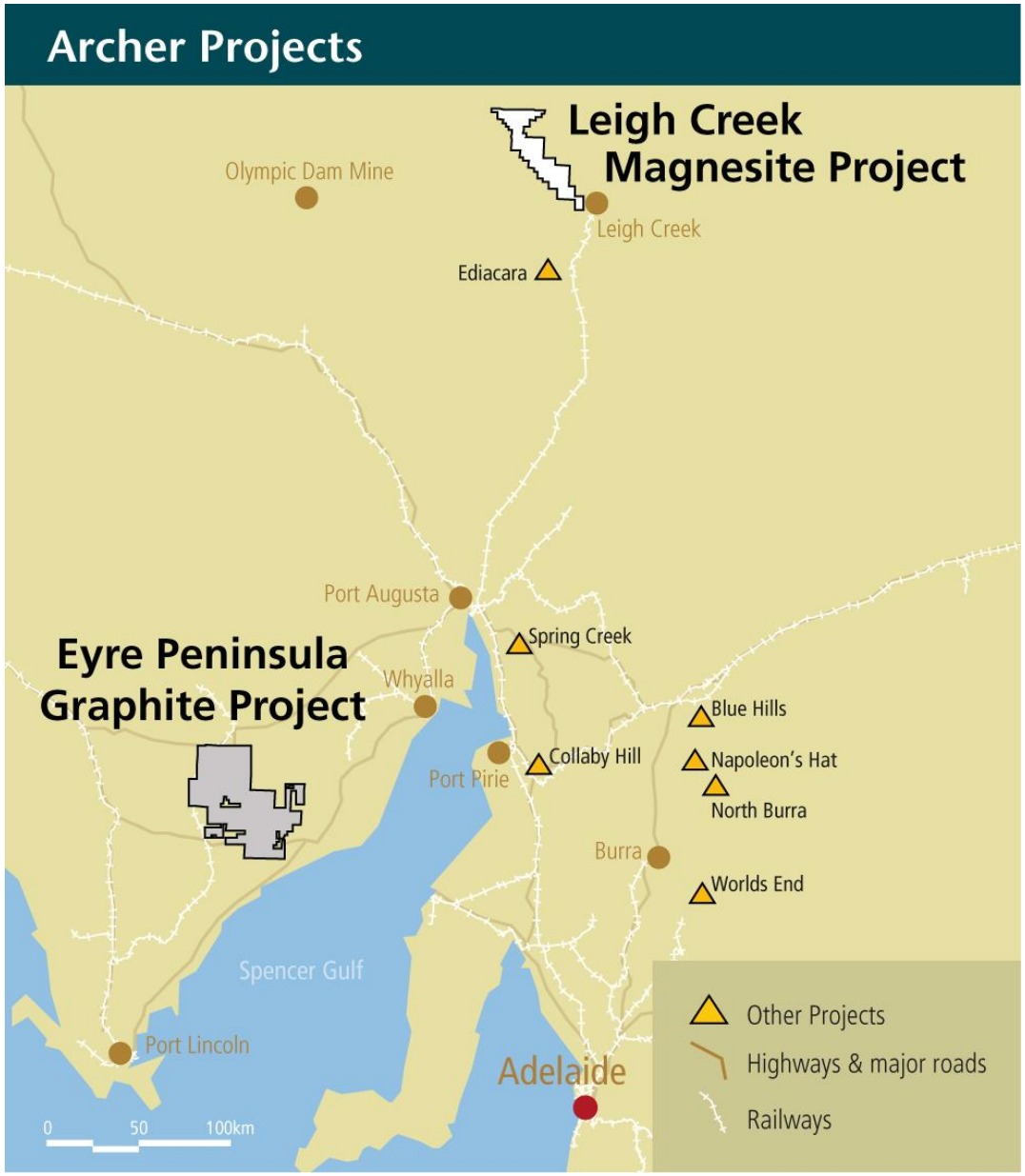
  Flake graphite

  - Waddikee flake – longer term prospect for ‘mass market’ graphite production

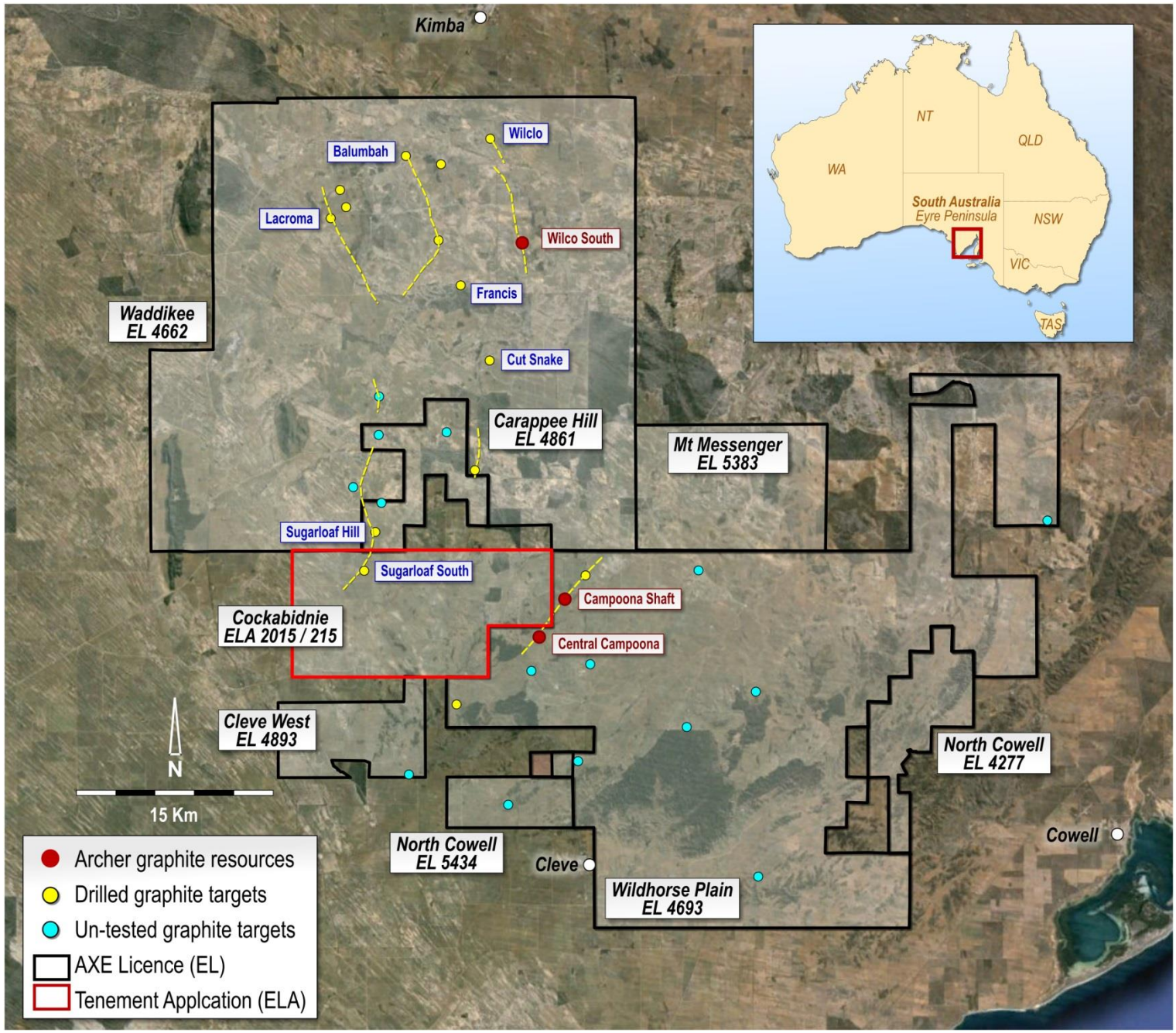
- Magnesite Project
  - world’s largest cryptocrystalline magnesite deposit
  - Alinta’s closure of Leigh Creek Coalfield creating opportunities
  - access to third party infrastructure providing pathway to imminent production

# Company Overview

- Listed August 2007
- 84.3 million shares on issue plus 2.3 million performance rights (expire 30 June 2016)
- $1.0 million in cash at 31 December
- Management team has proven mine building and operating experience
- All tenements 100% owned and located in South Australia
- Immediate commercialisation opportunities:
  - Campoona graphite
  - Leigh Creek magnesite



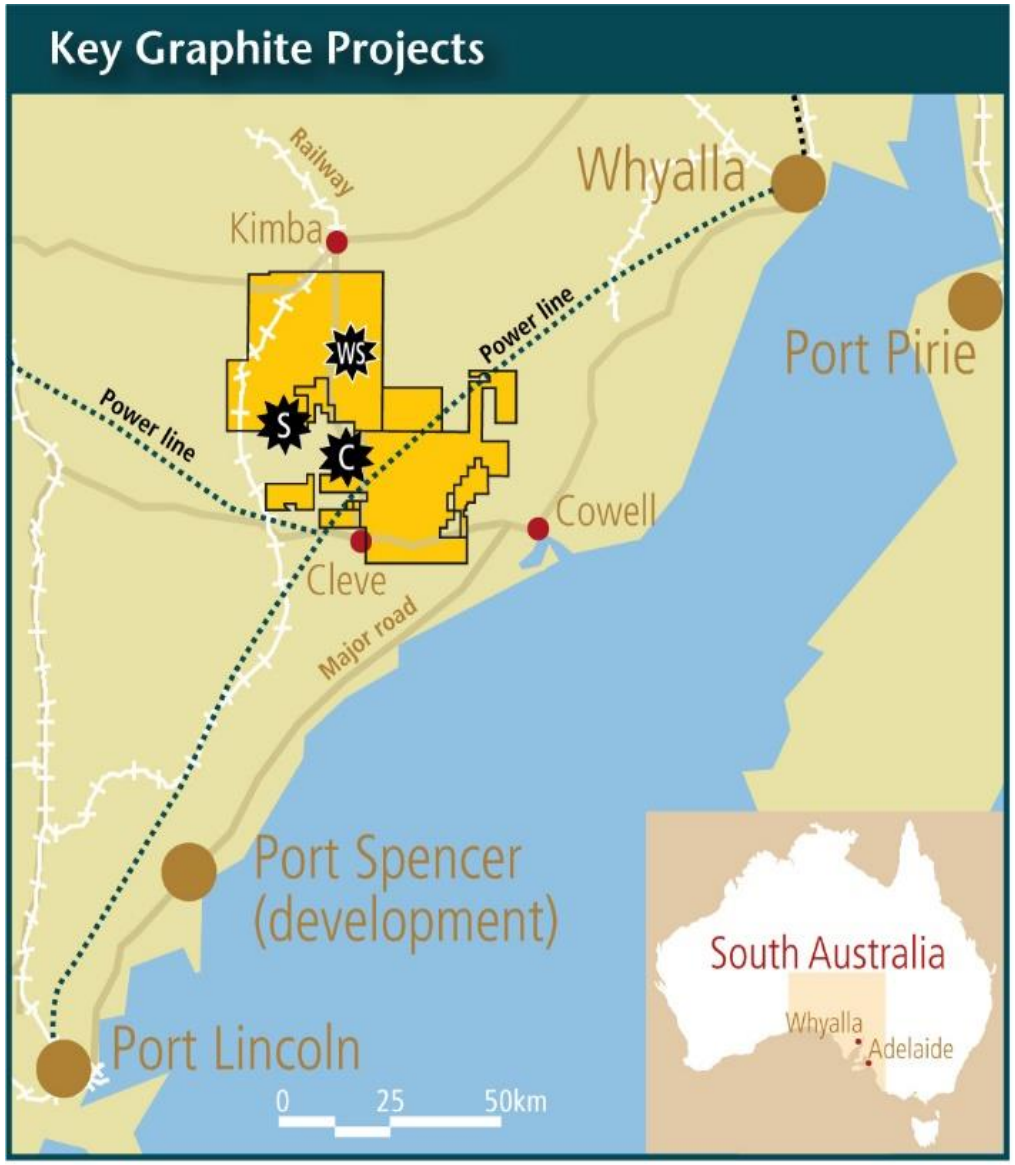
# Graphite Projects




Australia's largest JORC 2012 graphite resource

# Graphite Projects

- Located in a safe jurisdiction with access to power, water and a skilled workforce.
- 3 major project areas:
  - Campoona Project – boutique production of ultra-pure battery grade graphite
  - Sugarloaf Project – potential for soil amelioration and soil remediation
  - Waddikee Project – Large flake JORC resource at Wilclo South
- Large potential upside with less than 20% of known targets currently explored and Cockabidnie ELA



# Campoona Project – battery grade graphite

## *Campoona can produce ultra pure battery grade graphite*

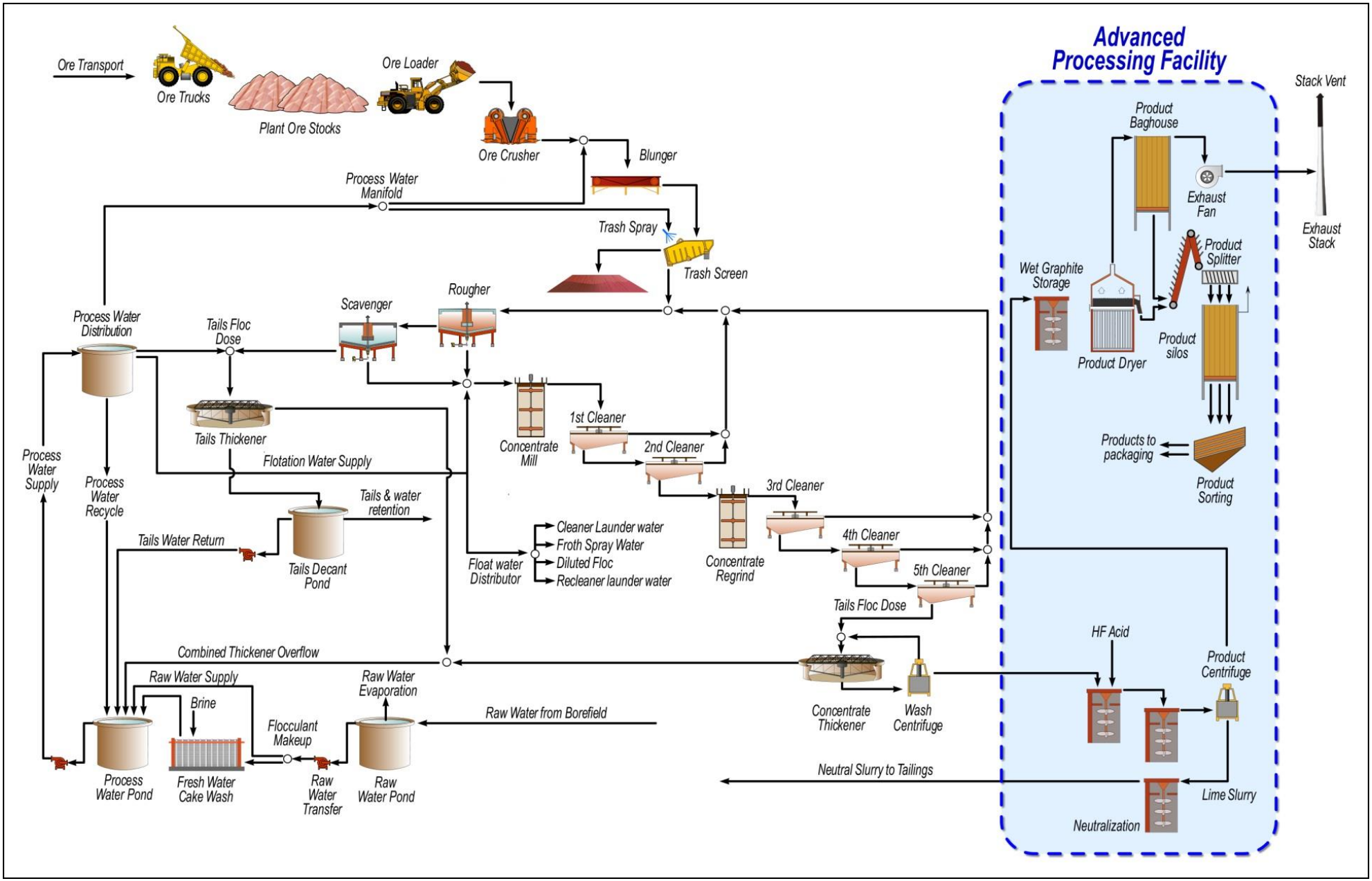
- High purity, high value crystalline fine graphite:
  - suitable for lithium-ion batteries
  - convertible to >99.99% purity graphene
- Ore body outcrops and is free dig for first 70 metres
- Project scalable to meet demand
  - construction of on-site advanced processing facility
  - high IRR – estimated >28% for full scale plant
  - small-scale start-up = low plant capex < $7M
  - >14 year mine life of high purity graphite production rising to at 10ktpa

Campoona Shaft core samples

Drilling at Campoona

# Campoona project – plant design






Sugarloaf Processing Facility - design will deliver consistent high grade product to meet tight specifications of users

# Campoona Project – battery grade quality confirmed



- Tests have shown that Campoona graphite is suitable for lithium-ion battery anodes performing at equivalent or better levels than commercially available synthetic graphite
- Currently investigating possibilities for production of spherical graphite to further enhance usage options for battery anodes, adding to the economic attractiveness of the project
- Adelaide University testing has produced high value >99.99% purity graphene
- Demand outlook remains robust - mega lithium ion battery plants are under construction
  - exponential lithium-ion battery demand growth from home battery and electric car market
  - graphite use in lithium-ion batteries is predicted to at least double every 3 years
  - manufacturers prefer lower cost and lower environmental impact of natural graphite

**THE MEGAFACTORIES ARE COMING**

| | Capacity | Cost | Location | Battery type | Start-up |
|---|---|---|---|---|---|
| TESLA Panasonic | 35GWh | $5bn | Nevada, USA | Lithium-ion | Q1 2017 |
| LG Chem | 7GWh* | $500m* | Nanjing, China | Lithium-ion | Q1 2016 |
| FOXCONN | 15GWh* | $810m* | Anhui, China | Lithium-ion | H1 2016 |

*Benchmark estimates, not disclosed by company
Source: Benchmark Mineral Intelligence


*Source: http://www.visualcapitalist.com*

# Campoona Project – securing partners

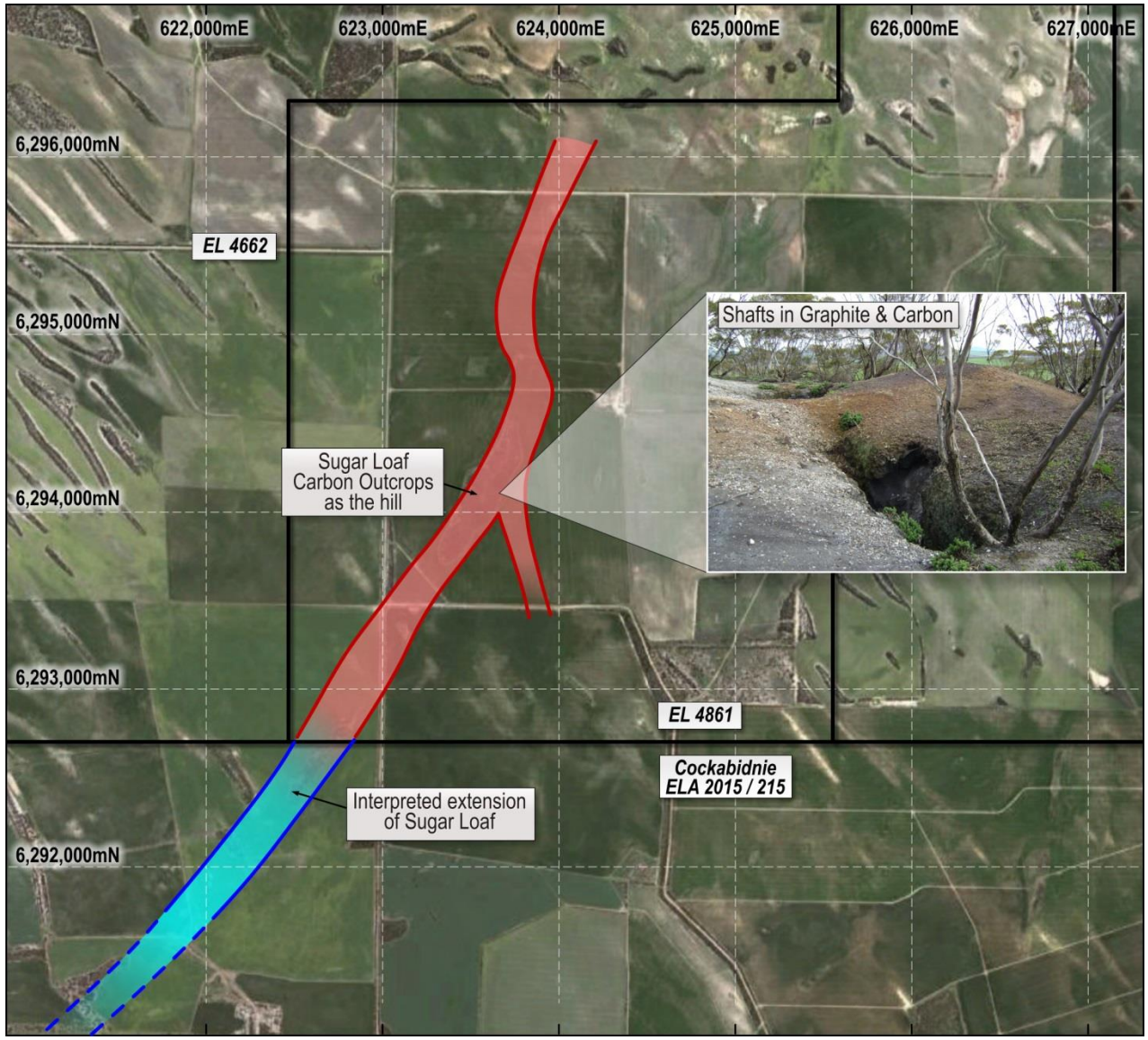
- Actively pursuing off-take or strategic partners to assist in project development
- Testing is underway by interested global off-take partners
- Extra testing with CSIRO to determine whether the Campoona graphite performance can be further enhanced with utilisation of more uniform particle sizes
- Archer is investigating processes required to spheridise Campoona graphite
- Successful tests will further enhance the attractiveness of Campoona graphite


Source (left to right): market-analyst.biz; pnnl.gov; polarisbatterylabs.com; http://newslink.federallabs.org/

# Sugarloaf Project – soil remediation and conditioner



- Sugarloaf hosts unique carbon deposit with an exploration target of 40 – 70Mt at 10-12% TC*
- Within 100m of the proposed graphite processing facility
- Provides an ideal resource for bulk use projects
- Successfully awarded ELA with known southern extensions to Sugarloaf and Campoona
- Early test work by UniSA is positive with further test work to follow




* *It must be noted that whilst the Exploration Target is large, the potential quantities and grades presented in the Exploration Target 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.*

# Sugarloaf Project – Adelaide University Research



- Initial results from Adelaide University indicate:
  - carbon additions improve soil wettability and the soil's ability to retain moisture
  - presence of trace elements found in fertilisers
  - assists plant growth
- This carbon could be produced at very low cost
  - readily dug, crushed, screened and bagged
- Partners will be sought pending outcomes of further research currently underway at Adelaide University

Looking west from top of Sugarloaf Hill across Archer's farm land

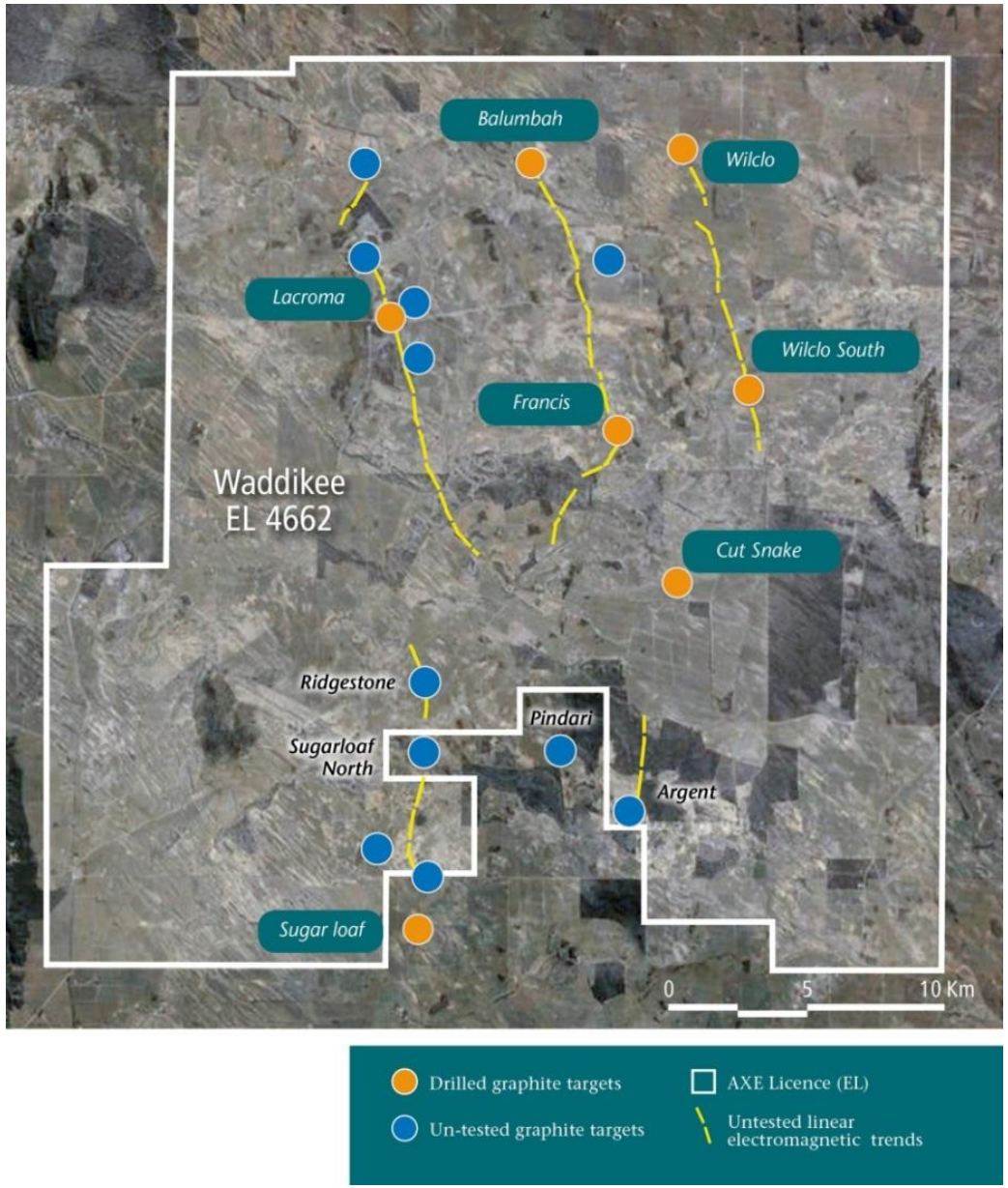
# Waddikee Project – large flake and large JORC resource



- Wilclo South is the primary project target in the Waddikee tenements consisting of:
  - Extra Large, Large, Medium and Fine Flake graphite at grades of 91-93% Cg
  - Inferred Resource of 6.38Mt @ 8.8% Cg (5% Cg cut-off)
- Only 20% of all graphite targets drilled providing scope for significant resource upgrade with further drilling of the target areas
- Step out drilling early this year confirmed continuity of resource at Wilclo South

| Graphite size (µm) | Grade (% Cg) | Graphite distribution in flake product |
|---|---|---|
| Extra large / Jumbo flake +425µm | 92.2 | 5% |
| Extra large flake +300µm | 91.6 | 10% |
| Large flake +180µm | 91.8 | 29% |
| Fine & Medium flake +75µm | 92.3 | 56% |

Indicative Flake distribution from the oxide profile at Wilclo South

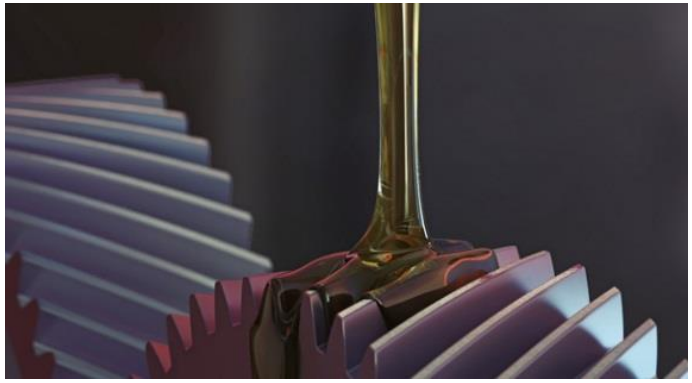


# Waddikee Project – wide range of applications



- Waddikee tenements host a range of flake graphite with wide potential commercial applications
- Uses for flake graphite include:
  - dry lubricants
  - steel making
  - brake linings
  - refractories
  - batteries
- This material is similar to the large deposits that are being developed in Mozambique
- The safer and more stable political environment in Australia is anticipated to create demand for this product
- Longer term projects can be developed to further utilise the processing facility established for the Campoona deposit

Archer graphite flotation test work



# Leigh Creek Magnesite Project - overview



- Closure of Leigh Creek Coalfield opens up railway and associated infrastructure opportunities for Archer
- World's largest cryptocrystalline magnesite deposit (453 million tonnes @ 41.4% MgO)
- Located 20km northwest of the Leigh Creek township
- Open pit mining, crushing and screening process followed by calcination will produce either a caustic calcined magnesia or a monolithic deadburned magnesia product suitable for a range of market applications
- Critical infrastructure is available locally and Archer is in advanced negotiations regarding access
- Detailed drilling, metallurgical and other test work results obtained by Archer

# Leigh Creek – infrastructure in place



- Alinta's decision to close its coalfield has greatly improved the logistics of the Leigh Creek magnesite project
- Access to existing infrastructure now available
- Discussions with the SA Government regarding the development of the project
  - Government supportive of projects in the area
- Discussions with the SA Government regarding the development of the project
  - use of 3rd party infrastructure
  - potential short-term path to production and cash flow
- Exciting prospect for the Company provided through an unexpected window of opportunity



*Clockwise*
*Leigh Creek coal train (source: adelaidenow.com.au)*
*Town entrance (source: www.roamingtheoutback.com.au*

# Outlook

- Campoona Mining Lease approval ready for lodgement with small-scale start-up plant under consideration as initial phase of production
- Results from further CSIRO testing of Campoona graphite at uniform particle sizes is anticipated in next few months
  - possible spheridisation to further improve market opportunities
  - testing by potential off-take partners underway
- Further results from Adelaide University are expected for the potential of the Sugarloaf carbon deposit to be used for soil amelioration and potentially for soil remediation
- Developments at Leigh Creek have improved prospects for the production of near term development of magnesite project
  - imminent opportunity to develop mid-sized magnesia production capability

# Disclaimer

## Competent persons statement

*The exploration results and Exploration Target reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Wade Bollenhagen, Exploration Manager of Archer Exploration Limited. Mr Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than eighteen years experience in the field of activity being reported. Mr Bollenhagen has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' relating to the reporting of Exploration Results. Mr Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.*

*The information in this report that relates to the Campoona Shaft and Central Campoona JORC 2012 Mineral Resource estimation has been prepared by Mr B. Knell who is a Member of the AusIMM and peer reviewed by Dr. C Gee who is also a Member of the AusIMM (CP). Mr Knell is a full time employee of Mining Plus Pty Ltd and Dr. Gee is a full time employee of Mining Plus Pty Ltd., both have more than five years' experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Knell has consented in writing to the inclusion in this announcement of the Mineral Resource estimation information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2012.*

## Forward looking statements

*The information in this presentation is published to inform you about Archer Exploration Limited and its activities. Some statements in this presentation regarding estimates or future events are forward looking statements.*

*Although Archer Exploration Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results and outcomes will be consistent with these forward-looking statements.*

# *Archer Exploration Limited*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|---|---|
| ASX code: | AXE |
| Company details: | Level 1, 28 Greenhill Road<br>Wayville South Australia 5034<br>www.archerexploration.com.au |
| Further information: | Greg English (Chairman)<br>T +61 8 8272 3288<br>genglish@archerexploration.com.au |