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SP Angel

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Today's Oil and Gas Update - Global Gigafactory capacity boosted by Tesla China deal

SP Angel - Morning View - Thursday 18 10 18

Global Gigafactory capacity boosted by Tesla China deal

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Base Resources (LON:BSE) - September quarterly activities

Highland Gold (LON:HGM) - Robust quarterly operating results

Shanta Gold (LON:SHG) - Quarterly update

121 Mining Investment conference with SP Angel in London

- 20-21 November - See: https://www.weare121.com/121mininginvestment-london/

Exploration activity to grow as cashed-up majors hunt for next generation copper projects

- It is increasing apparent that there will be a significant shortage of economic copper projects going forward.
- There are a fair number of somewhat marginal new projects that could scrape into the market at a copper price of over $6,500/t but given the capital required and the technical risks involved we suspect copper prices will need to be significantly higher to attract the required capital.
- The cost of scrap recycling is also likely to rise as China refuses to process much of the world's dirtier scrap.
- We were looking to Ecuador for the next generation of copper projects but given the government's reluctance to issue permits for drilling with no new permits issued in the last 12 months according to one source, not much new will come from this region for some time.
- The major copper miners were able to sit back and simply expand their giant copper mines through the last boom, mining lower grades in ever deeper pits through the efficient utilisation of ever larger trucks with falling oil prices and largely depreciated mine infrastructure.
- Some of these giant mines are now looking to go underground with Codelco planning $4bn of underground block-cave at development at Chuquicamata to give the mine another 40 years of life
- This, easy, option is running out for the majors and is driving a new urgency to find next-generation copper projects, hence BHP's recent £45m investment into SolGold* at a 32% premium on top of their $35m investment in a 6.1% stake. The new investment brings BHP's stake in SolGold to 11.18% vs and serves to reduce the influence of Newcrest to around 13.58% down from 14.54% previously.

*SP Angel act as UK broker to SolGold

Bulk metals could expect support from China's anti-pollution drive

- Prices of industrial commodities, such as metals and bulks, are expected to receive support from cost inflation, supply disruption and a shift in energy mix over the medium-term as China changes policies to clean up environment, according to Citigroup Inc.
- Prices of aluminium, LNG and coke expected to rise in the next 6-12 months, while thermal coal, petroleum product cracks, steel, copper, zinc and lead may also find more support, bank says in note.
- Instead of the 'one-size-fits-all' production cut as implemented last year, production cuts could be more targeted but across a broader set of regions and mandated by local governments. China's second winter supply curtailments under way and "likely to create similar level of output disruptions as the past winter's".
- Targeted environmental overhauls should drive a slow-burn cost inflation process across different industries partly via scrubber installation, use of cleaner energy and logistics.

Vanadium - ferro-vanadium prices edge higher in Europe

- Ferro-vanadium prices continue to rise with the European price edging higher to $113-118/kgV according to Fastmarkets (Metal Bulletin) yesterday.
- Vanadium prices are going against the current trend for softer industrial metals and a softening of base metal premiums.
- Antimony prices pulled back 2.1% to $8,150-8,500/t in Rotterdam while ferro-manganese prices fell 0.7% to RMB7,300-7,400/t.

Tesla secures Shanghai site for $2bn Gigafactory

- Tesla has finalised an agreement with the Shanghai government for an 860,000 sqm location to build its first overseas Gigafactory, marking a key step towards domestic manufacture of Tesla EVs in China. The agreement will double the size of its global manufacturing with mass production helping to lower the price-tag of Tesla cars sold across the world's largest auto market.
- Vice president of worldwide sales added "securing this site in Shanghai, Tesla's first Gigafactory outside of the United States, its an important milestone for what will be our next advanced, sustainably developed manufacturing site".
- The automotive giant signed a deal with Shanghai authorities in July to open a plant in the Chinese city with an annual capacity of 500,000 cars.
- The factory aims to help tap China's rapidly growing market for new-energy vehicles (NEV), a category comprising electric battery cars and plug-in electric hybrid vehicles, even as China's wider auto market cools. Sales of NEVs were up 54.8% in September while climbing 81.1% for the first time in months of this year to 721,000 vehicles, according to figures from the nation's top automobile industry association.
- Beijing has taken action to reduce subsidies across the sector on concerns of overcapacity and 'blind development', with many inside the industry expecting expansions to impact a number of smaller electric car start-ups.
- Tesla has announced it would raise capital from Asian debt markets to fund the construction, which is expected to cost around $2bn.
- The project forms part of a significant global arms race to develop lithium-ion capacity by 2021. Benchmark Minerals note total capacity in the pipeline will add 372GWh, with China dominating the global markets with 56% share, followed by Europe at 19% and the US 14%.

Dow Jones Industrials

-0.36%

at

25,707

Nikkei 225

-0.80%

at

22,658

HK Hang Seng

-0.68%

at

25,288

Shanghai Composite

-2.88%

at

2,488

FTSE 350 Mining

+0.29%

at

17,138

AIM Basic Resources

+0.34%

at

2,169

Economics

Currencies

US$1.1493/eur vs 1.1563/eur yesterday Yen 112.52/$ vs 112.24/$ SAr 14.260/$ vs 14.198/$ $1.309/gbp vs $1.317/gbp 0.712/aud vs 0.714/aud CNY 6.940/$ vs 6.922/$

Commodity News

Precious metals:

Gold US$1,221/oz vs US$1,224/oz yesterday

Gold ETFs 67.9moz vs US$67.7moz yesterday

Platinum US$831/oz vs US$840/oz yesterday

Palladium US$1,073/oz vs US$1,081/oz yesterday

Silver US$14.49/oz vs US$14.64/oz yesterday

Base metals:

Copper US$ 6,159/t vs US$6,191/t yesterday

Aluminium US$ 2,013/t vs US$2,035/t yesterday

Nickel US$ 12,240/t vs US$12,540/t yesterday

Zinc US$ 2,635/t vs US$2,613/t yesterday

Lead US$ 2,028/t vs US$2,051/t yesterday

Tin US$ 19,130/t vs US$19,200/t yesterday

Energy:

Oil US$79.9/bbl vs US$81.5/bbl yesterday - Egypt Planning New Oil and Gas Contracts

- Egypt is working on a new model for future oil and natural gas production contracts in undeveloped areas to spur exploration and help become self-sufficient in energy, oil ministry and company officials said.
- The nation is seeking to transform itself into a gas re-exporting hub and the planned contract overhaul is part of a broader strategy to liberalize its energy industry.
- Under the new system, companies would bear the cost of exploration and production in return for a share of the output, and they would be free to sell to whomever they wish. The production shares would differ from concession to concession, depending on the investment.

Oil sinks 3%

- Oil prices fell on Wednesday, with U.S. futures dipping below $70/barrel for the first time in a month, after U.S. stockpiles rose by 6.5m barrels, almost triple what was forecast, while exports dropped.
- Brent crude was down $1.31, or 1.6%, at $80.10/barrel by 2:28 p.m. ET, after gaining $1.15 over the previous three sessions. The global benchmark is trading nearly $7 below a four-year high of $86.74 reached on Oct. 3.

- U.S. light crude oil ended Wednesday's session down $2.17, or 3%, at $69.75.

Natural Gas US$3.300/mmbtu vs US$3.261/mmbtu yesterday - Polish state-run energy company signs 20-year deal for US natural gas

- PGNiG has struck a 20-year deal to buy liquified natural gas from the US, as the country pushes to reduce its dependence on imports of Russian gas.
- PGNiG said on Wednesday that the contracts signed with subsidiaries of US group Venture Global LNG would provide it with 2m t of liquefied natural gas per year, or 2.7bn cubic meters of natural gas after re-gasification.
- The deliveries are due to start from 2022.

Uranium US$27.65/lb vs US$27.65/lb yesterday

Bulk:

Iron ore 62% Fe spot (cfr Tianjin) US$72.7/t vs US$69.9/t

- Chinese iron ore futures surged to their highest in seven months amid firming demand for the steelmaking raw material, as stockpiles across Chinese ports fell to their lowest levels this year. Iron ore inventory at China's ports reached 142.5Mt last week, the smallest since December 2017, and down 12% from the record 161.9Mt reached in June, according to SteelHome consultancy data.
- The most-active January iron ore on the Dalian Commodity Exchange hit a session high of 532 yuan/tonne, its strongest since March. The rally also tracked sharp gains in fellow steel ingredient coking coal, which rose to a 13-month peak.
- China's more flexible approach to industrial production curbs in winter by allowing regions to set their own restrictions is expected to spur demand for raw materials, according to local traders. "There's good demand and this may last until the end of October".
- The surge erased the commodity's loss for the year, and takes gains since it bottomed in July to 19%. Low-grade material also rose on Wednesday, while high-quality ore held near $100.
- Iron ore's advance will benefit top miners including BHP Billiton Ltd., Rio Tinto Group and Brazil's Vale SA, which reported record quarterly production of more than 100 million tons earlier this week. Policy makers in China, the world's top steel producer, are curbing some industrial activity to cut pollution, especially over the colder winter period, as well as reducing overcapacity. Earlier this month, Barclays Plc forecast that prices would rally into the $70s this quarter.
- The rise in iron ore is being driven by high steel margins, which are in turn a result of China's capacity cuts and environmental push, according to Vivek Dhar, an analyst at Commonwealth Bank of Australia, who expects high-grade ore to hit $100. Last year's restrictions caused a "big run up until Christmas," Dhar said by phone, adding curbs this year will have a "magnified" impact.
- The government-led crackdown on pollution in China is reshaping the economy and the commodity markets, Citigroup Inc. said in a note received on Thursday that explored the impact of the campaign. Prices of industrial raw materials including bulks, "are expected to receive support from cost inflation, supply disruptions and a shift in the energy mix over the medium-term," it said.
- While the differentials between high- and low-grade ore widened during 2017-18 as steel mills targeted more efficient ore, the installation of scrubbers is likely to narrow the differential as high-impurity materials can be processed. Also improved blending practices should provide mills with more options.

Chinese steel rebar 25mm US$690.9/t vs US$690.7/t

Thermal coal (1st year forward cif ARA) US$96.5/t vs US$96.0/t -

Coking coal futures Dalian Exchange US$191.1/t vs US$191.6/t - China coking coal hits 13-month high

- Chinese coking coal futures climbed to their highest in more than a year on Wednesday
- China has ditched a blanket curtailment of production by industrial plants this winter, including steel mills, instead allowing provinces to set their own output restrictions based on emission levels. It's the second straight

winter that China is implementing the curbs as part of its battle against pollution.
- The most-traded January coking coal contract on the Dalian Commodity Exchange jumped as much as 2.7% to 1,402 yuan ($203) a tonne, the highest since September 2017. It was up 1.8 percent at 1,389 yuan by 0253 GMT.

Other:

Cobalt LME 3m US$61,750/t vs US$61,750/t

China NdPr Rare Earth Oxide US$46,111/t vs US$46,231/t

China Lithium carbonate 99% US$9,799/t vs US$9,824/t

Tungsten APT European US$275-290/mtu vs US$275-290/mtu

Battery Stuff:

Ballard Power Systems to fuel clean energy ports across California

- Ballard Power Systems will provide fuel cell modules to power two port terminal yard trucks as part of a project being managed by GTI with $5.7m partial funding by the California Air Resources Board (CARB) for the Zero Emissions for California Ports Project.
- The ZECAP Project will validate the commercial viability of zero-emission fuel cell electric hybrid yard trucks operating in a demanding, real-world cargo-handling application. It forms part of a state-wide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy and improving public health and the environment.
- Funding will help develop, validate and deploy two Capacity TJ9000 fuel cell electric hybrid yard trucks at the Port of Los Angeles in California. The yard trucks will be operated by TraPac, the container terminal and stevedore operator at the port. Ballard will provide 85 kilowatt (kW) FCveloCity®-HD fuel cell modules for primary propulsion of each yard truck with BAE Systems providing the electric drive system and will have responsibility for systems integration using its HDS200 HybriDrive® Propulsion System.
- CCO Rob Campbell notes "heavy duty vehicles have a disproportionate impact in terms of air pollution, with buses and trucks accounting for less than 10% of vehicles on the road but about one-quarter of all carbon dioxide emissions plus a significant amount of pollutants in California. Hydrogen and fuel cells deliver an attractive value proposition, including zero emissions, extended vehicle range, long duty cycles, rapid refuelling and zero compromise on payload".
- In September 2018 California passed bill SB 100, which establishes a deadline for 100% zero-carbon electricity in the state. The bill will accelerate the state's renewable portfolio standard to 60% by 2030, and will require that the next 40% comes from zero-carbon sources of electricity by 2045. The San Pedro Bay Ports Clean Air Action Plan, encompassing the ports of Los Angeles and Long Beach, goes even further by mandating that all cargo handling equipment be zero-emission by 2030.

3D-printed lithium battery

- Researchers have developed a new method to 3D print lithium-ion batteries in virtually any shape
- The researchers increased the ionic conductivity of PLA by infusing it with an electrolyte solution. In addition, they boosted the battery's electrical conductivity by incorporating graphene or multi-walled carbon nanotubes into the anode or cathode, respectively.
- To demonstrate the battery's potential, the team 3D printed an LED bangle bracelet with an integrated lithium-ion battery. The bangle battery could power a green LED for about 60s.

- According to the researchers, the capacity of the first-generation 3D-printed battery is about two orders of magnitude lower than that of commercial batteries, but that they have several ideas to improve this

Tesla Secures Land in China for First Car Plant Outside US

- Tesla Inc. agreed to pay 973m yuan to use land for a factory in China
- The electric-vehicle maker won a bid to use more than 210 acres for its 'Gigafactory 3' in Shanghai, Tesla said in an emailed statement. The land use agreement is for 50 years, according to a Shanghai government website.
- The carmaker said it will use "many lessons learned" from ramping up production of its Model 3 to accelerate construction of the battery factory, where it plans to build the sedan along with the new compact sport-utility vehicle dubbed Model Y.
- Tesla will also manufacture batteries at the plant.

US Senate bill could give Tesla, GM electric car tax credit boost

- Tesla Inc and General Motors Co, which have lobbied Congress to lift a cap on electric vehicles eligible for a $7,500 tax credit, could get their way for up to four years under a new proposal from a Republican senator.
- On Thursday, Senator Dean Heller proposed legislation that would lift the current cap on electric vehicles eligible for tax credits.
- Under current law, once a manufacturer hits 200,000 EVs sold, the tax credit phases out starting in the following quarter - Tesla said in July it had reached this threshold and GM announced it expects to do the same by the end of the year
- Heller's bill lifts the individual manufacturer cap but would phase out the credit for the entire industry in 2022.

Company News

Base Resources (LON:BSE) 13.75p, Mkt Cap £160.4m - September quarterly activities

- Base Resources' implementation of the Kwale Phase 2 project has resulted in a 35% rise in the mined ore during the quarter to 4.79mt leading to record quarterly production of rutile (25,125t) and zircon (9,683t) as well as 118,2265t of ilmenite.
- Based on planned mining rates of 18.3mt, production guidance for 2019 operations at Kwale remains unchanged at 88-93,000t of rutile, 420-450,000t of ilmenite and 32-37,000t of zircon.
- Unit operating costs per tonne produced at US$103/t are consistent with the preceding, June, quarter but around 14% higher than the US$90/t achieved during the September 2017 quarter "due to higher operating costs associated with a 60% increase in mining volume following implementation of the Kwale Phase 2 mine optimisation project".
- The company has extended drilling into the South Dune ahead of the mining moving into the area and has also completed 3,835m of extensional drilling into the North East Sector adjacent to the Kwale Central Dune area, although "Completion of the remaining drilling program (4,200 metres) in this area remains suspended pending resolution of community access issues."
- At the recently acquired Toliara mineral sands project in south-west Madagascar, pre-feasibility studies are expected to be completed, on schedule, during Q1 2019 ahead of more detailed definitive feasibility work and a development decision during Q4 2019. The company reports expenditure of US$2.2m at Toliara during the quarter.
- Work completed included the processing of a 100 tonnes bulk sample in order to assist with flowsheet design as well as the completion of some 3,500m of infill and resource drilling, land acquisition and the development of social and environmental management plans.
- The company reports that the "global titanium dioxide pigment industry remained firm through the quarter with most western pigment producers continuing to operate at, or near, capacity" and goes on to indicate that after "more than two years of continued quarterly growth, some major pigment producers indicated that prices were

stabilising as consumption eased after the seasonally strong June quarter. Pigment producers in China continue to target maximum output levels but remain hampered by periodic environmental inspection shutdowns".

- Ilmenite demand from the pigment industry in China remained steady during the quarter "with growth being constrained by the impact of periodic environmental inspections on both domestic ilmenite suppliers and pigment producers, as well as the general economic uncertainties relating to trade tensions with the USA."
- Base Resources also notes that zircon demand during the quarter was sufficiently strong as to exceed its capacity to supply, "however, the economic uncertainties currently being experienced in China are leading to more modest price increases for Q4 2018. While zircon demand in China is softening on economic concerns, overall global demand remains very strong."
- At the corporate level, the company reports that it retired the Kwale debt facility of US4215m 20 months ahead of schedule leaving net debt approximately US$9.4m lower at US$23.8m.

Conclusion: Base Resources reports firm demand from the western world's pigment industry and that, following more than two years of quarterly growth that prices appear to be stabilising. The company also points out that demand for its zircon product is currently exceeding its production capacity. Work at Toliara is progressing towards a formal development decision at the end of 2019.

Highland Gold (LON:HGM) 146p, Mkt Cap £474m - Robust quarterly operating results

- Q3 production totalled 74.8koz (Q3/17: 71.8koz) with total output in the first nine months of the year little changed at 203.7koz (9M17: 20.6koz).
- The Company reiterated 2018 production guidance at 265-275koz.
- MNV delivered 31.9koz (Q3/17: 27.4koz) taking YTD output to 80.0koz (9M/17: 78.1koz) as weaker processing rates led by a replacement of a failed trunnion over Q4/17-Q1/18 has been more than compensated with higher processed grades.
- Exploration works continued at lower horizons of the main MNV license, flanks of the mined ore bodies as well as adjacent greenfield licenses with a new JORC reserve on the property due in the coming months.
- Belaya Gora production totalled 12.7koz (Q3/17: 12.3koz) with YTD output at 32.5koz (9M17: 32.3koz) as lower processing rates were offset by an increase in recovery rates.
- Novo production came in at 30.2koz (Q3/17: 32.1koz) taking YTD output to 91.2koz (9M17: 93.1koz) with a slight decline attributed to lower grades and gold recoveries.
- Works progressed on the expansion of mining and processing capacity to 1.3mtpa ore.
- At Baley Ore Cluster, design works continued for a 840ktpa heap leach operations to reprocess the Baley ZiF-1 tailings with the contractor having completed engineering studies over the quarter.
- Wardell Armstrong has been mandated to draft a Scoping Study on the brownfield Sredny Golgotay deposit where latest GKZ reserve estimate stood at 1.3mt at 7.8g/t; the study is expected in January 2019.
- At Chukotka Cluster, preparatory works for the start of construction and mining at Kekura progressed during the quarter including specification of future orders for construction materials and engineering and processing equipment.

Conclusion: Robust production numbers with output in the last six months catching up and more than compensating for a weaker Q1 results.

Shanta Gold (LON:SHG) 4.7p, Mkt Cap £36m - Quarterly update

- Q3 production amounted to 19.7koz (Q3/17: 18.2koz) at AISC of $769/oz (Q3/17: $769/oz).
- Quarterly gold sales amounted to 19.7koz at an average realised price of $1,218/oz (Q3/17: $1,279/oz).
- EBITDA came in at $12.8m.
- Pre-leach tank that is due to add a couple of percentage points to gold recoveries has been installed in September.
- Open pit mining operations have been suspended with stockpiles built up for blending over the coming six

months,

- $1.6m spent in development capex at Ilunga with a further $7.1m planned over the next three quarters prior to reaching development ore in mid-2019.
- Ilunga ESIA has been secured in early October with 109m of development completed as of quarter end.
- $5.3m in total capex spent during the quarter which mostly covered underground development an equipment.
- Working capital increased by $2.0m led by an rise in ROM stockpiles (+$2.5m) and a continuing build up in VAT receivables (+$2.0m); the VAT receivable stood at $19.9m as of Q3/18.
- As a result the Company has reduced net debt by $3m with the balance closing at $35.1m as of quarter end.
- The exploration team has successfully replaced quarterly depleted gold through a conversion of 21.1koz from resources into the mine plan.
- Drilling continued at BC West targeting conversion from Inferred to Indicated resources category while regional reconnaissance work continued with surface and trenching works yielding prospective results.
- Annual production guidance revised downwards to 80koz at AISC of $750/oz down from previous 82-88koz at AISC of $680-730/oz on the back of weaker than expected mined grades.

Conclusion: Production numbers came in below our expectations on the back of weaker processed grades and lower gold recoveries. We expect the latter to improve in the coming quarter reflecting the benefit of a commissioned pre-leach tank, while weaker than anticipated grades saw the management revising annual production guidance. Ilunga development works are progressing well with first production expected in mid-2019, in line with previous guidance.