

# A vision for the future

ASX: LIT  
**Lithium**  
Australia<sup>NL</sup>

**121** MINING  
INVESTMENT

5-6 FEBRUARY 2018 CAPE TOWN  
Welgemeend, Gardens District

**Adrian Griffin**  
Managing Director

Sustainability in the energy-metal cycle

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*requirements; exploration, development and operating risks; uninsurable risks; uncertainties inherent in ore reserve and resource estimates; dependence on third-party smelting facilities; factors associated with foreign operations and related regulatory risks; environmental regulation and liability; currency risks; effects of inflation on results of operations; factors relating to title to properties; native title and Aboriginal heritage issues; dependence on key personnel, and share-price volatility. They also include unanticipated and unusual events, many of which it is beyond the Company's ability to control or predict.*

## COMPETENT PERSON'S STATEMENT

*The information in this report that relates to reporting of Exploration Results is based on and fairly represents information and supporting documentation prepared by Adrian Griffin, a member of the Australasian Institute of Mining and Metallurgy. Mr Griffin is a shareholder in, and managing director of, LIT and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration. He is qualified as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Griffin consents to the inclusion in this report of the matters based on information in the form and context in which it appears.*

# **A vision for the future – sustainability through vertical integration**



**Lithium Australia NL (ASX: LIT) aspires to 'close the loop' on the energy-metal cycle. Its disruptive extraction processes are designed to convert *all* lithium silicates to lithium chemicals, from which advanced components for the battery industry can be created. By uniting resources and the best available technology, LIT seeks to establish a vertically integrated lithium processing business.**

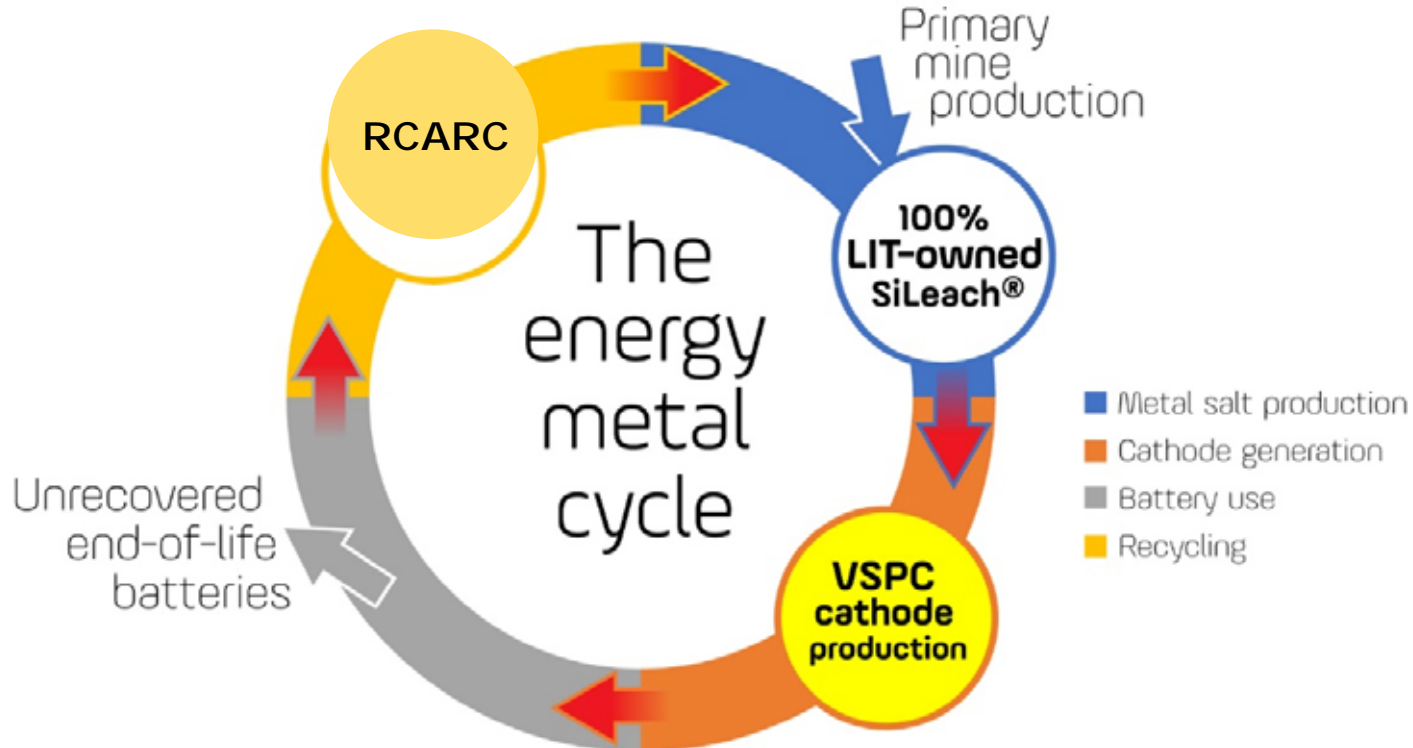
**LIT's aim with vertical integration is to create greater value by expanding beyond the production of primary lithium chemicals (carbonates, hydroxides, etc.) to combine the lithium and other elements and produce advanced cathode powders.**

**Having recognised the fragile nature of the energy-metal supply chain, LIT also wants to increase the rates at which critical metals are recycled. Globally, the recycling of lithium-ion batteries ('LIBs') is less than 10%. As a consequence, supplies of lithium and cobalt are struggling to meet demand. Recycling would ease the pressure on primary sources, as well as improving sustainability and benefitting the environment.**

**Integration of LIT's processing technologies creates a pathway from mine waste through to the production of LIB cathode materials and is also a means of re-birthing much valuable metal that would otherwise go to landfill.**

# Sustainability in a cycle short of supply

LIT aspires to 'close the loop' on the energy-metal cycle and, in so doing, improve the sustainability of those energy metals. This may ease the supply pressure presently experienced with respect to lithium, cobalt and other strategic metals.



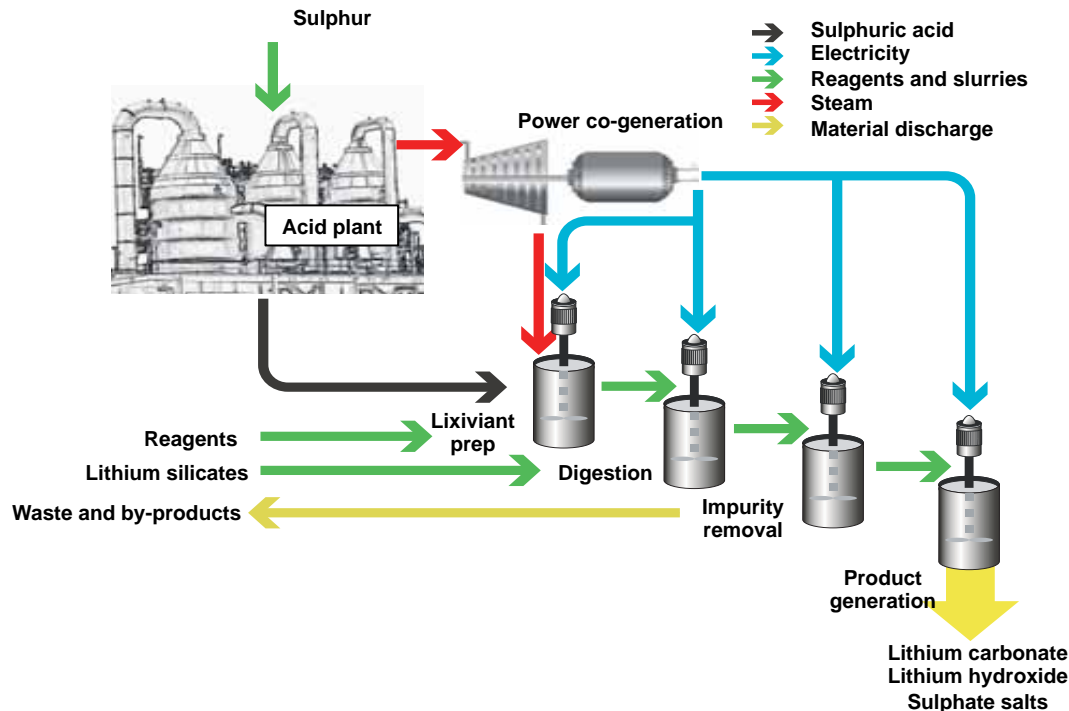
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# The fusion of technology – LIT's vertical integration

- **SiLeach<sup>®</sup>** lithium extraction requires no roasting (LIT committed to a lithium chemical pilot plant with a design output of 2,500 tonnes per annum of lithium carbonate equivalent ('LCE') – compatible with Very Small Particle Company ('VSPC') technology .
- **VSPC** and pilot plant facilities to produce most advanced cathode powders – compatible with feed from SiLeach<sup>®</sup> and Resource Conservation and Recycling Company ('RCARC').
- **RCARC** developing processing systems for the recycling of LIBs and alkali batteries – target output compatible with VSPC.
- **Exploration and resource development** covering prospective ground in major lithium provinces in:
  - Australia
  - Germany
  - Mexico.

# Superior processing technology the SiLeach<sup>®</sup> process

The SiLeach<sup>®</sup> process has been designed to rapidly digest any silicate mineral. The process incorporates a revolutionary means of enhancing the rate of lithium recovery from ore minerals. With the SiLeach<sup>®</sup> process not only is the lithium recoverable but so too are other metals present in the feed material. LIT plans to demonstrate the process on a commercial scale, and final engineering studies have commenced to achieve this goal.

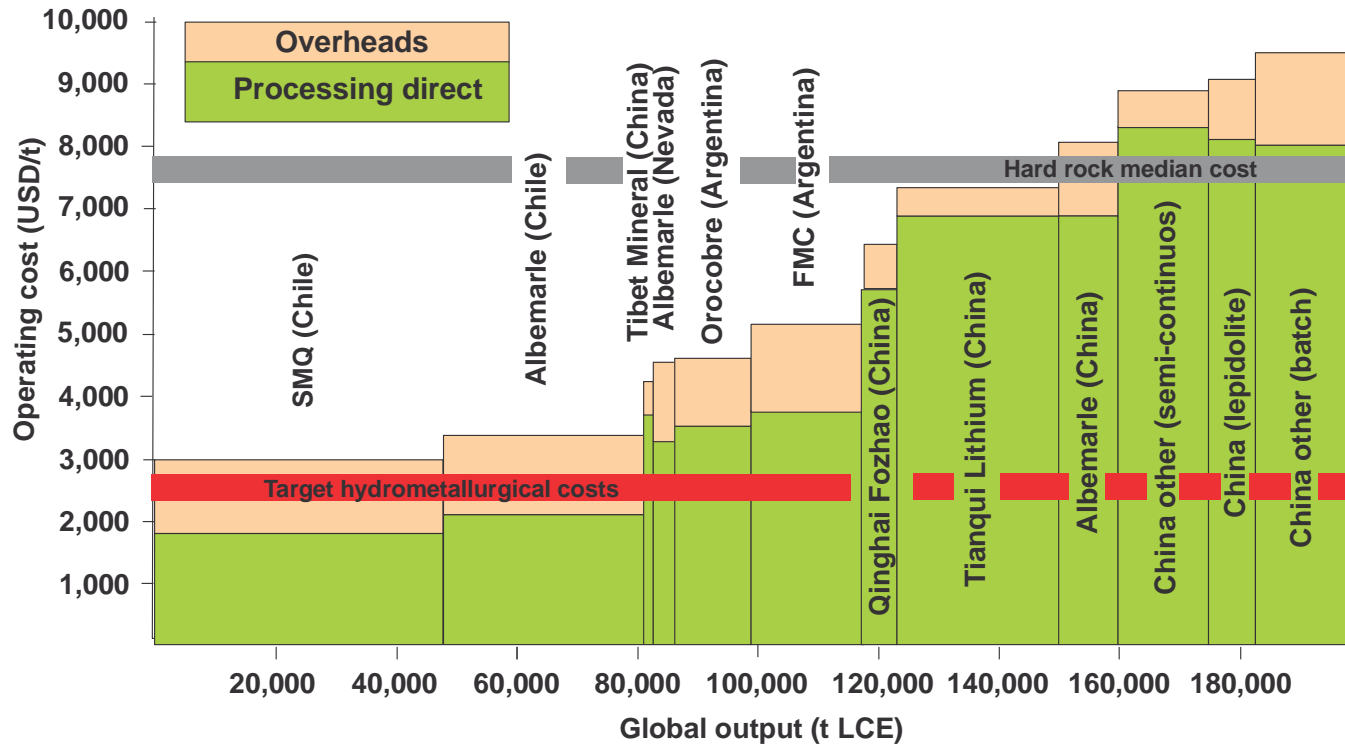


## The SiLeach<sup>®</sup> process

- No roasting
- Low-energy footprint
- Complete dissolution of all silicates
- Diverse by-product credits
- Low operating cost
- Battery-grade chemicals
- Pilot-tested

# Aspirational statement

The SiLeach<sup>®</sup> process has the potential to change the cost curve for hard-rock lithium production.



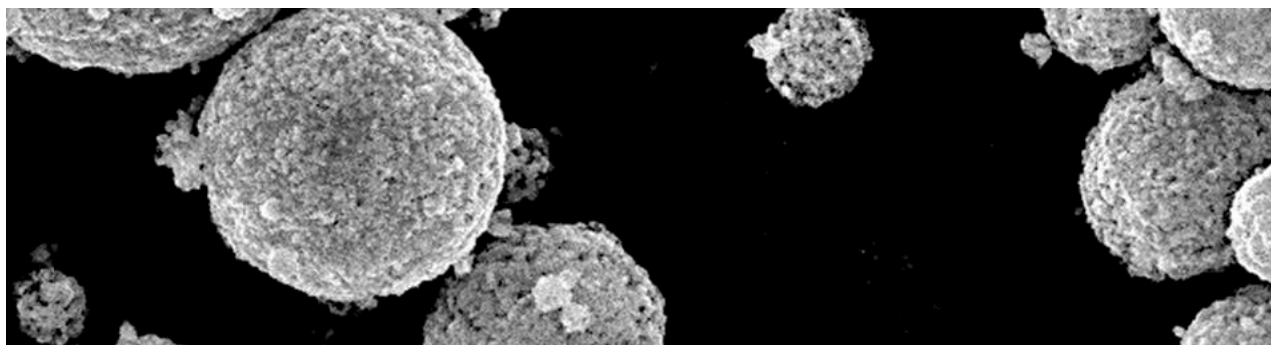
Cumulative 2016 production of LCE (t)

Global lithium carbonate operating costs (after Roskill, 2017) and target hydrometallurgical costs.

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# VSPC – superior battery cathodes

LIT is negotiating procurement of advanced cathode production technology via the acquisition of VSPC.



VSPC advantages include the following.

- Innovative, patent-protected chemical process.
- Delivery of very precise chemistry to complex metal oxides (cathode materials).
- **Fast track to commercialisation of superior cathode production.**

Integrating VSPC technology with LIT's SiLeach<sup>®</sup> process and RCARC will mean waste materials can be processed to generate new cathodes for the battery industry, creating an unprecedented uplift in value beyond the production of lithium carbonate and advancing sustainability in energy metals.



# RCARC – keeping batteries out of landfill

- **Recycle rates on LIBs very low (<10% globally – less in Australia).**
- **Feed materials derived from waste batteries comprise refined metal compounds with high concentrations and high value.**
- **Variable chemistry, with a strong parallel to base-metal recovery systems processing natural ores.**
- **Base case designed around the most abundant battery chemistries.**
- **Processing compatible with VSPC technologies, with the potential to produce a feed solution from which cathode powders can be directly precipitated.**
- **Technical partnership with Murdoch University.**

# Sadisdorf – the European example

Tin mineralisation as veins in greisen.

Pervasive lithium mineralisation.

The means to commercial success –

- low-cost processing
- recovery of all metals.

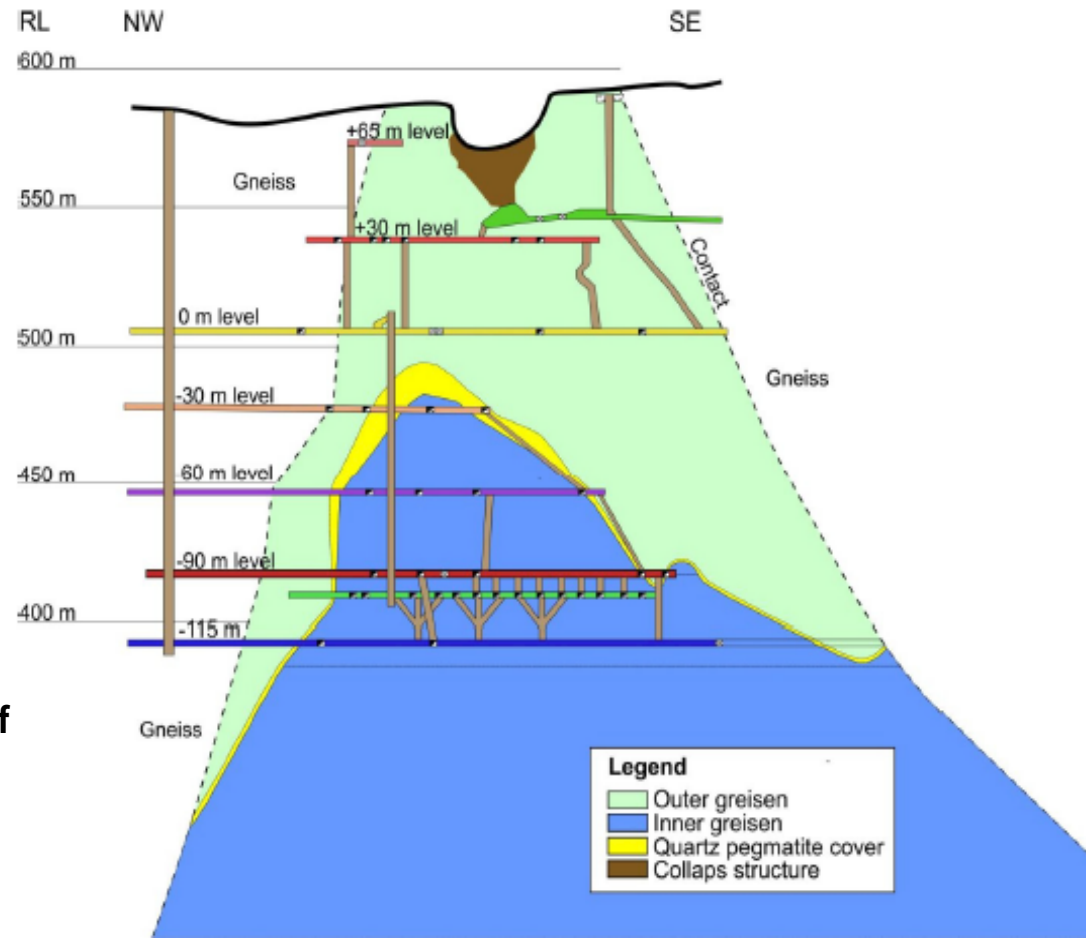
Conventional processing for Sn, W.

The SiLeach<sup>®</sup> process on the trail to recover:

- lithium
- potassium
- silicon
- aluminium
- caesium
- gallium.

This diversity will breath life into Sadisdorf and feed the European battery industry – **it's resource sustainability.**

Integration with VSPC could result in the development of a new cathode material business.



*Historic section through the deposit*

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# The sweet spot in the value chain

SiLeach<sup>®</sup> can generate lithium carbonate from waste materials.

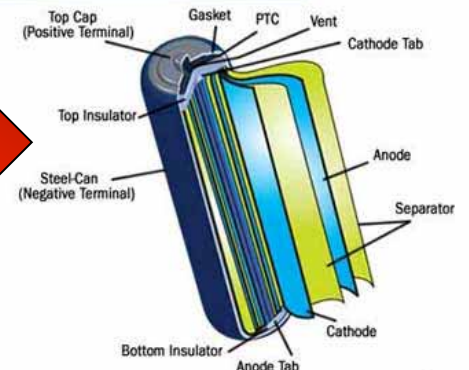
- 1 tonne of lithium carbonate = \$10,000/tonne
- 1 tonne of lithium carbonate = 5 tonnes of cathode material ('LFP')
- Each tonne of LFP = \$20,000 to \$35,000
- **Value uplift around 15-fold**

The production of cathode materials provides the highest uplift in the energy-metal cycle.

LIT is the only company with the technology to transition from mine waste to LIB cathode materials.



Cylindrical lithium-ion battery



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# Investing in LIT is investing in ...

- **A sustainable, low-emission lithium future through:**
  - metal extraction from waste minerals
  - energy-metal recycling from spent batteries
  - high-quality cathode production.
- **The SiLeach<sup>®</sup> process – 100%-owned world-leading technology.**
- **VSPC – developing the world’s best cathode materials.**
- **The ONLY company with full process integration.**
- **Strategic partnerships and alliances.**
- **Experienced and committed management.**

# Lithium Australia – corporate snapshot

FSE-listed: ticker 3MW

ASX-listed: ticker LIT



## BOARD OF DIRECTORS



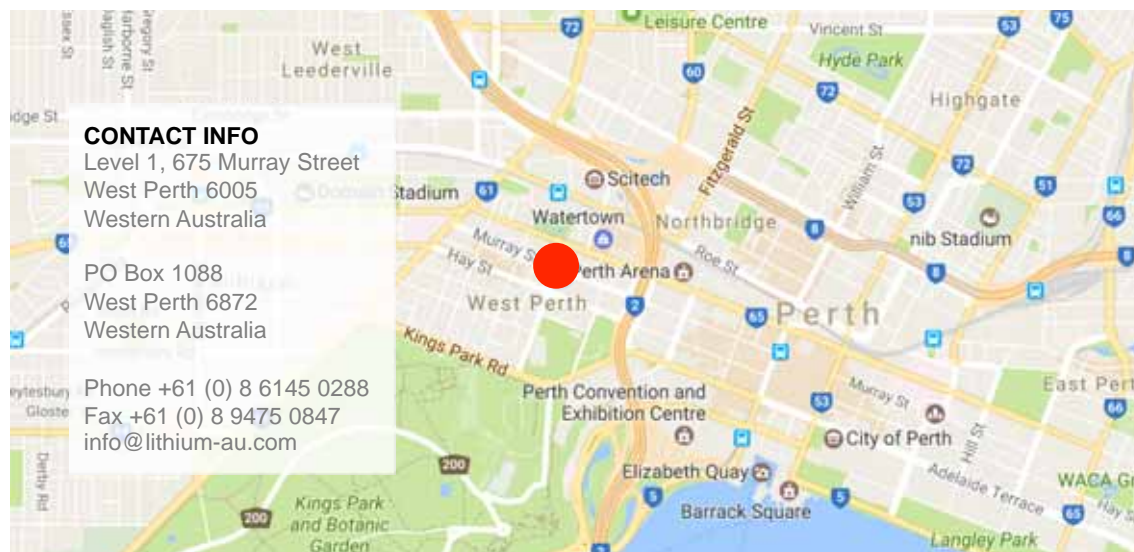
**George Bauk**  
(non-executive chairman)  
Expert in specialty metals, particularly rare earths – project management, marketing and capital-raising.



**Adrian Griffin**  
(managing director)  
Exploration, production, mine management and processing technology.



**Bryan Dixon**  
(non-executive director)  
Corporate, finance, mine development.



|                               |       |
|-------------------------------|-------|
| Price (AU\$) as of 1 Feb 2018 | 0.20  |
| Market capitalisation (AU\$)  | 68 M  |
| Shares outstanding (LIT)      | 344 M |
| Partly paid shares (LITCE)    | 133 M |
| Cash position (AU\$)          | 16 M  |
| Debt position (AU\$)          | NIL   |

|                                      |        |
|--------------------------------------|--------|
| Top 10 holders at 31 Jan 2018        | 25.82% |
| JP Morgan Nominees                   | 6.56   |
| HSBC Custody Nominees                | 4.02   |
| Acuity Capital Investment Management | 3.42   |
| Citicorp Nominees                    | 3.11   |
| Adrian Griffin                       | 2.49   |
| Parkway Minerals NL                  | 2.13   |
| Alan Jenks                           | 1.09   |
| BNP Paribas Nominees                 | 1.06   |
| Horn Resources                       | 0.99   |
| Apollinax Inc.                       | 0.95   |