



## On to something special

Centrex (ASX: CXM) is a phosphate development company that is building the Ardmore phosphate project in Queensland. The company is hoping to capitalise on the increased demand for fertilisers that is not being matched by supply. It just commencing production and has the first three years of production commercially locked in.

### Strong fundamentals for Phosphate generally

Phosphate is a critical fertiliser that underpins the world's food supply. Between 1969 and 2019, phosphate use quadrupled in conjunction with global population growth. Over the past couple of years, the industry has been hit by increased production costs – in the form of energy and natural gas prices – and tighter supply. Fertiliser prices are currently at highs not seen in over a decade and supply is very tight – virtually all of Australia's supply is imported, with the bulk of it from Morocco.

### Why CXM is appealing

The Ardmore Project, which Centrex acquired in 2014, promises to resolve Australia's supply problems. With the ability to supply 400k tonnes a year, it is capable of supplying the entire Australian market for phosphate rock. A DFS, completed in 2018, forecasted a NPV of A\$207m pre-tax and an IRR of 52%. This was based on a modest 10-year mine life but with a payback period of less than two years. And this study used pricing of US\$135/t which is far lower than the phosphate price right now. The next Stage of Ardmore, offers further upside with, potentially, 800k tonnes per annum.

### Valuation range of A\$0.31-\$0.60 per share

We have valued Centrex at A\$0.31 per share base case and A\$0.60 cents per share optimistic case using the DCF approach, with reasonable assumptions on the phosphate price, the obtaining of finance and its meeting of forecasted timelines for development. We foresee Centrex being re-rated on the continued ramp up at Ardmore, including increasing phosphate production. The key risks to our thesis are commodity price risk, development risk and funding risk – the updated DFS estimates a \$78m capital cost.

Share Price: A\$0.13

ASX: CXM

Sector: Materials

1 November 2022

Market cap. (A\$ m)	79.1
# shares outstanding (m)	608.8
# shares fully diluted (m)	608.8
Market cap ful. dil. (A\$ m)	79.1
Free float	100%
52-week high/low (A\$)	0.21 / 0.068
Avg. 12M daily volume ('1000)	1,596.56
Website	<a href="http://centrexlimited.com.au">centrexlimited.com.au</a>

Source: Company, Pitt Street Research

### Share price (A\$) and avg. daily volume (k, r.h.s.)



Source: Refinitiv Eikon, Pitt Street Research

<b>Valuation metrics</b>	
DCF fair valuation range (A\$)	\$0.31-\$0.60
WACC	11.78%
Assumed terminal growth rate	2%

Estimates: Pitt Street Research

**Analysts: Nick Sundich, Stuart Roberts**

**Tel: +61 (0) 424 279 525**

**[Nick.Sundich@pittstreetresearch.com](mailto:Nick.Sundich@pittstreetresearch.com)**



## Table of Contents

<b>Financial Statements (Base Case)</b>	<b>3</b>
<b>Introducing Centrex</b>	<b>4</b>
<b>Ten reasons to look at Centrex</b>	<b>5</b>
<b>Ardmore – A worthy flagship project</b>	<b>6</b>
<i>The original DFS (2018)</i> .....	7
<i>The updated DFS (2021)</i> .....	7
<i>Ardmore 1, 1.5 and 2</i> .....	8
<i>All systems go now</i> .....	8
<i>Offtakes reserved</i> .....	8
<i>How Ardmore will work</i> .....	9
<b>Centrex's other projects</b>	<b>10</b>
<i>The Oxley Potash Project</i> .....	10
<i>The Goulburn Polymetallic Project</i> .....	10
<b>Phosphate – An important fertiliser</b>	<b>11</b>
<i>A big global market exists</i> .....	11
<i>Five major producers</i> .....	12
<i>Australia's current situation</i> .....	12
<i>Reliance on imports is biting the Australian market</i> .....	12
<b>Strategic advantages for Centrex</b>	<b>13</b>
<i>High quality product</i> .....	13
<i>Solid project economics</i> .....	13
<i>Ability to service export markets</i> .....	13
<b>Centrex's phosphate peers</b>	<b>13</b>
<b>Other companies in the phosphate space</b>	<b>14</b>
<b>Valuation and catalysts</b>	<b>15</b>
<b>Risks</b>	<b>16</b>
<b>Strong and lean leadership</b>	<b>17</b>
<b>Appendix I – Analysts' Qualifications</b>	<b>19</b>
<b>General advice warning, Disclaimer &amp; Disclosures</b>	<b>20</b>



## Financial Statements (Base Case)

Profit & Loss (A\$m)	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Sales Revenue	0.1	15.6	36.9	59.1	105.8	151.2	161.3
Operating expenses	0.0	-0.5	-1.2	-1.8	-3.1	-4.3	-4.8
Adjusted EBITDA	-0.9	5.1	13.0	21.8	41.0	61.5	61.7
Depn & Amort	0.0	-4.1	-8.3	-14.5	-20.7	-22.8	-24.8
Adjusted EBIT	-0.9	1.0	4.7	7.3	20.3	38.8	36.9
Profit before tax (before exceptionals)	-0.9	0.7	4.4	7.0	20.1	38.5	36.6
Tax expense	0.0	0.0	-1.3	2.1	-6.0	-11.5	-11.0
Abnormals + Minorities	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NPAT	-0.9	0.7	3.1	9.1	14.1	26.9	25.6
Cash Flow (A\$m)	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Profit after tax	-0.9	0.7	3.1	9.1	14.1	26.9	25.6
Depreciation	0.0	4.1	8.3	14.5	20.7	22.8	24.8
Change in trade and other receivables	0.0	-1.1	-1.5	-1.6	-3.4	-3.3	-0.7
Change in trade payables	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Operating cashflow	0.0	3.6	9.9	22.0	31.4	46.4	49.8
Investing cashflow	-1.8	-15.7	-17.3	-17.3	-17.3	-17.3	-6.8
Financing Cash flow	21.8	93.5	-7.9	-7.9	48.5	-24.0	-23.2
Net change in cash	20.0	81.4	-15.3	-3.1	62.6	5.1	19.8
Cash at End Period	33.9	115.1	99.6	96.3	158.7	163.6	183.2
Net Cash (Debt)	33.9	83.6	76.0	80.5	136.8	149.6	177.0
Balance Sheet (A\$m)	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Cash	33.9	115.1	99.6	96.3	158.7	163.6	183.2
Total Assets	34.4	116.7	107.2	108.5	171.3	190.6	207.8
Total Liabilities	5.5	36.8	28.9	21.1	27.2	19.4	11.5
Net Assets	28.9	79.8	78.3	87.4	144.1	171.2	196.3
Shareholders' Funds	12.6	80.3	78.4	87.5	143.9	170.9	196.5
Ratios (A\$m)	2022E	2023E	2024E	2025E	2026E	2026E	2026E
Return on Equity (%)	-2.7%	0.6%	2.9%	8.4%	8.2%	14.1%	12.3%
Return on Assets (%)	-7%	1%	4%	10%	10%	16%	13%

Estimates: Pitt Street Research



*Centrex picked up Ardmore in 2017 from Incitec Pivot.*

*Ardmore can supply the entire Australian market for phosphate rock.*

## Introducing Centrex

Centrex, formerly known as Centrex Metals, was founded in 2001 and was listed on the ASX in 2006. It has always been focused on fertilisers but has owned several projects over the years before picking up Ardmore in 2017. Ardmore was purchased from Incitec Pivot (ASX:IPL) for \$5m in cash, a right of first refusal over up to 20% of production and a 3% royalty. It completed a DFS in October 2018 before optimising numbers in 2019 and releasing an updated study in August 2021.

## Ardmore offers substantial promise

The Ardmore project has a NPV of US\$166m based on a 10-year mine life. It has a Resource of 16m tonnes and a reserve of over 10m tonnes. Stage 2 of the project envisions an annual production of over 800kt per annum.

Phosphorus is an essential plant nutrient. Australian grain farmers use the granulated fertiliser at planting to establish crops. Phosphate rock is the source of phosphorus for fertilisers, animal feed, food additives, detergents, herbicides, electronics, asphalt, pharmaceuticals and cosmetics. There is no substitute for phosphorus in agriculture. At 400k tonnes a year, Ardmore can supply the entire Australian market for phosphate rock.

At first glance, investors may think the project will cause an unnecessary glut of supply on the market. But we think the substantial offtake arrangements, covering nearly three years' worth of production, put this theory to bed and depicts that it could serve export markets in the Asia-Pacific region. And that is before you consider several distinguishing factors of Ardmore including the high quality of phosphate and the potential for it to reduce Australia's reliance on imports.

Australia relies on imports for virtually all of its phosphate supply, a situation that is unsustainable in light of supply chain disruptions and export restrictions by major global producers, particularly China. Ardmore offers potential to fill the gap and has several attractions relative to its peers, including a higher grade and lack of unwelcome by-products.

## Funding

The key issue facing Centrex is securing funding to get the project off the ground. The DFS estimates that US\$78m will be needed. However, we think the chances of securing this are high given the fundamentals of Phosphate and the Ardmore project, especially the <2 year payback period and the >3 years of production reserved in the form of offtake agreements with Incitec Pivot and Samsung, among others.



## Ten reasons to look at Centrex

- 1) **Increased demand for phosphate.** Phosphate is a critically important macro nutrient for which there is no substitute. Demand is expected to grow at 3% annually over the next ~2 decades.
- 2) **Favourable jurisdiction.** Australia is a resources-friendly jurisdiction with far lower sovereign risk.
- 3) **Promise to solve supply chain issues.** Virtually all of Australia's phosphate is imported from overseas – particularly from Morocco. With consumption of approximately 400,000 tonnes annually, the Ardmore project promises to reduce Australia's reliance on imported phosphate rock.
- 4) **The project value and economics.** The DFS for Ardmore, first completed in 2018 and updated in 2021, delivered an ungeared pre-tax NPV of A\$207m and an IRR of 52%. It provided an initial payback of <2 years.
- 5) **Substantially increased phosphate pricing.** The DFS is appetising enough but was completed at a price of US\$125/mt. Prices have substantially increased since then, which offers potential for further upside from the project. The World Bank benchmark is currently US\$320/mt.
- 6) **First three years of production locked in.** Centrex has sold virtually all of the production over the next three years with clients including Incitec Pivot (ASX:IPL), Samsung and certain Kiwi farm cooperatives.
- 7) **High quality product.** While demand for phosphate generally is large, there is particularly high demand for premium grade phosphate rock. The phosphate at Ardmore is 34-35% grade and undesirable by-products that customers don't want are easily washed out.
- 8) **Potential upside at Ardmore.** There are a number of opportunities for further upside to be realised. Potential options include increasing the mine life via conversion of Resources to Reserves or further exploration in the region.
- 9) **Potential upside from other projects.** Centrex also owns the Oxley Potash Mine and two exploration licenses in the Lachlan Ford Belt in NSW. The former has an Inferred Mineral Resource of 115m/t @ 8.3% K2O. These offer further potential upside for the company, but for now we have not ascribed value to them in our model.
- 10) **Given all of the above, we believe Centrex is undervalued** at its current market value. We value the company at \$0.31 cents per share base case and \$0.60 cents per share optimistic case using a DCF approach with conservative assumptions on phosphate prices and cost of capital.

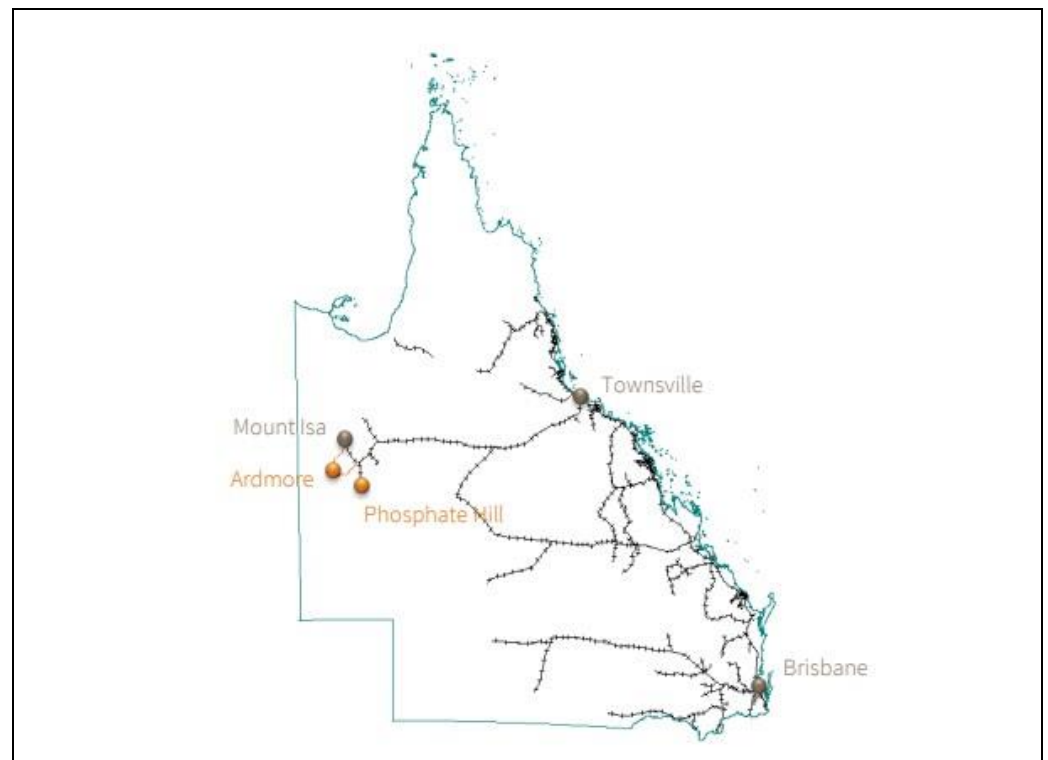


## Ardmore – A worthy flagship project

*Ardmore is one of the few remaining undeveloped high-grade phosphate rock deposits in the world*

The Ardmore Phosphate project is one of the few remaining undeveloped high-grade phosphate rock deposits in the world. It lies in North-west Queensland, roughly 90km from the Mount Isa-Townsville rail line (Figure 1). Ardmore was discovered in 1966 and represents a smaller high-grade satellite deposit to the Duchess Phosphate Rock Mine which lies ~70km east (Figure 1). A mining license was granted in the middle of that decade. Before Centrex acquired the project, it was owned by Incitec Pivot subsidiary Southern Cross Fertilisers (SCF) and SCF used it to feed the nearby Phosphate Hill ammonium phosphate fertiliser plant. Over 300 historic drill holes had been completed up to that point.

Figure 1: The location of the Ardmore project in Queensland



Source: Company

Centrex picked up the Ardmore project in 2017. It paid A\$5m in cash for the transfer of the mining lease and gave SCF a right of first refusal of over up to 20% of production in addition to a 3% royalty. Centrex viewed the project as a fast-track development opportunity and planned to convert the Exploration Target (which was 12-16.5m tonnes at a grade of 28.2%-29.4% phosphate) to JORC Mineral Resources. Eventually, it aspired to enter production and planned to export the phosphate rock from the Townsville port, utilising the Townsville-Mount Isa railway line and the existing road that linked Ardmore and the town of Mount Isa. At the time, it forecast production to begin within four years.





*The first DFS depicted an NPV of \$172m, an IRR of 40% and a payback period of just 4 years.*

### The original DFS (2018)

Centrex completed a DFS in October 2018 before optimising numbers in 2019 and releasing an updated study in August 2021. Let's explore each of these individually. The first study deduced a Maiden Ore Reserve of 10.1Mt at 30.2% phosphate. Although this was short of the 2017 Exploration Target, it was a higher grade and produced solid economics - an NPV of \$172m, an internal rate of return of 40% and a payback period of just four years. This was based on an annual production of 800,000 wet tonnes of concentrate and a minimum 10-year project life. The capital requirement was a modest A\$77m.

Less than 6 months later, in February 2019, Centrex optimised the DFS. The pre-tax NPV was improved by 56% to A\$269m, the payback was reduced to just 1.8 years and pre-production capital costs were reduced by 13% to US\$49m. The catalysts were design improvements and updated pricing – the latter coming through improved phosphate pricing and improved quality phosphate – Ardmore's phosphate rock concentrate was assumed to be 35% higher than the upper end of the benchmark grade. The IRR jumped to 63%.

*The updated DFS found an NPV of \$207m, an IRR of 52% and a payback period of 2 years.*

### The updated DFS (2021)

The updated Definitive Feasibility Study was released in August 2021. Among the key metrics (outlined in Figure 2), it found an NPV of \$207m, using a 7% discount factor, a pre-tax IRR of 52% and a payback period of 2 years. At first glance this may appear a step backwards from the optimised DFS. However, the project was still shown to be robust and profitable, with gross revenue of A\$1.453bn, a total cost of A\$965m and free cash of A\$429m. And the mine designs and resulting Ore Reserves remained unchanged – 10.1m tonnes at 30.2% phosphate. This may appear a moot point but this recognises phosphate's insensitivity to higher mining costs due to the orebody's low

Figure 2: Results of the August 2021 Definitive Feasibility Study

Parameter	Result	
Study accuracy	+/- 15%	
Project life	10 years	
Annual production	800,000 wet tonnes	
Pre-production capital cost	A\$ 78 million	US\$ 58 million
Average FOB operating cost ex-royalties	A\$ 125/dmt	US\$ 92/dmt
Static FOB sales price	A\$ 182/t	US\$ 135/t
A\$:US\$ exchange rate assumption <sup>(2)</sup>	0.74	
<b>Pre-tax results (nominal) <sup>(3)</sup></b>		
Unleveraged NPV <sub>7</sub>	A\$ 207 million	US\$ 153 million
Unleveraged NPV <sub>10</sub>	A\$ 166 million	US\$ 123 million
Unleveraged IRR	52 %	
Net cash flow	A\$ 429 million	US\$ 317 million
Pay Back Period	< 2 years	

Source: Company

waste strip ratio and shallow dipping nature.

The decline in NPV was because of a 10% jump in operating costs and a 13.6% jump in capital costs to reflect increases in labour costs, updated vendor quotations, construction material costs and recent project benchmarking. It



also assumed conservative phosphate pricing at US\$135/t – as we will outline in the next section, phosphate prices have more than doubled since then.

We note four further points. First, the study made no assumption about the sources of funding, assuming a 100% equity finance basis. Second, it was prepared on a Free on Board basis (FOB) instead of end customer Cost and Freight (CFR) price. This reflects the reality that future customers will arrange their own shipping, thereby freeing Centrex from freight fluctuations and foreign exchange. Third, since the update the company has continued to conduct optimisation studies with the aim of further improving the project's value. Potential solutions include the use of reverse flotation to increase reserves and simplify mining, optimising the location of the commercial plant (so lower capital and operating costs could be realised) and by-product value-adding opportunities. Fourth, and most important of all, the company has since commenced commercial production.

### **Ardmore 1, 1.5 and 2**

It is important to note the differences between the different Stages of the project as this can confuse investors. So-called 'Stage 2' of the project is the basis of the DFS and estimates 800kt per annum. Stage 1 comprises of the original demonstration plant that processes rock and send it to offtakes, designed to work at 240kt per year and to depict that production would be viable.

Stage 1.5 involves the same demonstration plant but with production at 400k or more. Centrex anticipates making a Final Investment Decision on the latter two stages by the end of CY22 and commencing production in CY23.

### **All systems go now**

Centrex began production in the current quarter, with its logistics operator beginning the transport of the first high-grade phosphate rock to the Townsville port in August. An initial transport rate of 10,000t per month was scheduled and it is planned to increase up to 30,000t per month during the 2023 calendar year. Stage 1.5 can be achieved with existing facilities on site. Centrex's Beneficiation Plant has achieved its name plate capacity and metallurgical design performance. It is consistently and reliably achieving the designed throughput rate of 70 tonnes (wet) per hour feed of phosphate rock. Achieved product yield appeared to be in line with the plant's design 70% design parameter.

### **Offtakes reserved**

A major challenge for resources company is securing offtake, but Centrex got its first offtake agreement some years ago. The previous owner of the project, Incitec Pivot, passed over the keys with a first right of refusal on 30% of available production for the life of the mine.

In October 2021, Centrex secured an offtake deal with Samsung C&T Corporation. This deal that included the exclusive marketing rights for Ardmore phosphate for Korean, Japan, Indonesia, India and Mexico for the first three years of the mine, where its right of first refusal encompasses 20% of Ardmore output (160kt). In April and May 2022, Centrex signed on two New Zealand farm co-operatives – Ravensdown and Ballance – which secured first right of refusal to purchase up to 20% each. The pair began with a trial

*Centrex began production in the current quarter.*





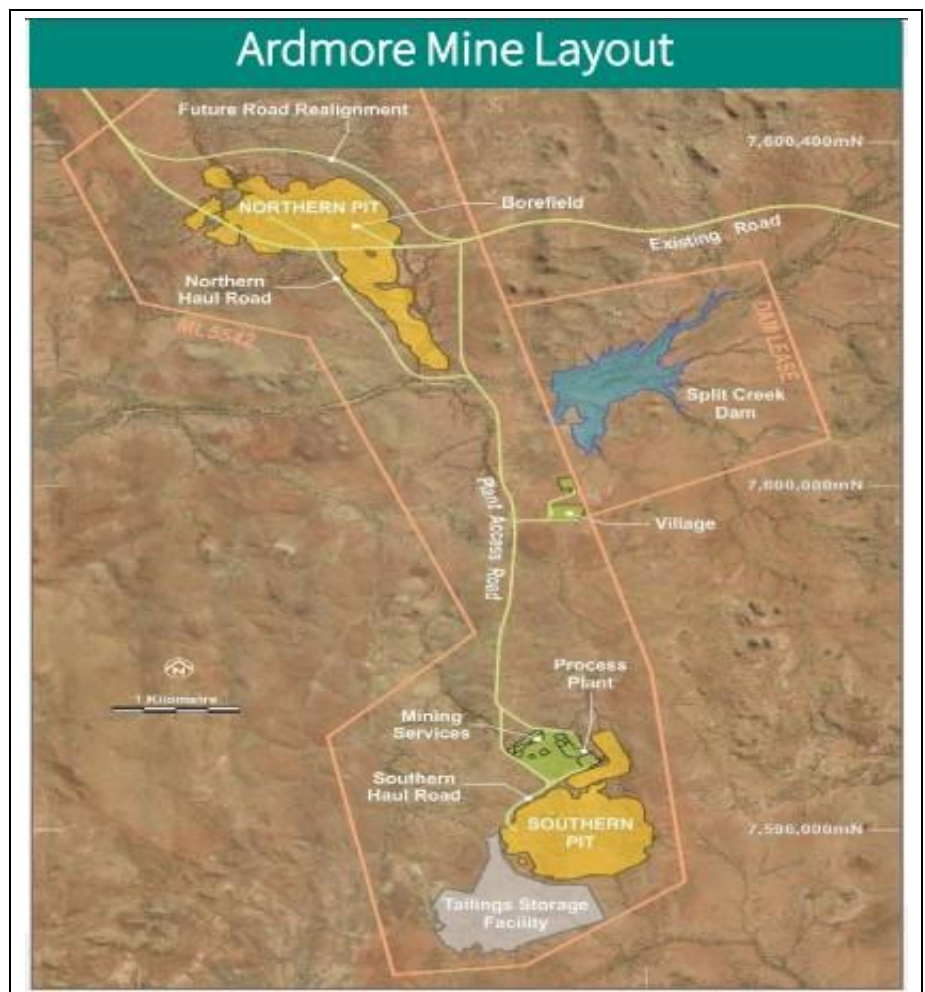
shipment of 5kt each. Now that Ravensdown and Ballance are signed on, 90% of initial output is already accounted for.

It is important to note that these agreements do not mean production is secured for three years. The agreements include an initial qualifying shipment and a first right of refusal for subsequent production (for three years). This first right option has to be exercised within 60 days of receipt of the initial shipment. If unexercised, the option lapses, allowing Centrex to place the future production with another customer.

### How Ardmore will work

As depicted in Figure 3 Centrex's phosphate is extracted from the open cut project, then transformed at an on-site processing plant. The plant will wash, scrub and de-slime the free-digging ore to produce the phosphate concentrate. From there, it will be transported to Townsville and onward to export customers.

Figure 3: Ardmore Mine Layout



Source: Company



*Centrex also holds the Oxley Potash Project in Western Australia and the Goulburn Polymetallic Project*

## Centrex's other projects

Centrex has two further projects. First, the Oxley Potash Project in Western Australia, and second, the Goulburn Polymetallic Project in the New South Wales Lachlan Ford Belt.

### The Oxley Potash Project

The Oxley Potash Project is located in the Midwest of Western Australia around 125km southeast of the port of Geraldton. The project covers a very rare 32km long shallow dipping and outcropping potash feldspar-rich lava flow. The lava flow is up to 72m thick with average combined interval grades of up to 10.1% K<sub>2</sub>O.

Centrex intends to develop a direct process route to higher value potash fertiliser products such as potassium nitrate and potassium sulphate. Metallurgical test work for this is underway. The project has very favourable mining, infrastructure and logistics scenarios compared to most potash projects. The project is located next to existing roads, rail, power, and gas infrastructure. It has a 155m tonne Inferred Mineral Resource at 8.3% potash. This was estimated from just a 3km section of the overall 32km striking ultrapotassic lava flow that is the basis of the project. The Inferred Mineral Resource includes 38m tonnes at 10% potash using a 9% cut-off. A further exploration target has been interpreted over the remainder of the deposit, showing potential for large resource extensions in the future.

### The Goulburn Polymetallic Project

The Goulburn Polymetallic Project is located in the Lachlan Fold Belt in New South Wales. Geophysical mapping of the project area has shown promising conductor targets located on the edge of a major gravity high adjacent historically defined zinc, lead and copper mineralisation. A drill program conducted in early 2015 has intersected a zone of massive and semi-massive polymetallic sulphide mineralisation at the newly discovered Collector North Polymetallic Prospect. Ongoing technical studies are underway including petrology of mineralisation and alteration seen at both the Collector and Collector North. There are no JORC compliant resources identified with this particular project.

Neither project has been included in our valuation at this early stage, but investors should know that this company holds 100% of both and that they could present further opportunity for upside down the track. For now, though, Centrex is focused on Ardmore.



*Phosphate is a phosphorus fertiliser that is critical for the root development of plant and crops*

### Phosphate – An important fertiliser

Phosphate is a type of phosphorus fertiliser that is critical for the root development of plants and crops. In fact, phosphorous is a macro nutrient that is required by every living cell. Phosphate tends to be mined from rock and it is used to produce phosphoric acid which then is used to produce high phosphate content fertiliser. There are other uses for phosphate, including detergents, food additives, animal feeds, asphalt, pharmaceuticals and cosmetics, but agriculture is easily the most important.

Before we go any further, we need to make a few important clarifications. First, it is important to note the difference between phosphate and phosphorous. These two terms are often used interchangeably but these are different. Phosphorous is a general element while phosphate is an anion composed of phosphorous and oxygen atoms – in other words phosphate is phosphorous mixed with oxygen. It’s also important to appreciate that phosphate is a different product to potash. Even though they are both used for the same purpose, each has different applications for the specific requirements of a particular crop, climate, soil type or topography.

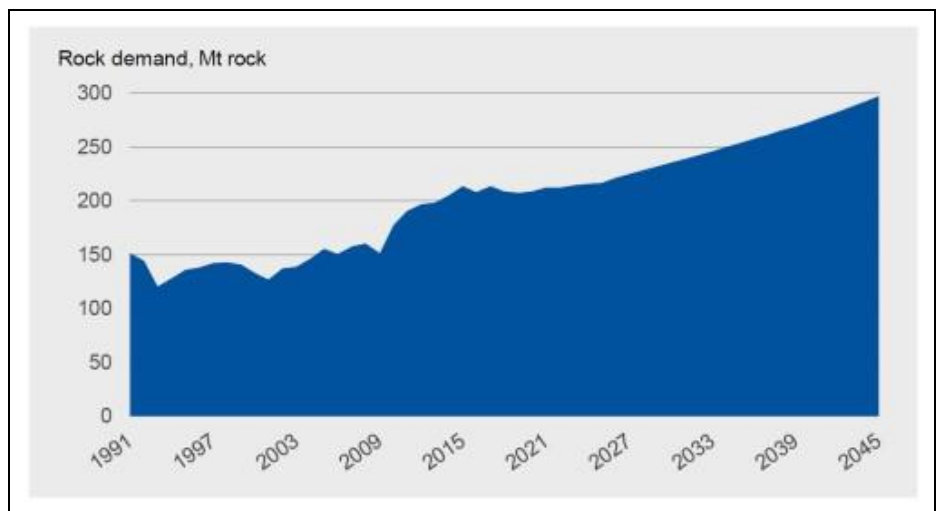
Third is the difference between Monoammonium Phosphate Fertilizer (MAP) and Diammonium Phosphate Fertilizer (DAP). Both are phosphate fertilisers with roughly the same phosphorous content (~50% for MAP and ~46% for DAP) and have to be treated from beneficiated phosphate rock. DAP has higher nitrogen and nutrient content. Centrex’s phosphate rock is the starting point of these and all other downstream phosphate products.

*The CSIRO has estimated that the global market for phosphate is worth US\$51.6bn.*

### A big global market exists

The CSIRO has estimated that the global market for phosphate is worth US\$51.6bn<sup>1</sup>. Demand is expected to grow in the coming years as a growing world population puts pressure on the food supply chain.

Figure 4: Global demand for phosphate



Source: Company, CRU

<sup>1</sup> CSIRO Resourceful Issue 14: Innovate, Improve, Grow. 22 February 2021



*Australia consumes 400kt of phosphate per year, all of which is imported.*

The most recent Mineral Commodities report from the US Geological Survey projects that demand will rise from 47 million metric tonnes in 2020 to 49m metric tonnes in 2024.

### **Five major producers**

China produces more than one-third of the world's phosphorus, followed by the United States, India, Morocco, and Russia, respectively. Combined, these five countries produce more than three-quarters of the global supply of phosphorus.

The largest exporters of Phosphate in the world are Russia and China. Some of the leading producers are OCP Group (Morocco), PJSC PhosAgro (Russia), Prayon S.A. (Belgium), Sichuan Chuanxi Xingda Chemical Co. Ltd (China), United Phosphorus Ltd (India), Wengfu Group (China) and Yara International ASA (Norway).

### **Australia's current situation**

The current Australasian market consumption of phosphates is approximately 400,000 tonnes in Australia and 600,0000 tonnes in New Zealand which is largely sourced from major global producing areas which include North Africa, Vietnam and China. Australia imports 100% of its high grade Phosphate Rock usage and Australia imports about 80 per cent of its total phosphate supply.

65 per cent of the Monoammonium phosphate (MAP) fertiliser used in Australia came from China. Strong global demand, high energy prices and pandemic-driven shipping constraints have seen global phosphate prices double in 2021 (from 2020), China's economic planning body, the National Development and Reform Commission (NDRC), moved to restrict the production and export of phosphates until the middle of 2022. Additionally, as one of the biggest exporters of phosphate fertiliser, Russia has caused major disruptions to the global supply chain with its invasion of the Ukraine. As a result, DAP and MAP imports in Australia are likely to be sourced from Morocco, the Western Sahara and potentially the US. These countries are the second, fourth and fifth largest phosphate producers globally.

### **Reliance on imports is biting the Australian market**

The Australian and global markets for phosphate has been rocked two actions in the last 12 months. First, was China in restricting imports. It began in late 2021 as a blanket ban on exports, pivoting to a quota system. For the second half of 2022, the quota is 3.16mt – well short of what China has produced in the past. China's reasoning was to protect the domestic market, to help prices fall to more affordable levels. The second was the Russia-Ukraine war which led to sanctions on Russian goods, including phosphate. While Russia was not as big a producer as China, the exclusion of its phosphate from the market was a double-whammy because it produced 13% of world output. What also has not helped matters is higher transport costs input costs, particularly ammonia and sulphur, which went up 313% and 194% respectively in 2021, compared to 2020.

*The current market disruptions highlight the utility of Australia producing its own phosphate and also enhance the financial appeal of the project.*

This situation is to Centrex's benefit for two reasons. First, it highlights the utility of Australia producing its own phosphate which is what the Ardmore project can help with. We think it is a telling sign that Centrex has 100% of its production for the next three years already reserved. Second, elevating prices enhance the financial appeal of the project. As we noted in our introduction, the DFS was completed at a price of US\$125/mt, but the World Bank benchmark is currently US\$320/mt.



## Strategic advantages for Centrex

Clearly, Australia's market is in need of local phosphate production. But what makes Centrex stand out ahead of other aspiring producers for would-be customers as well as for investors?

### High quality product

While demand for phosphate generally is large, there is particularly high demand for premium grade phosphate rock. The phosphate at Ardmore is 34-35% grade, above the typical 27-34% range phosphate ore grade.

It also lacks undesirable by-products that customers don't want. The unique ultra-low cadmium and low carbonate content allows the product to be used by local manufacturers without the need for blending, thereby reducing costs for those manufacturers.

### Solid project economics

The DFS for Ardmore, first completed in 2018 and updated in 2021, delivered an ungeared pre-tax NPV of A\$207m and an IRR of 52%. It provided an initial payback of < 2 years.

This is due to the simple open-cut operation with low costs and low strip ratio mining. Processing is done on site using traditional and well understood processing techniques and the majority of infrastructure is in place already.

### Ability to service export markets

Beyond meeting domestic demand for phosphate, Ardmore has potential to service export markets in the Asia-Pacific, particularly New Zealand, Indonesia and India. A telling sign is that Centrex has appointed Samsung as a Marketing Representative (and the sole and exclusive representative) for Korea, Japan, Indonesia, India and Mexico.

## Centrex's phosphate peers

**Incitec Pivot (ASX:IPL)** is an ASX 100 company that is a key supplier of Australia's soil health and nutrition needs. It provides a broad range of phosphorous fertilisers including phosphate. It also has an explosive products division.

**Ariane Phosphate** is listed on the TSX-V and has the development-stage Lac a Paul phosphate project in Quebec. It has secured initial offtake and marketing deals and the project is fully permitted and construction ready. In addition to agriculture, it is exploring the potential to supply high-quality materials to the energy sector.

**Fertoz (ASX:FTZ)** is an ASX listed company that markets and develops a range of organic fertilizer products in North America and Australia. It has two wholly owned rock phosphate project in British Columbia, Canada.

**Itafos** is listed on the TSX-V and is a phosphate-based fertilizer and specialty products company with projects in Brazil, Peru, the US and Guinea-Bissau.

**Minbos Resources (ASX:MNB)** has the Cabinda phosphate fertilizer project in Angola. It was granted a mining license in early 2021 and secured a commercial site for its phosphate granulation plant in Angola.

**Mosaic** is listed on the NYSE and is one of the world's largest producers and marketers of concentrated phosphate and potash crop nutrients. It has various phosphate operations in Florida, Louisiana and South America.





**Nutrien** was formed in 2016 from a merger of phosphate miners Agrium and the Potash Corporation of Saskatchewan. It is one of the world's largest providers of crop fertilizers and services, with an agricultural retail network that services over 500,000 grower accounts.

### Other companies in the phosphate space

**Vale** is a mining company best known for iron ore, but has a number of phosphate-producing and development-stage projects. In Brazil, an agricultural powerhouse and the world's fifth largest fertilizer consumer, the company operates the country's only potash mine. It is also developing phosphate projects in Canada and Mozambique.

**Verdant Minerals Ltd:** Verdant Minerals explores for phosphate, potash, and silica and high purity quartz rock minerals. It holds 100% stake in the Ammaroo Phosphate project, which has potential to produce 2mtpa of phosphate concentrate processing into 500ktpa of phosphoric acid. It also has another phosphate project, called Patanella.

**Avenira Ltd (ASX: AEV):** Avenira's flagship project is its 100% owned the Jundee South Gold project but it also owns 100% in Wonarah Phosphate Project. Wonarah has 300mt of measured and mineral phosphate resources but is on hold until the proprietary technology is validated.

**Arafura Resources Ltd (ASX: ARU):** Arafura explores for and develops mineral properties in Australia. Nolans project, a rare earths-phosphate-uranium-thorium deposit that supplies neodymium and praseodymium products. The project can produce 144ktpa of fertilizer-grade phosphoric acid as a by-product in the process of production of NdPr.

**Gibb River Diamonds Ltd (ASX:GIB)** Gibb River Diamonds engages in the development and exploration of mineral properties in Australia. The company holds 100% interests in the Ellendale Diamond project located in Kimberley Region, Western Australia; and the Highland Plains Phosphate project. GIB is looking for partners for the Highland Plains Phosphate project which has JORC compliant inferred resources of 53mtpa at 16% P<sub>2</sub>O<sub>5</sub>.

**Chatham Rock Phosphate Ltd. (NZX: CRP):** This company is based in New Zealand. It focuses on development and exploitation of rock-based phosphate deposits. Chatham holds a 20-year mining permit over a 23.4 Mt phosphate deposit. The Makatea Project in French Polynesia is planned to produce 250ktpa with an expected start date of 2024, while the Korella Mine is planned to produce 250ktpa. The flagship Chatham Rise project could produce 1.5mtpa by 2027. The company will also produce 30ktpa of dicalcium phosphate from 2025 onwards.

**Aquia Resources (ASX: AQA):** Aquia is planning to build a phosphate mine in southern Brazil that is expected to have a 300kt pa capacity at maturity. Eventually it will serve the Brazilian market which, similar to Australia, is overly reliant on foreign imports.





*We value Centrex at \$0.31 per share base case and \$0.60 per share bull case.*

## Valuation and catalysts

We value Centrex at \$0.31 per share base case and \$0.60 cents per share optimistic case, using a DCF approach that is largely based on the assumptions of the DFS. We have not included any potential upside from its potash project in WA or base metals prospects in NSW. The key assumptions driving our DCF valuation are outlined below:

- **Phosphate prices:** Notwithstanding the high phosphate price at present, we opted to start with the DFS study price for conservatism's sake and then assume 3% growth per annum up to FY27. From there, we assume an annual 4% decline in prices. In our bull case, we have assumed a 30% premium to our starting price (which is still lower than phosphate prices at present!) but have assumed the same growth and decline assumptions.
- **Royalty:** We assume the Queensland government's phosphate royalty remains in place for the life of the model and at current levels, which is \$0.80 per mt of phosphate rock. We assume the rock mined is 20% higher than production, which is in line with the company's estimations.
- **Capex.** We have assumed a total of A\$90m is raised in the next 12 months. This figure is higher than the company estimated in its DFS, but we have assumed the company goes slightly beyond this and uses the balance of proceeds for general working capital. We also note that the company assumed an 8% contingency and we have kept this. We assume this is deployed evenly from FY23 to FY27 and then ongoing capex of \$5m per annum from FY28 onward.
- **Funding.** We assume a 63-35 split between equity and debt. Our assumptions of an equity raising and the eventual exercise of options increases the number of shares on issue than what is actually the case at present. Prior to financing, our base case is \$0.46 per share and our bull case is \$0.90 per share.
- **Discount rate.** We arrive at a WACC of 11.78%, reflecting 3.9% risk free rate of return (reflecting the 10 year Australian government bond rate), a 7% equity premium and a 1.5 beta. We assume a 7.0% after tax cost of debt (derived from a 10% interest rate and a 30% corporate tax rate). We assume terminal growth of 2%, assuming it can extend the life of the project beyond 10 years with additional phosphate rock discoveries.

Figure 5 shows our valuation summary for Centrex's Ardmore project and the upside potential of the stock. The midpoint of our valuation range is 45.5 cents per share.

Figure 5: DCF valuation for CXM

Valuation (A\$m)	Base case	Bull case
Present value of FCF	136	283
Present value of Terminal FCF	137	257
<b>Enterprise Value</b>	<b>274</b>	<b>540</b>
Net debt (cash)	(8)	(8)
<b>Equity value (A\$)</b>	<b>282</b>	<b>548</b>
Shares outstanding (post financing)	921	921
<b>Implied price (A\$ cents)</b>	<b>0.31</b>	<b>0.60</b>
Current price (A\$ cents)	0.13	0.13
Upside (%)	138.5%	362.5%

Estimates: Pitt Street Research



Figure 6: DCF value in A\$ cents using various WACCs

Sensitivity Analysis						
WACC	11.78%					
Terminal Growth Rate	2.00%					
Implied Price (A\$ cents)	\$0.31	8.33%	10.33%	11.33%	12.33%	14.33%
Change in Terminal Growth Rate	0.50%	0.43	0.33	0.29	0.27	0.23
	1.00%	0.44	0.35	0.30	0.28	0.23
	2.00%	0.49	0.36	0.31	0.29	0.24
	3.00%	0.55	0.39	0.34	0.30	0.25
	4.00%	0.64	0.43	0.37	0.32	0.26

Estimates: Pitt Street Research

We foresee the stock being re-rated to our valuation range driven by the following factors:

- Further offtake agreements being signed.
- Production ramping up to levels anticipated in the DFS.
- Continued global supply constraints of phosphate.
- Continued elevated phosphate prices

## Risks

We see the following key risks to our investment thesis:

- **Funding risk:** Centrex currently generates minimal revenue from its mine, and it will require external funding to support its ultimate ambitions for Ardmore. Even though the project promises a quick payback, raising funds on favourable terms (both debt and equity) along with timeliness can be a key challenge for companies at Centrex's stage. Each 2% rise in interest rates takes 1-2c off our implied price.
- **Project delays:** We have assumed that the company will continue to ramp up production on schedule. But if there are delays due to funding, operational challenges or regulatory hurdles, the project timelines will be pushed back, which will affect the cash flows and economics of the project.
- **Underlying commodity risk:** Centrex is exposed to commodity price risk, which depends on macroeconomic factors and demand and supply dynamics of the underlying commodity.
- **Geological risk:** The reserves and resources figures for the Ardmore project are estimates. There could be a downside risk if a portion of reserves is re-categorised as resources at a later stage.



## Strong and lean leadership

The company's current board and leadership composition is as below.

### Board of Directors

**Peter Hunt** is an experienced company director and has been a director and chairman over several decades of a number of ASX listed mineral exploration and technology-oriented companies. Appointed on 15 December 2020, Mr Hunt was a former consultant to BDO Australia which acquired PKF Adelaide of which he was a senior partner in 2012.

**Graham Chrisp** has a degree in Civil Engineering and has substantial experience in numerous aspects of business operations, including the design and construction of roads and other earthworks, mineral exploration and property development. As an owner and operator of earthmoving equipment for mining and civil applications, Mr Chrisp has practical experience with modest-scale mining operations, including several of his own developments. He was a founding director of Centrex Metals (having previously served as its Managing Director) and Lincoln Minerals Ltd and numerous private interests.

**John Parker** is a geologist, geophysicist and manager with extensive local and international experience and knowledge of the geology, mineral deposits and mineralizing systems in the Precambrian. Dr Parker was formerly Chief Geologist with the mapping branch of the South Australian Geological Survey. In the late 1980's he initiated the first geological mapping GIS in Australia, a system that has subsequently been developed to become the global leading GIS, SARIG.

Dr Parker has spent the last 26 years in mineral exploration as Director and Principal Geologist for Geosurveys Australia Pty Ltd including 11 years as Managing Director of Lincoln Minerals and Australian Graphite Pty Ltd. He has made a major contribution to the identification and delineation of graphite, iron ore, copper, lead, zinc, nickel, gold and other mineral resources and prospects in South Australia and has an in-depth knowledge of the global iron ore and graphite industries. He is a JORC qualified Competent Person in iron, graphite, copper and base metals.

**Robert Mencil** is an engineering and mining executive with more than 25 years' experience developing and operating a wide range of mining, mineral processing and engineering operations. Previously he held the position of CEO for RONPHOS Corp., the Republic of Nauru's Phosphate company, where he was responsible for production, marketing and export of phosphate to customers throughout Asia and Indian Pacific region. Mr Mencil brings significant senior managerial experience to the role at Centrex, having held the position of Managing Director/CEO of various ASX listed companies in the energy and resource sector.

### Senior Management

**Alastair Watts**, CXM's General Manager, Exploration, is a Geologist with over 25 years' experience in exploration, mining and project development. He has extensive gold, iron ore and phosphate mining experience as well as a successful history of mineral discovery and development. The technical expertise gained at the Phosphate Hill mine provided significant exposure to the fertiliser market to complement Centrex's development of the Ardmore Phosphate Rock Project. A broad technical knowledge of exploration has been gained from base metal and gold projects in the Lachlan Fold Belt of New South Wales, the eastern goldfields of Western Australia, the Drummond



Basin in north Queensland and nickel laterite deposits in Indonesia. He has held previous positions in both major resources houses, and mid-tier and junior operators. His roles have spanned mining, quality control and project management.

**Jonathan Lindh**, CXM's Company Secretary, is a qualified lawyer with over 15 years' legal and company secretarial experience predominantly in the energy and resources sector. He holds a Bachelor of Laws, a Bachelor of International Studies and postgraduate qualifications in corporate finance and corporate governance. Jonathan has extensive experience in the areas of corporate governance, equity capital markets, mergers and acquisitions, joint ventures, farm-in arrangements, foreign investment and native title / Aboriginal heritage. Jonathan also serves as company secretary of ASX listed Woomera Mining and various other private and public companies.

**Cormac Byrne**, CXM's Chief Financial Officer, is a corporate accountant with over 18 years of accounting experience, with a strong background in financial accounting and corporate advisory services. Mr Byrne has extensive experience in dealing with all aspects of public company affairs, assisting in the IPO of several listed entities, various mergers/acquisitions and providing general accounting and company secretarial support. Prior to joining Centrex Metals, Mr Byrne was a key member of the Corporate Division of Chartered Accounting firm HLB Mann Judd (SA) Pty Ltd for a period of 12 years and post this he worked for the Commonwealth Bank in their Corporate and Business Banking Division as a portfolio executive. Over the last 3 years, Mr Byrne established and worked as a Corporate Consultant with the majority of his clients in the public listed space. Mr Byrne consulted to Centrex for a period of 12 months before accepting the full-time CFO role.



## Appendix I – Analysts’ Qualifications

Nick Sundich, lead analyst on this report, is an equities research analyst at Pitt Street Research.

- Nick obtained a Bachelor of Commerce/Bachelor of Arts from the University of Sydney in 2018. He has also completed the CFA Investment Foundations program.
- He joined Pitt Street Research in January 2022. Previously, he worked for over three years as a financial journalist at Stockhead.
- While at university, he worked for a handful of corporate advisory firms.

Stuart Roberts has been covering the Life Sciences sector as an analyst since 2002.

- Stuart obtained a Master of Applied Finance and Investment from the Securities Institute of Australia in 2002. Previously, from the Securities Institute of Australia, he obtained a Certificate of Financial Markets (1994) and a Graduate Diploma in Finance and Investment (1999).
- Stuart joined Southern Cross Equities as an equities analyst in April 2001. From February 2002 to July 2013, his research specialty at Southern Cross Equities and its acquirer, Bell Potter Securities, was Healthcare and Biotechnology. During this time, he covered a variety of established healthcare companies such as CSL, Cochlear and Resmed, as well as numerous emerging companies. Stuart was a Healthcare and Biotechnology analyst at Baillieu Holst from October 2013 to January 2015.
- After 15 months in 2015 and 2016 doing Investor Relations for two ASX listed cancer drug developers, Stuart founded NDF Research in May 2016 to provide issuer-sponsored equity research on ASX-listed Life Science companies.
- In July 2016, with Marc Kennis, Stuart co-founded Pitt Street Research Pty Ltd, which provides issuer-sponsored research on ASX-listed companies across the entire market, including Life Science companies.

## **General advice warning, Disclaimer & Disclosures**

### **Terms & Conditions**

The information contained herein ("Content") has been prepared and issued by Pitt Street Research Pty Ltd ACN 626365615 ("Pitt Street Research"), an Authorised Representative (no: 1265112) of BR Securities Australia Pty Ltd. ABN 92 168 734 530, AFSL 456663. All intellectual property relating to the Content vests with Pitt Street Research unless otherwise noted.

### **Disclaimer**

Pitt Street Research provides this financial advice as an honest and reasonable opinion held at a point in time about an investment's risk profile and merit and the information is provided by the Pitt Street Research in good faith. The views of the adviser(s) do not necessarily reflect the views of the AFS Licensee. Pitt Street Research has no obligation to update the opinion unless Pitt Street Research is currently contracted to provide such an updated opinion. Pitt Street Research does not warrant the accuracy of any information it sources from others. All statements as to future matters are not guaranteed to be accurate and any statements as to past performance do not represent future performance.

Assessment of risk can be subjective. Portfolios of equity investments need to be well diversified and the risk appropriate for the investor. Equity investments in a listed or unlisted company yet to achieve a profit or with an equity value less than \$50 million should collectively be a small component of an individual investor's equity portfolio, with smaller individual investment sizes than otherwise. Investors are responsible for their own investment decisions, unless a contract stipulates otherwise.

Pitt Street Research does not stand behind the capital value or performance of any investment. Subject to any terms implied by law and which cannot be excluded, Pitt Street Research shall not be liable for any errors, omissions, defects or misrepresentations in the information (including by reasons of negligence, negligent misstatement or otherwise) or for any loss or damage (whether direct or indirect) suffered by persons who use or rely on the information. If any law prohibits the exclusion of such liability, Pitt Street Research limits its liability to the re-supply of the Information, provided that such limitation is permitted by law and is fair and reasonable.

### **General advice warning**

The Content has been prepared for general information purposes only and is not (and cannot be construed or relied upon as) personal advice nor as an offer to buy/sell/subscribe to any of the financial products mentioned herein. No investment objectives, financial circumstances or needs of any individual have been taken into consideration in the preparation of the Content.

Financial products are complex, entail risk of loss, may rise and fall, and are impacted by a range of market and economic factors, and you should always obtain professional advice to ensure trading or investing in such products is suitable for your circumstances, and ensure you obtain, read and understand any applicable offer document.

### **Disclosures**

From time to time, Pitt Street Research representatives or associates may hold interests, transact or hold directorships in, or perform paid services for, companies mentioned herein. Pitt Street Research and its associates, officers, directors and employees, may, from time to time hold securities in the companies referred to herein and may trade in those securities as principal, and in a manner which may be contrary to recommendations mentioned in this document.

Pitt Street Research receives fees from the company referred to in this document, for research services and other financial services or advice we may provide to that company. The analyst has received assistance from the company in preparing this document. The company has provided the analyst with communication with senior management and information on the company and industry. As part of due diligence, the analyst has independently and critically reviewed the assistance and information provided by the company to form the opinions expressed in the report. Diligent care has been taken by the analyst to maintain an honest and fair objectivity in writing this report and making the recommendation. Where Pitt Street Research has been commissioned to prepare Content and receives fees for its preparation, please note that NO part of the fee, compensation or employee remuneration paid will either directly or indirectly impact the Content provided.