

PILBARA QUARTERLY ECONOMIC UPDATE

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Key Messages

There is increasing exploration and investment in the gold, copper, fertiliser and salt industries in the Pilbara. Whilst iron ore will remain the dominant extraction resource, the contribution of these sectors to increased employment, business opportunities and a more diversified economy bodes well for the medium to long term strength of the Pilbara economy. Australia is likely to become the world's biggest gold producer in 2021, with the value of production expected to grow to \$31 billion (b) in the current financial year¹.

An additional 8,000 skilled workers will be needed in Western Australia's resources sector over the next 12 to 18 months to meet peak economic recovery demand, according to workforce modelling by the Chamber of Minerals and Energy of Western Australia (CME).

In the Pilbara, **major resource companies have committed to employing locally**. In response to coronavirus pandemic (COVID-19), companies moved early and decisively to relocate thousands of their employees and contractors in critical roles to Western Australia (WA), with companies offering incentive packages to make the move permanent. The skills migration to the West brought on by COVID-19 has been nothing short of phenomenal. The vast majority of WA's interstate FIFO workforce of around 5,000

has made the move west, some individually, others with their families at very short notice prior to the state border closure in April. The CME foresees a considerable increase in competition for key skills, such as traditional trades and experienced technicians, front line supervisors and maintainers, and safety and medical support services.

A record 135,000 people are currently employed in WA's resources sector.

For the first time since 2012/13 boom, the resources sector has **recorded an increase in year-on-year investment**, with much of it in the Pilbara. Data from the WA Department of Mines, Industry Regulation and Safety (DMIRS) show almost \$19b was invested in WA's resources sector in 2019/20, up from \$17b the previous year. The latest DMIRS data also shows **\$129b worth of resources projects in the pipeline**, across WA, up from \$118b in March. Iron ore sales reached a record \$103b on increased output and an eight-year price high. Gold sales also soared to an all-time high of almost \$16b, with prices averaging more than \$2,300 per ounce.

Increased iron ore royalties have shielded the WA State Government finances from the impact of COVID-19, with the State announcing a **\$1.7b surplus** for the last financial year.

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Financial Review: 28/09/2020

Summary of Sector Developments

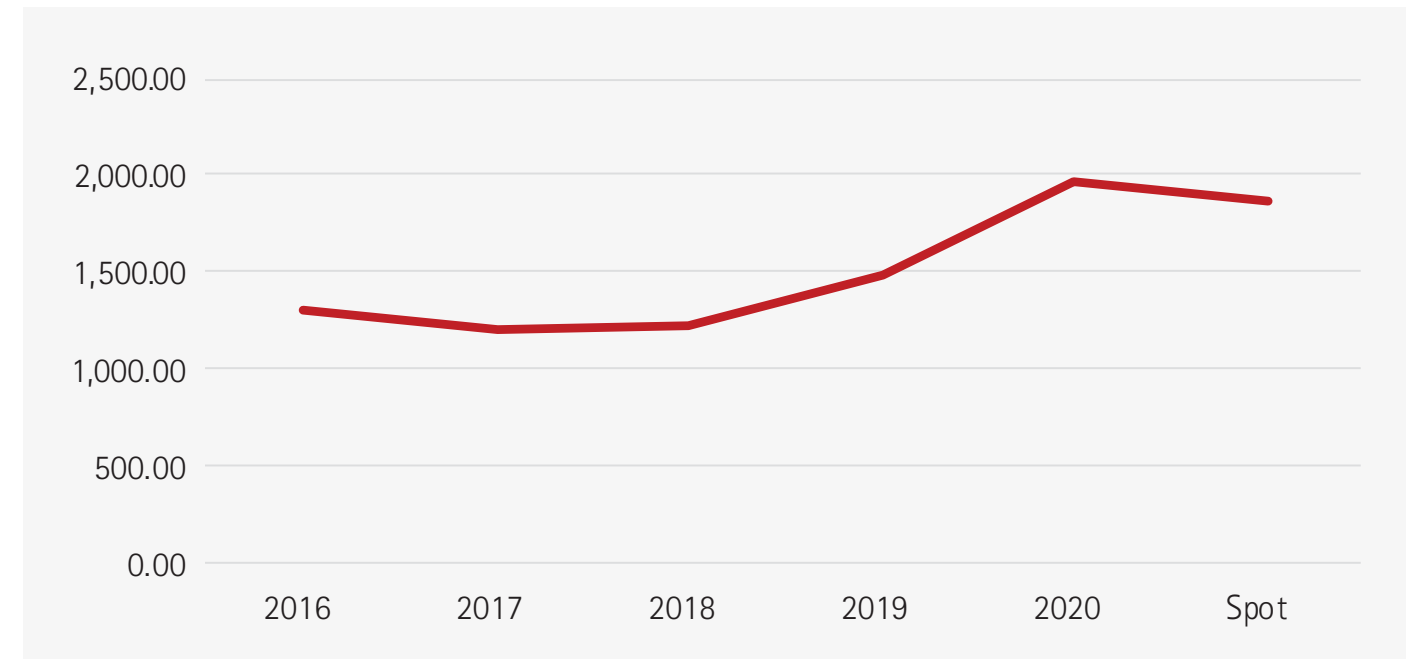
- **Gold prices continued to rise strongly until mid-September**, when there was a correction though remaining at a 20 year high. The pace of exploration has accelerated sharply, with a strengthening of the pipeline of possible projects in the future. There are continuing signs that the gold sector is likely to play a stronger role in the economy of the Pilbara in the future, including employment. This economic quarterly has a focus on the Pilbara gold sector.
- **Copper prices have risen strongly** and the level of exploration in the Pilbara has increased further.
- **Significant investments** of billions of dollars in **fertiliser and salt in the Pilbara** are about to start, with the creation of hundreds of operational jobs.
- **Iron ore has continued to benefit from strong price rises**, as exports from Brazil have still not fully recovered and demand from China has increased further.
- **Oil and natural gas prices have remained weak**, with the recession in much of the globe impacting demand. WA's petroleum sector experienced a 4% dip in sales to \$37b on the back of softer oil prices in 2019/20.
- **Beef prices have declined from very high levels** and punitive measures taken by China may continue to dampen the outlook somewhat in the short term.
- **Lithium prices have fallen further** and production activity remains curtailed. Sales of spodumene concentrate fell by 45% to \$917 million (m) on lower volumes and large price falls. However, it is still the opinion of analysts that prices will rise in the medium to long term, with a resumption of increased levels of production and employment over time.
- **Exploration:** Confidence has returned to WA's exploration sector according to the Association of Mining and Exploration Companies.



Commodity Prices and Resource Sector Investments

Gold

GOLD PRICE: 2016 to September 2020 (US\$/oz)



SOURCE: WORLD BANK

Sharp increase in prices continues, increased investment and employment in the sector.

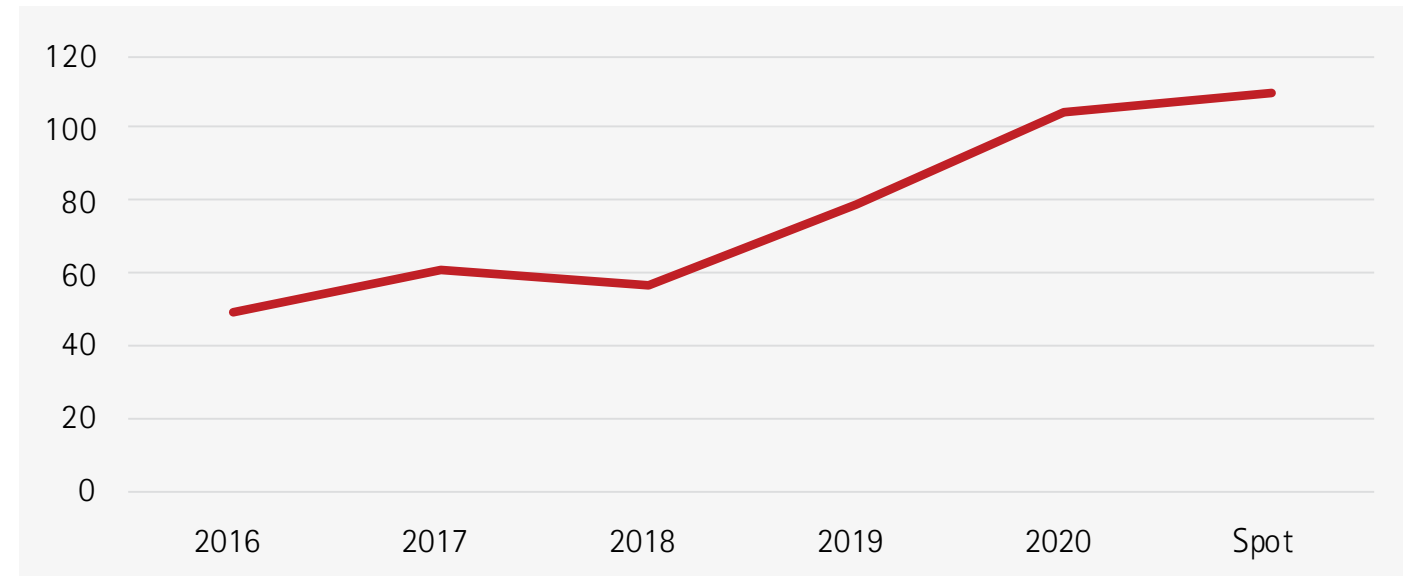
- **Initially, gold prices continued to increase in the September quarter**, before moderating. Further strength in the US Dollar may continue to work against higher prices, however uncertainties in the geo-political landscape and the impact of COVID-19 may limit the downside on prices. In Australian dollars the gold price is at record highs.
- **Australian gold production** experienced a strong recovery during the June 2020 quarter, with output totalling 85 tonnes (t), more than 10% above the March quarter and worth nearly \$25b at the average gold price for the period, which is a quarterly record.
- **Positive prices have continued to encourage additional activity in the Pilbara** with promising results:
 - De Grey Mining has successfully implemented a \$100m capital raising to help fund further activity at its promising Hemi gold discovery in the Pilbara.
 - Wiluna Mining is continuing development of the expansion of its mine with its high-grade gold deposit in the Central Armada Project in the East Pilbara.
 - Aruma Resources Melrose is to peg two new tenements after identifying new zones of gold mineralisation in the southern margin of the Pilbara.



- Novo Resources has also continued to produce results showing 'proof-of-concept' that its Egina Terrace in the Pilbara and has also bought Millennium Minerals. Novo looks set to capitalise on the skyrocketing gold price and become Australia's first conglomerate gold producer.
- Calidus Resources has final ministerial environmental approval for its planned \$116m Warrawoona mine 20km south-east of Marble Bar in the East Pilbara region and has raised \$25m for development. Calidus has also secured an agreement with Novo Resources to acquire the Blue Spec gold-antimony project in the Pilbara and is set to start an initial round of regional drilling at its recently acquired Otways gold-copper project in the Pilbara.
- Kairos Minerals has increased its exploration budget for its flagship Pilbara gold project hub about 100km south of Port Hedland in WA.
- Capricorn Metals is set to increase its throughput at the Karlawinda gold project in the Pilbara region to 5mt per annum.
- Caeneus Minerals is continuing with development of its Pilbara gold project, which is next door to De Grey Mining's emerging Hemi gold discovery.
- Coziron Resources has followed up a high-grade gold discovery drill hole at the Top Camp prospect at its Croydon project south east of Karratha, with encouraging results.
- East Pilbara explorer Antipa Minerals has struck its third exploration farm-in deal with a bigger, cashed-up player concerning its landholding in the Paterson Province, with \$30m to be spent on exploration.
- Rio Tinto has flagged creating a major new copper and gold mining operation in the Pilbara and is seeking to have multiple mines in production by 2023.
- ScandiVanadium has acquired the Pascalle gold project in Paterson Province and is going ahead with its exploration plans.
- BMG Resources has plans for becoming a gold explorer by acquiring three WA projects held by Oracle Mining. The Oracle assets include the Invincible project in the Pilbara, near the Warrawoona project, owned by Calidus resources.

Iron Ore

IRON ORE PRICE: 2016 to September 2020 (US\$ DMT 62% fines)



SOURCE: WORLD BANK AND BUSINESS INSIDER

High prices continue, further investments in replacement mines and some new production, medium term increased supplies on global markets.

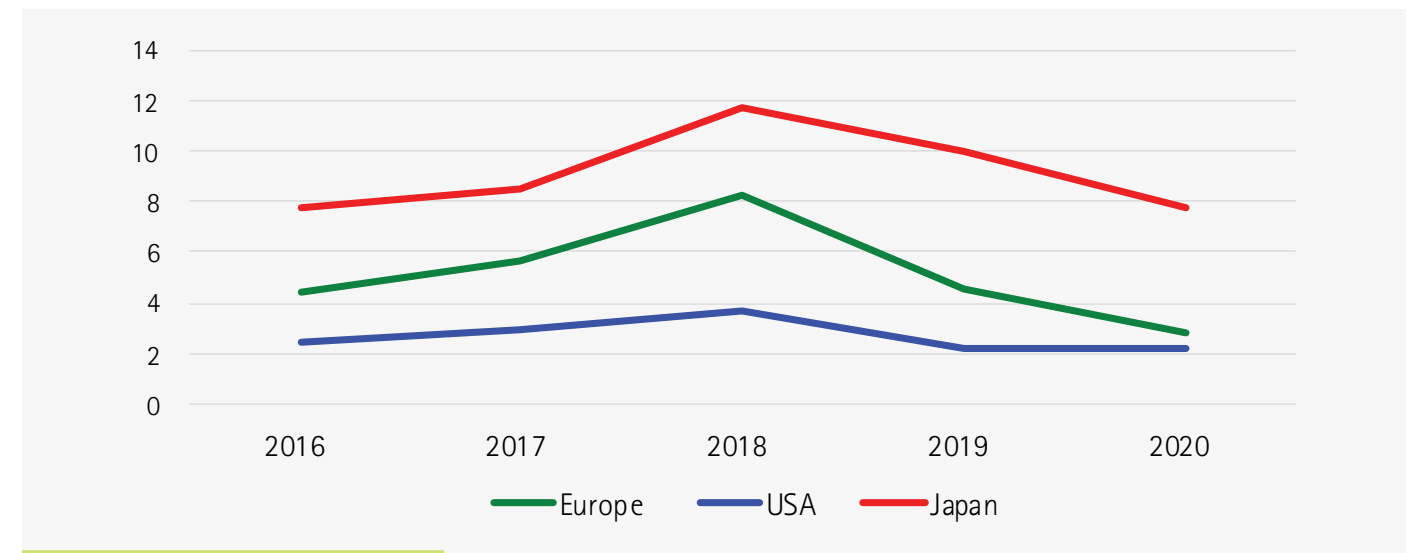
- **The iron ore price has increased during the quarter to levels above \$120/t.** High prices is the result of decreased supplies from Brazil and increased demand from China. Since the outbreak of the pandemic, Beijing has issued US\$683b in local and national debt with a focus on encouraging infrastructure projects, which has led to increased steel production.
- **Iron ore is the first Australian commodity to crack \$100b in annual export value,** according to the Australian Government's latest Resources Energy Quarterly report.
- **Various forecasting agencies have lifted their price forecasts** recently based on expectations for strong ongoing demand from Chinese steel mills. For example, Macquarie bank has upgraded the forecast for iron ore to US\$115/t for the rest of 2020 and US\$99/t for 2021.
- **Longer term prices are expected to decline,** due to increased supplies:
 - **Vale,** Australia's biggest iron ore rival, based in Brazil, will restore 100 million tonnes (mt) of iron ore capacity within two years, which was lost over the past 18 months due to catastrophic dam collapses and COVID-19 disruptions. To provide context, Australian miners collectively exported about 852mt of iron ore in the year to June 30, 2020.





LNG

LNG PRICES: Europe, USA, Japan – 2016 to September 2020 (US\$MMBtu)



SOURCE: WORLD BANK AND SPOT PRICES

Short term prices in Europe and the USA improved, but still very low prices in Asia continue, significant recovery medium to long term possible. Australian market to become more important to producers, large-scale investments delayed, but still not abandoned.

- **The LNG landscape in the Pilbara has continued to deteriorate** in the short-term. The industry is suffering from a number of challenges simultaneously. Although spot market prices have risen from their lows, they are still very weak in all markets, supplies are abundant, there is very weak demand in all global markets, and competition from renewables is increasing.
- Major setbacks suffered in the past 12 months by the LNG sector have left at least two dozen projects around the world in serious jeopardy, according to Global Energy Monitor.
- **The impact of COVID-19 on the LNG industry in Australia** has been dramatic. Some \$90b of new investments in Australia and Papua New Guinea have been postponed, following the price reductions that started in March, while Asian customers, including the Chinese, are resisting new long-term purchase

contracts, as they reassess their needs for gas in the wake of the pandemic.

- In the medium-term, policy around the world is increasingly tilted towards **achieving zero carbon economies** and the impact of this on fossil fuel demand is becoming increasingly difficult to predict. On the other hand, LNG companies and international consultants still believe that **natural gas demand growth will return**, as LNG is a cleaner fuel than oil and moves to tackle climate change and address poor air quality are strong drivers for demand for gas.
- **In the Pilbara**, Woodside has made a write down of \$6b, despite increasing production volumes in the June 2020 quarter. The company is factoring in a US\$80/t carbon price for all new LNG projects; double its projection in November 2019.

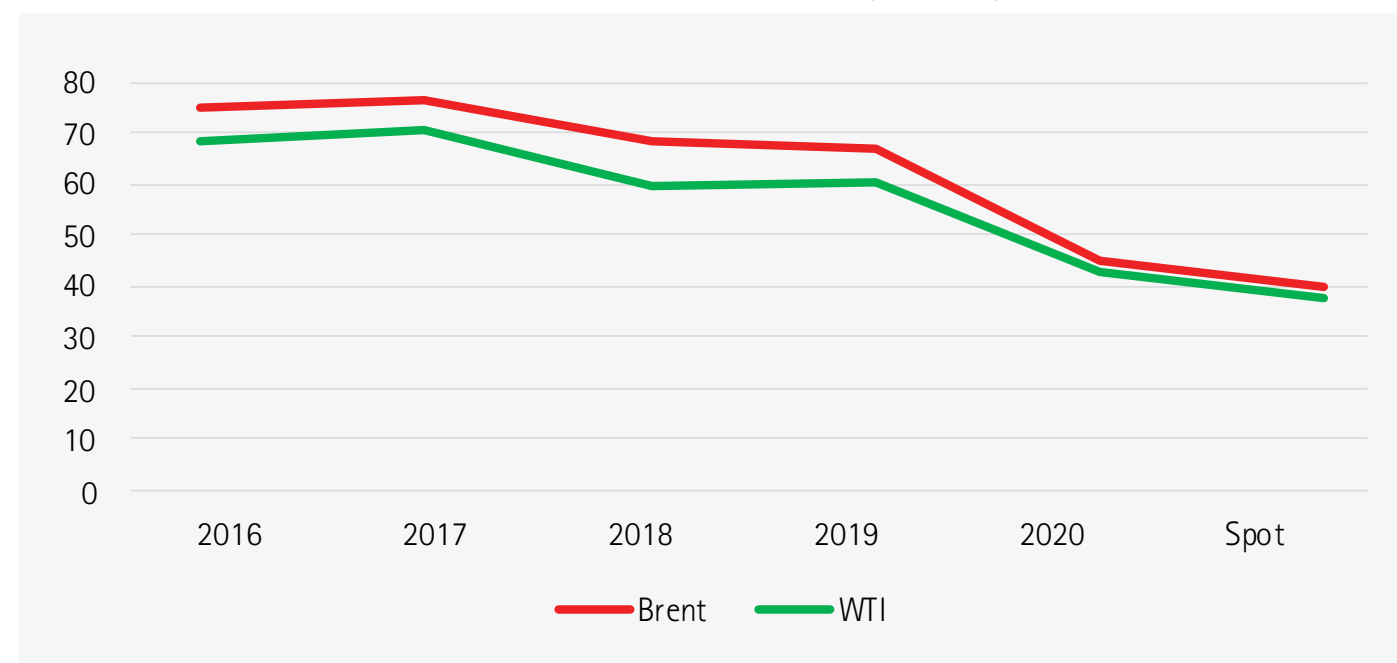
- Development of the giant **Simandou iron ore deposit in Guinea in Africa** is expected to provide 110mt a year of high-grade iron ore. Simandou's backers believe it could be in production as early as 2026 via a 60mt a year first stage.
- A potential threat to the iron ore industry in the Pilbara is a worst-case scenario in the trade war with China, where China imposes restrictions.
- However, the buoyancy of the iron sector is clear:
 - **FMG** has reported **record exports of 178.2mt** in the 2019/20 financial year. FMG is continuing to assess its \$1.5b Iron Bridge magnetite project about 110 kilometres (km) south east of Port Hedland. The project has a 67% concentrate, which would give Fortescue significant potential to increase prices by upgrading its current basket of iron ore products.
 - **Rio Tinto boosted its Pilbara iron ore shipments** during the June quarter by 19% compared to the previous period. Rio Tinto's port operations also achieved a record week of shipping in early June.
- **BHP shipped 77mt of iron ore in the three months to June 30**, beating its previous best of 72mt in the same period of 2019. The strong performance helped BHP meet its full year output target by shipping 283mt in the year. BHP has now developed more than three quarters of the South Flank iron ore project in the Pilbara, with the largest iron ore processing facility ever built in Western Australia.
- **Mineral Resources quarterly shipments increased by 53%** to 4.4 million wet metric tonnes in the June quarter, compared to the March period.
- The **first small profit of \$14.5m from the Chinese-owned Sino Iron magnetite project** in the Pilbara has been achieved after six years in production.
- **Rio Tinto** has signed a pact to jointly develop **blending of iron ore in Dalian port in China** to widen offerings for customers across Asia.
- **Alinta Energy** will spend \$95m on expanding its Newman Power Station to meet growing industry demand in the Pilbara.





Oil

OIL PRICES: 2016 to June 2020 (US\$/bbl.)



SOURCE: WORLD BANK AND OIL PRICE NOW

Fall in prices continues, medium term prices may increase if COVID-19 impact is reduced, long term decrease in oil demand possible.

- Unless the threat posed by COVID-19 is mitigated, or an effective vaccine is developed, the short-term outlook for oil remains weak. However, due to lack of investment in production in the **medium-term prices may well strengthen.**
- BP has become the first major company to warn that **global demand for crude oil may peak** within the next few years. BP's annual energy outlook shows oil consumption is unlikely to ever return to levels seen before the COVID-19, with oil demand falling over the next 30 years as the clean energy transition takes hold through the global economy.

Renewables

- **International** development of **renewables** is continuing at a rapid pace. Renewable energy has **surged to capture a record share of global**

electricity generation. For example, renewables accounted for 44% of net electricity generation in the European Union in the second quarter of 2020, up sharply from 37.2% in the same period a year earlier, according to Reuters.

- **Locally, Woodside Petroleum and BHP** are among seven companies short-listed to receive support from a \$70m Federal Government funding round to fast-track the development of large-scale **renewable-based hydrogen** projects. The total funding sought by all seven on the list amounts to more than \$200m, to support a total value of projects of almost \$500m, according to ARENA
- **Australia and Germany have signed an agreement on hydrogen energy** that could result in the creation of thousands of jobs, the majority of which would likely be in WA.

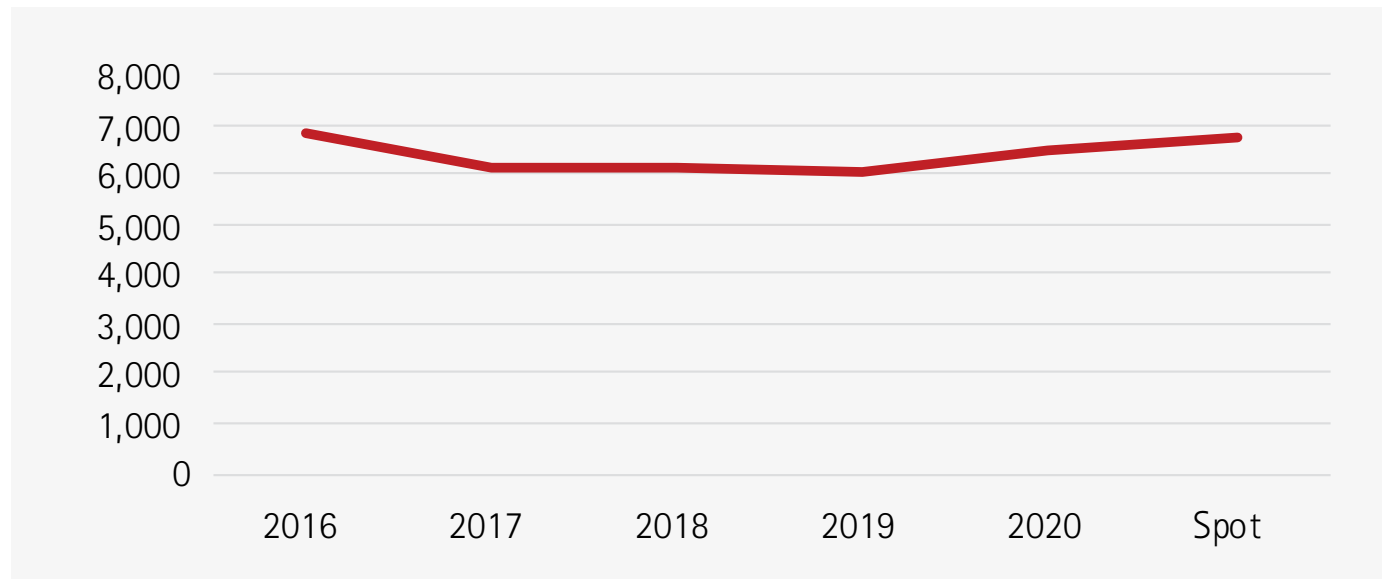
- There are **further delays in making final investment decisions for the US\$20b Browse project**, now put off until at least 2023, and the US\$11b Scarborough project, now due in the second half of 2022. However, Woodside still remains confident that global demand for LNG will continue to increase and will play a significant role as a transition fuel to greater use of renewables in China and other Asian countries.
- **Chevron has started the sale** of its one-sixth stake in Australia's largest producing oil and gas project, the North West Shelf.
- **In positive news for the sector**, BHP has taken a major step towards reducing the environmental impact of the oil dependent iron ore shipping trade after awarding a tender to supply the world's first LNG-fuelled bulk carriers.

- **Moreover, WA could play a vital role in Australia's gas-led economic recovery**, with the Federal Government looking at the State's Perth Basin as one of six key gas resource sites around Australia. A three-pronged plan has been proposed to unlock State deals on gas, prioritising gas pipelines and infrastructure to reduce the cost of transport, and securing deals to make sure Australians are not paying more for gas than overseas markets to which gas is exported.
- A proposal by **Fortescue Metals Group to build a new gas-fired power station in the Pilbara** has been recommended for environmental approval, subject to conditions supporting the miner's commitment to reach net zero carbon emissions by 2040. The Pilbara Energy Generation Power Station will be located at FMG's Solomon iron ore hub, 60km north of Tom Price.



Copper

COPPER PRICE: 2016 to September 2020 (US\$/mt)



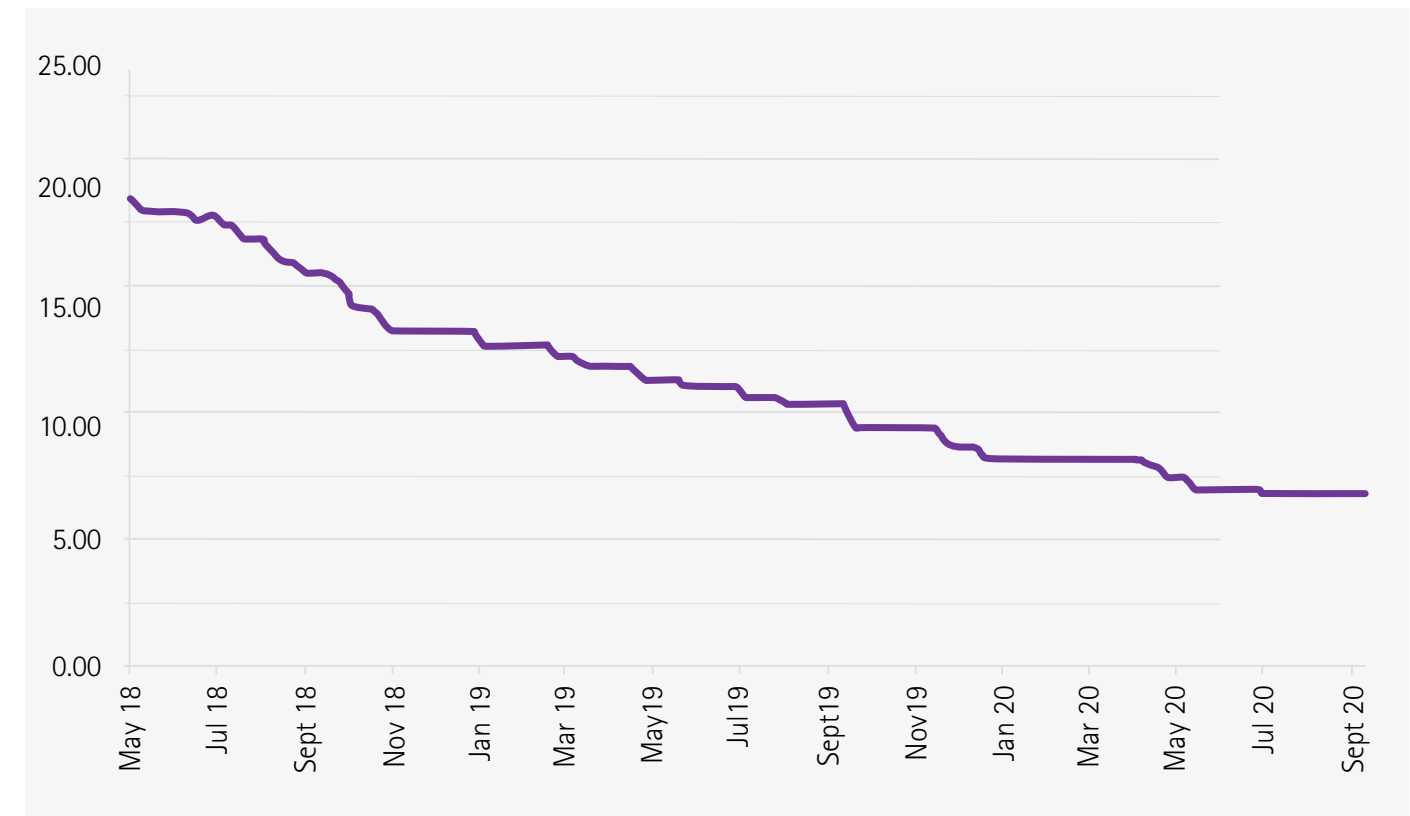
SOURCE: WORLD BANK

Prices recovering and likely to rise further, large scale investments possible.

- **Demand for copper has increased sharply** over the last two quarters, leading to significant price increases. This is due to a combination of falling supplies and increased demand, mainly from China, with exchange inventories plunging to their lowest levels in more than a decade. Citigroup analysts advised clients that a price of US\$8,000/mt is plausible if global stockpiles drop to near the levels seen in 2011.
- **New developments in the Pilbara include:**
 - Rio Tinto has lodged an environmental approval request with the Australian Government for the Winu copper project in the Pilbara, a key step in its plan to be in production at the site by 2023. Rio has also signed a joint venture (JV) agreement with Sipa Resources for the exploration company's Paterson North copper-gold project.
 - St George Mining is exploring for nickel-copper depth extensions at its Mt Alexander project near Onslow. Encouraging geology points to the potential for another nickel belt, parallel to the prolific Cathedrals Belt, according to St George.
 - Newcrest Mining is set to spend at least \$6m on exploration at the Wilki copper-gold project as part of a partnership with Antipa Minerals.
 - Fortescue Metals Group's commitment to a Paterson Province copper-gold joint venture with Carawine Resources has been strengthened, with a drilling campaign in the Eider tenement, located 35km south of Newcrest Mining's Telfer gold mine.



Lithium

LITHIUM CARBONATE PRICES: May 2018 to September 2020 (Lithium carbonate, 99.5% Li₂CO₃ min, battery grade, spot price China, Japan & Korea, \$/kg (midpoint))

SOURCE: LONDON METAL EXCHANGE (LME)

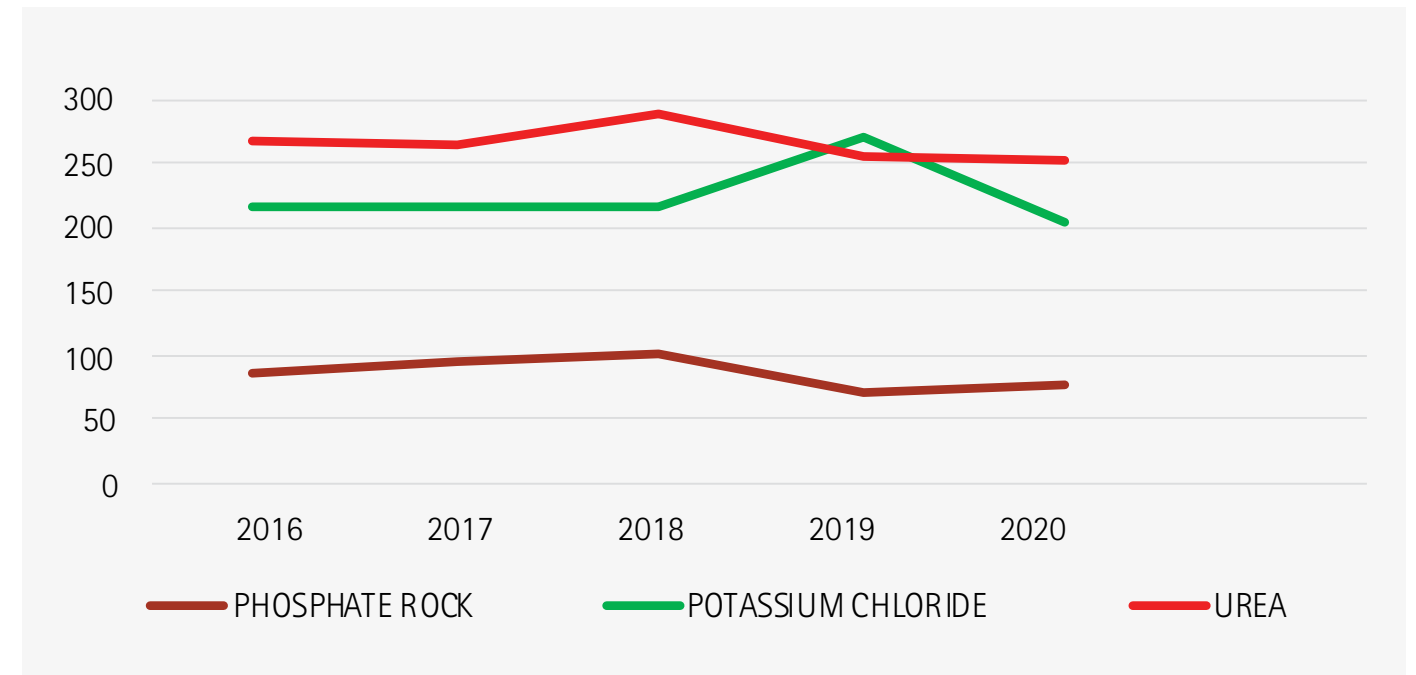
Short term prices are soft, long term increase in demand & prices still anticipated, increased investment medium term.

- **Lithium prices remained soft** in the June quarter, due to the impact of the COVID-19, **but price falls are flattening out.** Sales of electric vehicles in China decreased by 54% at the height of the pandemic and lithium extraction companies have continued with their cautious approach in the short term.
- However, the prospects for lithium **prices to increase are intact**, as Electric Vehicle (EV) sales are expected to rise quite sharply in line with green economy plans, such as those of the European Union. Governments will play a key role in driving demand for electric vehicles.
- By 2022, according to analysts from Citi, the **price of lithium carbonate**, the compound used in EV batteries, **could soar by as much as 42%**, to \$7,200 per ton, despite the fact that even with subsidies, EVs are expensive. Moreover, a new report by Roskill predicts that lithium-ion battery demand is expected to increase more than ten-fold by 2029: "The pipeline capacity of battery gigafactories is reported by Roskill to exceed 2,000 Gigawatt hours (GWh) in 2029, at over 145 facilities globally".



Fertiliser and Salt

FERTILISER PRICES: 2016 to September 2020 (US\$/mt)



SOURCE: WORLD BANK

Urea prices stabilising, large-scale investments are taking place in the short to medium-term.

Investment and production developments in Australia and the Pilbara include:

- ASX-listed Lithium Australia is finalising an agreement to produce 1,200t of lithium ferro phosphate cathode powders, initially in China, to supply battery manufacturers in the Chinese EV market.
- Altura Mining has secured a supplier contract and multi-year offtake agreement with China's Hunan Yongshan Lithium, which is a global lithium operation.
- Australia has signed an agreement with India to supply critical minerals needed for the new energy economy. It focuses on avenues to increase trade, investment and research and development between the two countries. Lithium exports to India are expected to be worth \$3b in 2024/2025.

Manganese

- Consumption of manganese in batteries is expected to grow rapidly over the next decade, as EV market penetration ramps up and will have significant impacts on the manganese metal supply chain.
- Element 25 has committed to the purchase of long-lead-time plant and equipment items for its proposed **Butcherbird manganese project in the east Pilbara**. The company has set itself a rapid project development schedule; with first manganese concentrate production expected in the first quarter of calendar 2021.



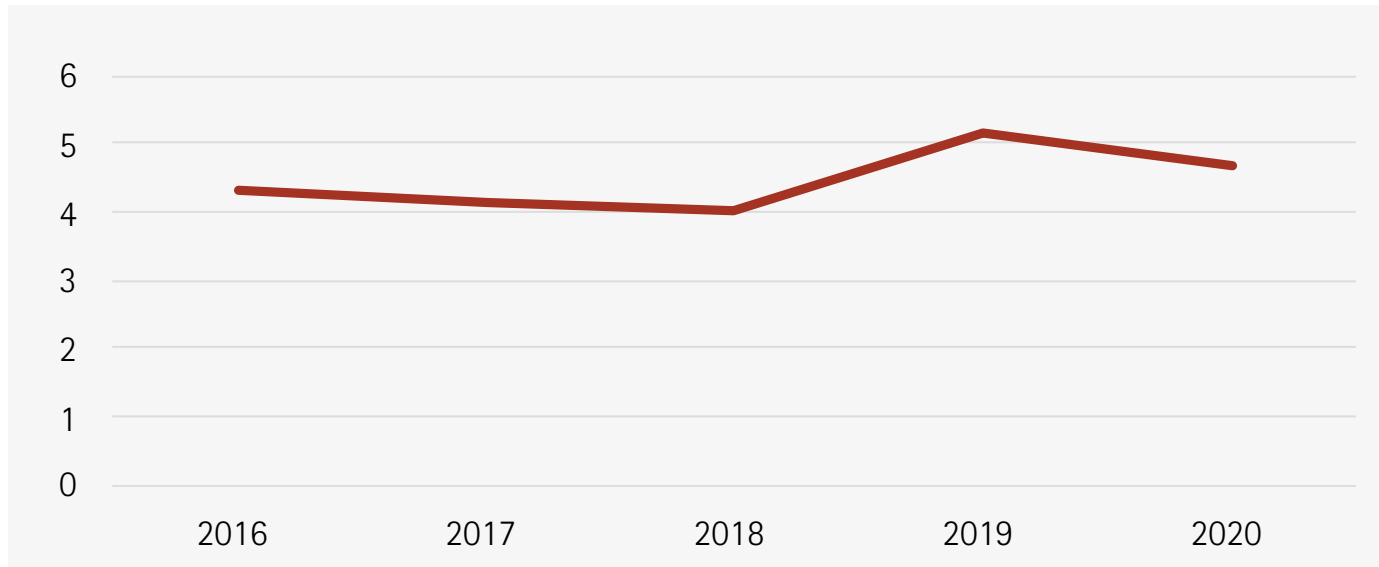
- **Investments** in the fertiliser and salt industries in the **Pilbara are significant** and **employment** in the sector is set to increase dramatically, with a strong contribution to the diversification of the regional economy.
- **BCI Minerals** has been granted major project status by the Federal Government for its Mardie salt and potash project near Karratha. The project investment is \$779m over the next three years. The development will create about 450 jobs during construction and 200 jobs over its operating life.
- **Kalium Lakes** has built non-process infrastructure for the Beyondie sulphate of potash (SOP) project on schedule and on budget. First production at the site is anticipated early in the third quarter of 2021.

- The state government has awarded lead agency status to the **Eramurra Solar Salt project**, south west of Karratha, one of three planned salt projects in northern WA collectively worth \$1.4b. The 2.4mt per annum project would create up to 200 jobs during construction and a full-time operational workforce of about 80.
- The **Mackay project** in East Pilbara could be a globally significant supplier of sulphate of potash at low cost. The project investment is of the order of US\$415m.
- The state government has given significant project status to **Perdaman Group's \$4.6b urea plant** on the Burrup Peninsula. The project on completion should create about 200 operational jobs.



Beef

BEEF PRICE: 2016 to June 2020 (US\$/kg)



Prices fluctuating at reasonable levels, with recent increase.

- **Beef prices** on the global market continued to decline from a previous high level. The Australian and Pilbara beef industries have been negatively impacted by the COVID-19 pandemic, and the threat to the beef industry from Chinese trade actions is growing. Australian abattoirs with exports to China have been asked to review their export verification and reporting procedures, after the country banned imports from a fifth major meat processor.
- **The sale of two very large cattle** stations is set to mark the biggest Pilbara land deal in five years. The Goyder family's Bonney Downs and Corunna Downs properties, which comprise about 588,000ha near Nullagine, about 300km southeast of Port Hedland, are expected to fetch about \$35m.
- Longer term the value of the Pilbara beef industry is still expected to continue to increase, due to increased demand from Asia.

Legislation

- **The Australian mining sector could see the creation of more than 32,000 jobs within five years** if the Government commits to reducing red tape and corporate taxes and making foreign investment conditions more amenable, according to the Minerals Council of Australia. A sample of 106 mining projects with feasibility studies were researched.
- In this regard, the Australian and Western Australian Governments have **agreed to streamline environment approvals** to cut delays for new projects. Western Australia has approximately \$100b worth of development proposals that could benefit from the agreement.
- **The oil and gas industry** is seeking to widen the Federal Government's tax incentive program for minerals explorers. Oil and gas explorers are currently not included in the two-year-old incentive scheme, which enables eligible companies to pass on tax losses to investors as credits. The scheme has been allocated \$100m over four years.
- **The Western Australian Government's \$5.5b recovery plan** will support minerals exploration to increase mining activity across the state. Amendments will be made to the state government's mining regulations to reduce assessment timeframes for exploration applications to speed up projects.
- The Federal Government has released the **10-year major review of the Environment Protection and Biodiversity Conservation Act**, with the report finding Indigenous Australians have not been listened to enough when it comes to protecting the environment. It recommended the suite of national-level laws that protect Indigenous cultural heritage in Australia needs a comprehensive review with cultural heritage protections needing to more effectively work with the development assessment and approval processes of the Act.



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