

Copper North Mining Corp – Copper News – July 4, 2017

We are sourcing additional information as to supply and demand that may interest our investors. The information is taken from newsletter and other industry databases. Investors should not rely on the information provided in this Copper News; rather, they should seek advice from investment advisors.

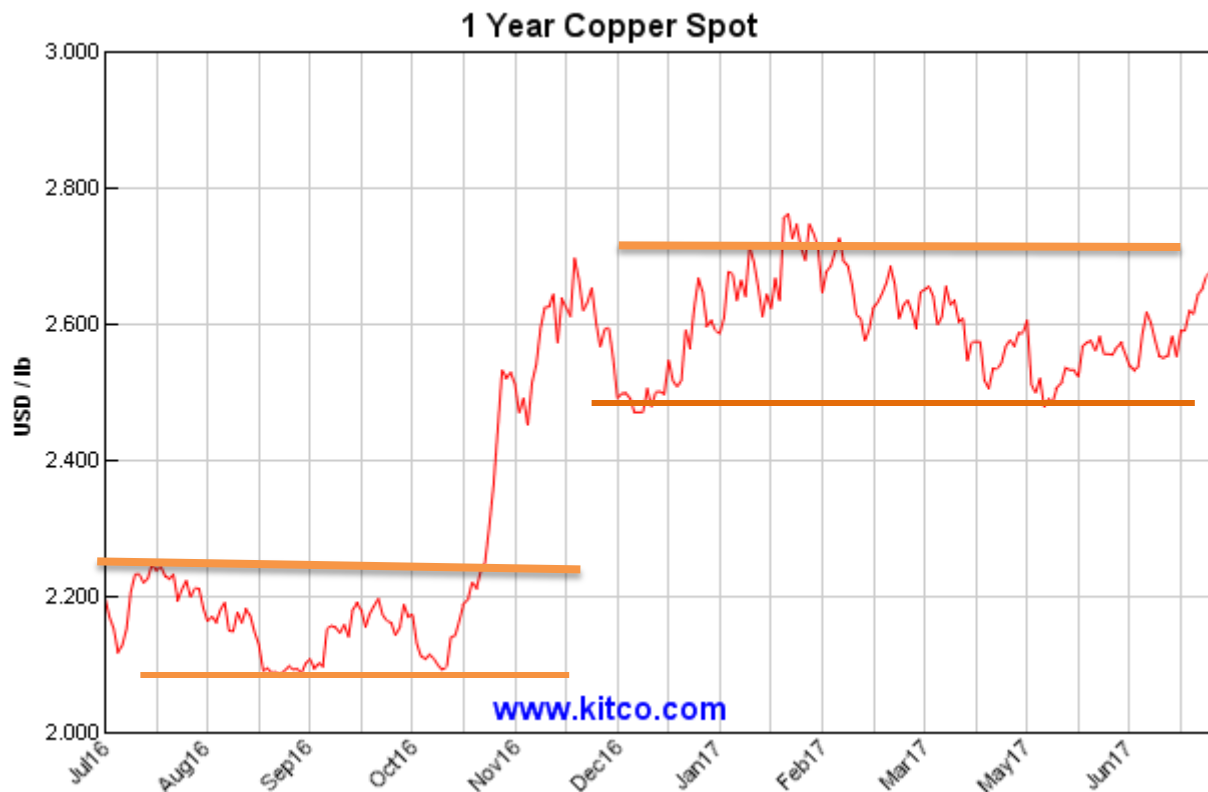
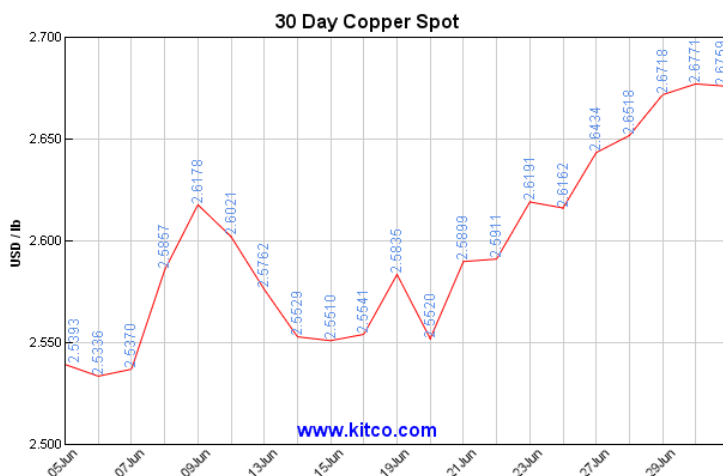
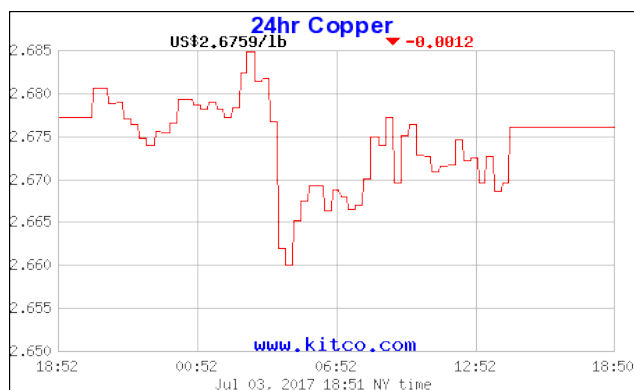
Overview of Old and New Copper Market (1989 -2016)



New Copper Market – Copper Breaks Out Q4, 2016.

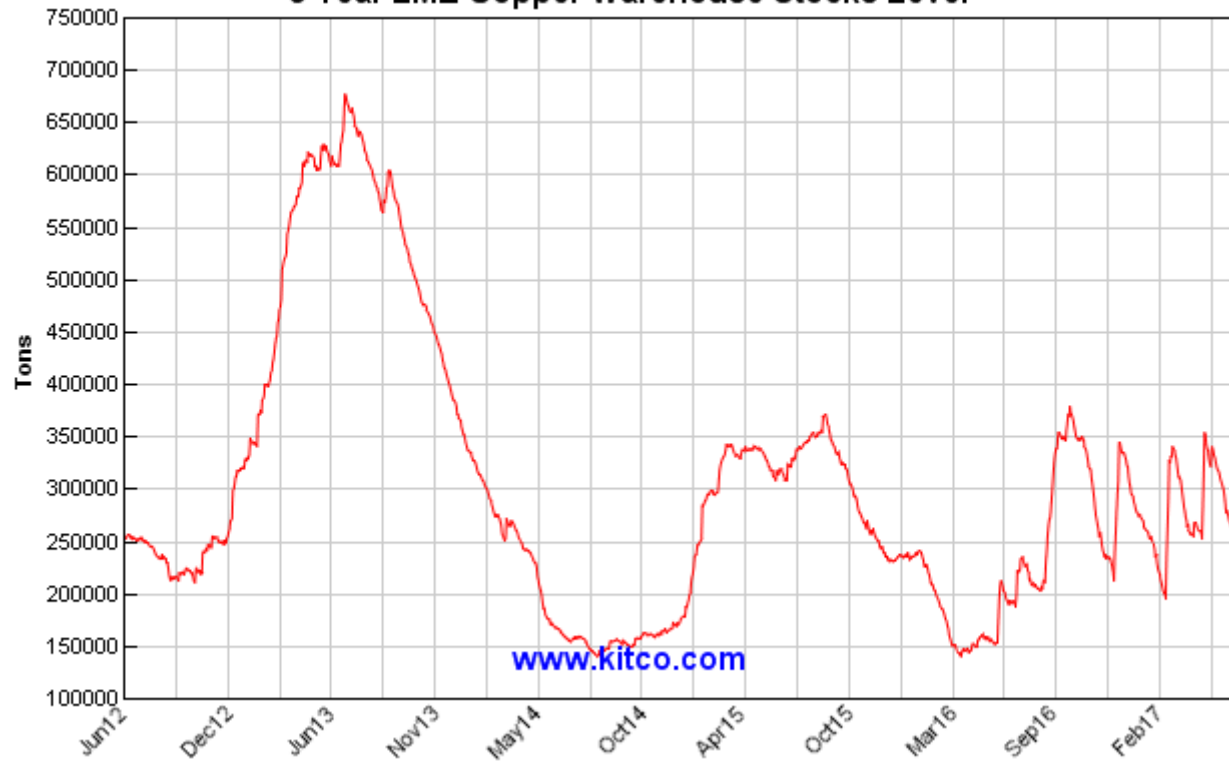


Copper breaks 5 year decline trend, recently breaking US\$2.30 and run up to US\$2.76
 December Feb 13, 2017; now trading in the US\$2.50/lb to US\$2.70/lb range.

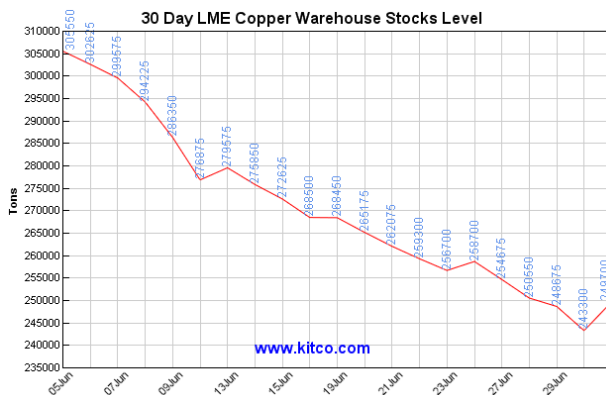


LME copper inventories decline from 380,000 tonnes August 2015 peak, to March 2016 low of approximately 145,000 tonnes, a five-year low . Recently, LME inventories ran up to 380,000t in late Sept, it then fell to 159,000 tonnes to 212,000 tonnes Dec 11, 2012, subsequently rebounding and now moving lower to 199,000 tonnes as of March 5th, 2017 which is followed by a large rebound with large increases into Singapore, South Korea and Taiwan warehouses. Recently, the spiked increase of LME inventory topped at 354,650 tonnes, and is again in decline to 249,700 tonnes.

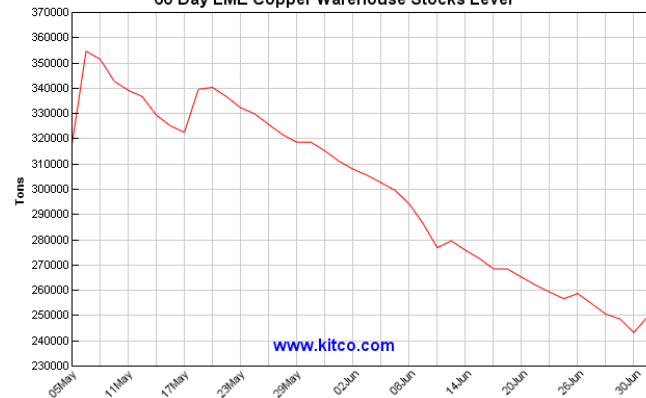
5 Year LME Copper Warehouse Stocks Level



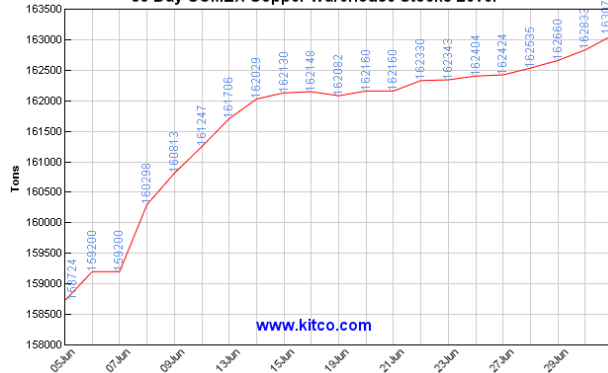
30 Day LME Copper Warehouse Stocks Level



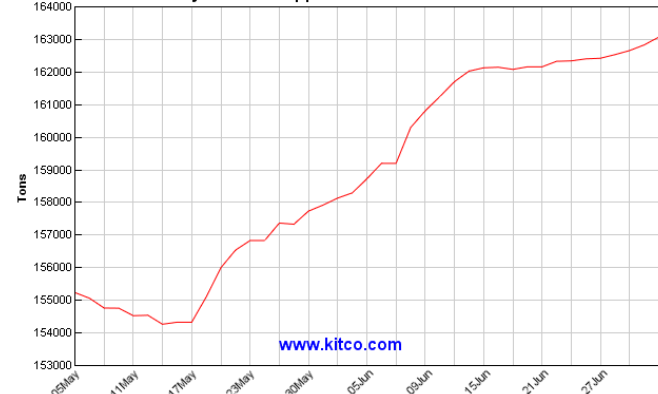
60 Day LME Copper Warehouse Stocks Level



30 Day COMEX Copper Warehouse Stocks Level



60 Day COMEX Copper Warehouse Stocks Level



Copper Inventory Adjustments (Note: table does not include private stocks of smelters, governments, etc.)

LME runup (159,000 t) to 380,000 tonnes in late August 2016, inventories declined to lower to low of 199,100 t followed by large rise in LME and decline to down to 259,725 tonnes in April until the run up of 94,925 tonnes to 354,650 LME tonnes in ealy May. The past week LME declined to 332,300 tonnes; Shanghai continued to increase slightly and NYMEX after flattening, has moved upwards to 163,072 tonnes.

Week Of	LME (65%)	Shanghai (23%)	NYMEX (11.5%)
June 26, 2017	-9000 tonnes	-8,996 tonnes	+445 tonnes
June 19, 2017	-11,750		+200
June 12, 2017	-8,425	+ 9,652	1,211
June 5, 2017	-28,675	-17,977	+2,284
May 29, 2017	-13,100	+9654	+872
May 22, 2017	-1,800	+2,227	+1,210
May 15, 2017	+7,275	+1,365	+849
May 8, 2017	-25,275	-20,238	-678
May 1, 2017	+94,925	-14,130	-168
Apr 24, 2017	-8,675	-10,830	+ 404
Apr 17, 2017	+11,200	-31,076	+5,655
Apr 10, 2017	-13,350	-43,543	+2,224
Apr 3, 2017	-25,850	+7,434	+2,489
Mar 27, 2017	-21,350	-5,208	+3227
Mar 20, 2017	-25,075	- 12,964	+3,192
Mar 13, 2017	+ 12,100	-1.454	+2,964

Production cut-backs, decline of mine head grades, reduced treatment and refining charges, and falling inventories, all suggest copper supply shortfalls in the making? Volatility largely reflects exchange rate fluctuation, hedge positions, and country supply risk.

HM Visagie Daily Notes

July 4, 2017

- Comex Cu strengthened Friday, as traders were covering short positions to close out June and crude continued to rise. The Comex most active month settled at \$2.711/lb--up from \$2.6955/lb on Thursday and up by 10¢ in the last week.
- Chile's Cu production fell by 1.7% to 469,196t in May17 compared with May16. Cu output in 5M17 was 2.11 M t, down 9.4% compared with May16. In 2016, production was 5.64 M t Cu, down by 3.6%.
- In May17 Chile's Mo concentrate production rose by 24.7% from May16 to 5,733 t. Production in 5M17 was 26,291 t or 10.8% higher 5M16. In 2016 Mo output was 56,596 t--a 7.8% increase over 2015.
- BofA Merrill Lynch revised its base metal forecast for Cu prices by 4.2% to \$5.434 /t (2017), and by 8.8% to \$5,510/t (2018); for Ni prices by 22% to \$9,494/t (2017), and by 22.2% to \$10,500/t (2018).
- US bank Morgan Stanley lowered its Cu outlook price for this year by 1% and left it unchanged for the next 2 years from its prior outlook as the effects of supply disruptions fade and demand weakens. Cu is forecast to average \$5,749/t (\$2.61/lb) this year. Cu is forecast to average \$5,484/t in 2018 and \$5,897/t in 2019, unchanged from the prior forecast.
- The ICSG predicted in Mar17 that the global Cu market would be in a supply deficit of 147,000 t in 2017 and a supply deficit of 169,000 t in 2018, while Morgan Stanley anticipates a deficit of 163,000 t in 2017 and a swing into a surplus of 210,000 t for 2018.

June 23, 2017

- TCs for imported Cu concentrates dropped marginally in China's market this past week. As of June 23, SMM TC offers for spot Cu were \$80-86/t, but little transaction was heard. It was hard to find offers at \$85/t, which stabilized at around \$83/t, as some traders lowered offers.

June 21, 2017

- For Q117, the ICSG estimated the global refined Cu market was in a 165,000 t. Global refined Cu production was 5.77 M t and global refined Cu usage was 5.60 M t. The surplus was mainly because of a decline in apparent demand from China. ICSG estimates a surplus of Chinese bonded stocks of around 310,000 t Cu. Global mine production is estimated to have declined by around 3.5%, with concentrate output dropping by around 3% and solvent extraction and electrowinning production falling by 6%.
- Committee of Statistics under Ministry of National Economy of the Republic of Kazakhstan announced Tuesday the country's Cu cathode, Zn and steel output jumped during 5M17. Cu cathode, refined Zn and steel output rose 5.0%, 3.4% and 10.0%, respectively, yoy.

June 20, 2017

- According to BMI's Cu outlook report, global Cu mine production, supported by markets and low operating costs, is forecast to increase by an average yearly rate of 4.1% between 2017 and 2021, as many major projects come on line. BMI said, "In terms of volume, we expect global Cu output to climb from 20-M t in 2017 to 23.7-M t by 2021."

June 19, 2017

- NBS data showed China's Cu cathode output increased 6.8% on a yearly basis to 727,000 t in May17. China's Cu cathode output was 3.586 M t in 5M17, a rise of 7.2% yoy.
- CFTC data (week ended Jun1317) show net bullish bets for Cu by hedge funds and other speculative investors climbed to 62,837 contracts. In Au, they cut their net long position by 19,621 contracts to 155,037 contracts as prices fell from 7-month highs while the market readied for the U.S. Federal Reserve to raise interest rates.

June 16, 2017 – China Production Continues Growth In Copper

- According to the NBS, China's production of Cu rose 6.8 % to 727,000 t in May17, while the output of iron ore increased 3.8 % from a year ago. Base metals and iron ore output in the world's top metals producer showed an annual increase, except for Pb and Zn. May17 output was 727,000 t Cu, +6.8%, 2,830,000 t Al +4.2%, 406,000 t Zn -0.7%, 481,000 t Zn -9.9%, 107,480,000 t Iron Ore +3.8%.

June 15, 2017 - Copper Demand and Electric Cars and Trucks

- The number of electric vehicles on roads worldwide rose to a record high of 2 M last year, according to the IEA. That represented a doubling from the 2015 tally, but electric cars still only accounted for 0.2% of the global count.

June 13, 2017

- China's new energy vehicle (NEV) output increased in May, industry association Caam data show. NEV output rose by 38.2% yoy to 52,000 units in May17. Production of pure electric vehicles reached 44,000 units--up by 52.5% from a year earlier. But production of plug-in hybrids fell to 8,000 units, down by 9.3% yoy. NEV sales reached 46,000 units in May--up by 28.4% yoy. Sales of pure electric vehicles rose by 49% yoy to 39,000 units. Sales of plug-in hybrids were 7,000 units--down by 28.3% yoy. Production in 5M17 rose by 11.7% yoy to 147,000 units and sales were up by 7.8% at 136,000 units.
- According to a report commissioned by the International Copper Association, the number of electric vehicles hitting roads is set to fuel a nine-fold increase in Cu demand from the sector over the coming decade. Electric or hybrid cars

and buses are expected to reach 27 M by 2027--up from 3 M this year. The research predicts this increase will raise Cu demand for electric cars and buses from 185,000 t in 2017 to 1.74 M t in 2027.

- The IEA expects there is a "good chance" that electric vehicles in use globally could reach carmaker estimates of between 9 M and 20 M by 2020 and between 40 M and 70 M by 2025. While cars using internal combustion engines require up to 23 kg of Cu each, the ICA report found that a hybrid electric vehicle uses nearly double that amount at 40 kg of Cu, and a plug-in hybrid electric vehicle uses 60 kg. Depending on the size of battery, an electric bus can use between 224 and 369 kg of Cu. On top of this, each electric vehicle charger will add 0.7 kg of Cu and if they are fast chargers, they can add up to 8 kg of Cu each.

June 12, 2017

- According to the CFTC, bets on a higher Cu price outnumbered those on a lower price by 51,688, up from 49,736 the previous week. Cu prices have gained as more supply disruptions at major mines have raised concerns about the amount of metal available.
- Peruvian miners plan to begin an indefinite nation-wide strike on July 19 to protest "anti-labor" government proposals, the National Federation of Miners, Metallurgists and Steelworkers secretary general Ricardo Juarez said on Friday. The federation, which groups 110 unions representing 40,000 workers at various mines in Peru, had approved the strike in May, but did not set a date.

June 8, 2017

- Chile's state-owned mining company **Codelco** has suspended and restricted operations at its northern division sites because of a severe weather front in the Antofagasta region. Codelco has implemented preventative measures to ensure the safety of workers and contractors after 15 mm of rain fell in a brief spell in an area that only normally gets 2 mm in a single year. Mining operations at Chuquicamata, Radomiro Tomic and Ministro Hales have been suspended but plants remain operational at all 3 sites.
- Peru adopted new and more flexible air quality standards on Wednesday after the old standards were criticized by mining companies and President Pedro Pablo Kuczynski. A decree published by the environment ministry raised the maximum amount of sulfur dioxide, a byproduct of smelting copper and other base metals, that can be emitted to 250 micrograms per cubic meter per 24 hours, from the 20 micrograms per cubic meter previously.
- Leading candidate for Mongolia's Presidency has called for greater state control of projects like the giant Oyu Tolgoi Cu/Au mine run by Rio Tinto, making mining and foreign investment central issues in the election campaign. The landlocked North Asian country of 3 M people goes to the polls on Jun2617, just a month after securing a \$5.5 B IMF-led bailout to lift the economy out of a balance of payments crisis.
- According to the preliminary data from the GAC, China's imports of unwrought Cu and Cu semis were 390,000 t during May17, with 5M17 imports totaling 1,840,000 t--down 20.3% YoY. China's exports of unwrought Al and Al semis were 460,000 t in May17, with 5M17 exports of 1,950,000 t--up 3% YoY.
- China's Cu concentrate and ore imports in May17 fell to their lowest in 18 months as mining outages crimped supplies to the world's top metals consumer and producer, but unwrought metal arrivals jumped from a month earlier, data showed on Thursday. Imports of Cu concentrate and ore, raw materials used to make metal, totaled 1.15 M t--their lowest since Oct15, the GAC showed.

June 7, 2017

- **Rio Tinto (RIO.L)** revised down its guidance for Cu concentrate production in Apr17, as a result of output disruption and lower ore grades at some of its major mines. The new Cu target is 500,000-550,000 t--down from the 525,000-665,000 t announced in Feb17. RIO produced 523,000 t in 2016.
- In 2017, Zambia's Cu output will climb by about 4% to 800,000 t, said Nathan Chishimba, President of the Chamber of Mines. That would be higher than the 770,600 t mined in 2016, and exceed a previous record of about 790,000 t in 2013. The forecast is less optimistic than a projection by Christopher Yaluma, the Mining Minister, who sees output jumping to 850,000 t Cu.

June 6, 2017- Key Copper Outcomes

- Antofagasta Plc (ANTO.L) CEO Ivan Arriagada expects Cu market to stay firm development as tight liquidity and debt restructuring in China will not change fundamentals of Cu. Cu price will rise successively in response to tight supply in 2018, Arriagada says.
- SMM statistics showed Cu output at the world's ten biggest Cu mining firms tumbled 14.9% year-on-year in Q1, affected by strike at Cerro Verde, Escondida and Grasberg mines, etc. BHP Billiton and Rio Tinto registered big falls. Only First Quantum and Antofagasta PLC posted growth.

June 6, 2017

- The DRC Chamber of Commerce has complained to the government about a worsening business climate in the country's Cu-mining region, including what it says are unjustified duties on power imports. In a letter to the finance minister dated Jun0117, the chamber said DRC's customs agency has levied more than \$300 M in penalties on mining companies for failing to declare electricity imports or making false customs declarations. The chamber said this was despite the fact the public power utility, rather than the companies themselves, imported the electricity before selling it on.

June 2, 2017

- This week, traded TCs for imported Cu concentrates remained at upward territory, up to \$83/t, in response to ample supply. Traders gave offers at \$80-86/t as of Jun0217, with some offers up to as high as \$85/t.

June 1, 2017

- Chile's Cu production fell by 1.8% in Apr17 compared with Apr16. Cu production, including concentrate, fines contained in cathode and blister anodes totaled 429,000 t--down from 437,000 t in Apr16 and 13.5% higher than Mar17. Cu output in 4M17 of 1.63 M t was down by 11.3% on the year, after a 6-week strike at the Escondida mine that ended in late March. Production amounted to 5.64 M t in 2016-- down by 3.6% from 2015.
- Cancelled Cu warrants on LME have risen to a 3-year high this week, with cancellations concentrated in Asian locations. Cancelled tonnage rose for 7 consecutive reporting days to 161,700 t on May3017--up from 102,875 t on May1817.
- China's refined Cu production rose by 5.2% in 4M17, to 2.85 M t from 2.71 M t a year ago. Cu output in Apr17 was up by 4.3% YOY to 724,000 t. Over the same period refined imports dropped by 33% to 300,000 t. China produced 8.2 M t of refined Cu last year, while global production totaled 23 M t.

May 31, 2017

- ICSG estimated that for the first 2M17, global Cu mine production is estimated to have declined by around 2%, with concentrate production declining by around 1% and solvent extraction-electrowinning (SX-EW) declining by 5%.

May 30, 2017

- The EU slapped sanctions on 9 more DRC officials on Monday over "obstruction of the electoral process and related human rights violations" in the central African state, where President Joseph Kabila has overstayed his mandate. The nine include Congo's current and former interior ministers, the government spokesman and officers of the security forces. They join another seven people already on the EU blacklist which subjects them to asset freezes and travel bans. Worsening militia violence in recent months has raised fears of a backslide toward the civil wars of the turn of the century that killed M's of people in DRC. *Comment: DRC attractiveness for mining investment is decreasing as political tensions rise.*
- Chinese Cu producer **Wanbao Mining** agrees with **Havilah Resources (HAV.ASX)** to conduct a PFS on the Kalkaroo Cu-Au project in South Australia. The study will determine whether Wanbao enters a financing and development agreement with HAV. This follows due diligence conducted by Wanbao and a recent upgrade of Kalkaroo's Resource to 232 M t containing 1.1 M t (.49%) Cu and 3.3 M ozs (.37 g/t) Au.

May 29, 2017

- Hedge funds and other speculative investors increased their bullish positions on Cu prices in the week ended Tuesday, according to CFTC data. Bullish bets outnumbered bearish bets by 50,191 contracts, the highest since early May.
- Peru's economic growth will slow this year to about 2.7% following the startup of big Cu mines, delays to infrastructure projects from the Odebrecht corruption scandal, and damage from floods and heavy rains, the IMF says. "Downside risks stem from additional delays in executing investment projects, larger than expected flood-related damages, a faster rise in international interest rates, and global spillovers from a rise in protectionism or a slowdown in China," it says. Next year, the IMF sees the economy recovering to 3.8%, which would be slightly below the 3.9% growth in 2016.
- DRC on Friday revised its forecast for 2017 GDP growth to 3.5% from 4.9% previously, a government spokesman said. The government outlined a budget of \$7.9 B this year--up 10.6% on 2016, and said it expected the Congolese franc to stand at 1,689 to the U.S. dollar at year end compared to 1,430 currently.
- Codelco produced 390,000 t of Cu from its wholly owned mines in Q117--down 11% from a year ago. It reported a pre-tax profit for Q117 of \$534 M, with cash costs running at \$1.34/lb Cu.

May 26, 2017

- **Freeport McMoRan Inc (FCX.T)** said, Thursday, that mining and milling rates at its Grasberg mine in Papua, Indonesia have been affected by an extended strike, and a "large number" of approximately 4,000 absentee workers were deemed to have resigned. Escalating labor tension is a further disruption for FCX, entangled in a lengthy dispute with Indonesia over rights to the giant mine, which has cost both sides hundreds of M's of dollars.
- In Mar17, Cu output in Peru expanded 1.2% YoY to 189,390 t, and totaled 563,989 t in Q117. 8 regions in Peru registered YoY growth in Cu output, with Apurímac Region recording the most at 174.6% YoY.

May 23, 2017

- The ICSG for 2M17 said preliminary ICSG data, Cu production and usage data points to a production surplus of around 150,000 t. Global usage of the metal is estimated to have declined by around 3% during Jan-Feb '17. The decline in usage was mainly due to 9.5% decline in apparent usage by China. The usage by world countries excluding China grew at 2.5%.

May 19, 2017

- A survey by Chile's state Cu commission Cochilco found that Cu prices are expected to average \$2.6/lb in 2017, up from a previous outlook of \$2.22. The improved forecast for the metal is due to expectations of higher demand from China and a deficit in supply following strikes at Chile's Escondida mine and Peru's Cerro Verde, as well as issues affecting exports of the Grasberg mine in Indonesia.
- The development of Uganda's largest Cu deposit is behind schedule, prompting the government to consider cancelling its mining license, says Irene Muloni, Uganda's minerals minister. A \$175 M redevelopment program being implemented by a Chinese consortium led by Shanghai Baosteel Group at Kilembe Cu project is not moving fast enough, hampering plans to resume output at the mine. It's the latest project to suffer from concerns about global Cu prices, which remain around 40 % below their peak levels 6 years ago, despite recent improvements.

May 17, 2017

- China's Cu demand grew by 22 % in Mar17 on a monthly basis, Jiangxi Cu said. According to its report, China's Cu consumption amounted to 822,500 t in Mar17--up from 676,500 t on a monthly basis. The Company attributed the growth to support from real estate and air conditioner markets.
- **Glencore Plc (GLEN.L)** CFO Ivan Glasenberg said the rise of electric cars will significantly boost demand for minerals including Cu and lithium in the coming decades. Electric vehicles require more Cu wiring than standard internal combustion engines. For example, the battery in an electric car contains about 38 kgs of Cu, 11 kgs of Co and 11 kgs of Ni. Those materials, along with manganese, stand to benefit from more demand for electric cars.
- Mining companies, including Cu producers, will continue to shape their investment decisions and production plans based on government regulations, which are increasingly becoming very focused on sustainability and communities well-being, a study released Tuesday shows. According to the report, commissioned by the International Cu Association (ICA), the increasing demand for efficient building systems and electrical equipment, electric vehicles and renewables generation, could add more than 4 M t of annual Cu use by 2030.

May 15, 2017

- China's spot TCs of imported Cu concentrate continued rising in the week ending May1417, with quotes between \$77-83/t on May1217. Smelters' pricing power strengthened and are trying to push spot TCs up to \$ 85/t. Many smelters remain under maintenance in May.
- Peru's energy and mines minister announced the country will start 3 large Cu mine projects in 2018 which are worth \$7.27 B, El Peruano reported. The 3 mines are Quellaveco, Justa and Michiquillay. *Comment: We expect production from these mines is still years off.*
- Chile's Cu production fell 14.6 % in 1Q following a strike at the world's biggest Cu mine, according to data from state Cu commission Cochilco. In Q117, Chile turned out 1.19M t Cu--down from 1.39 M t in Q116. Production was hurt by a strike that lasted more than a month at BHP Billiton's Escondida Cu mine where workers walked-out over salaries and other worker benefits. Chile is the world's top Cu producer.

May 11, 2017

- Zambia's president Edgar Lungu has called for an out of court settlement with First Quantum Minerals (FM.T), which is being sued for \$1.4 B by a state-owned firm. The \$1.4 B claim by ZCCM-IH includes \$228 M in interest on \$2.3 B of loans that it said FM wrongly borrowed from the Kansanshi Cu Mine, as well as 20 % of the principal amount, or \$570 M. ZCCM-IH said in papers filed in the Lusaka High Court on Oct2816 that FM used the money as cheap financing for its other operations. FM said the loans were at a fair market rate.
- Zambia said in Apr17 it plans to introduce a flat tariff of US\$0.093/kWh backdated to Jan17 for mining companies, rather than individually negotiated rates that have averaged US\$0.06/kWh. Zambia is Africa's second-largest Cu producer and differences with mining companies over taxes, electricity prices, environmental concerns and labour matters often arise. *Comment: Zambia's disputes with the mining companies together with weak Cu prices has reduced investment in Zambia's mining industry.*

May 10, 2017

- **First Quantum Minerals (FM.T)** has written to Zambia's attorney-general in an effort to block criminal proceedings against the firm's directors. Citing an Apr2117 letter signed by FM's operations director, Matt Pascall, Bloomberg

News said the action may be brought against the Company by Zambia's ZCCM Investments Holdings. FM also wants the attorney general to ask ZCCM-IH to halt a case in the Lusaka High Court, where it accuses the Company of fraud and is seeking as much as \$1.4 B, said Bloomberg News

May 9, 2017

- China's Cu cathode output was 646,000 t in Apr17--up 0.62 % from Mar17 and up 0.31 % on a yearly basis, according to SMM data. Output in 4M17 totaled 2.5535 M t, with growth down to 1.65 % on a yearly basis. Custom data showed China's imports of Cu ore and concentrate were 1.36 M t in Apr17 and grew 8.3 % yoy to 5.67 M t during 4M17.
- According to the preliminary data from the GAC, China's imports of unwrought Cu and Cu semis were 300,000 t during Apr17, with YTD (4M17) imports from Jan17 to Apr17 at 1450,000 t--down 22.9 % yoy. China's exports of
- **KGHM** CEO said, a planned second phase of expansion of KGHM's Sierra Gorda Cu project in Chile, which was put on hold in Mar17, will not happen now. KGHM bought the Sierra Gorda project in Chile's Atacama Desert mining belt in 2011, its largest ever foreign acquisition, and began shipments in 2014 after cost overruns in the ramp-up.

May 8, 2017

- ICSG forecasts that global refined Cu demand will exceed production by 147,000 t in 2017 and by 169,000 t in 2018. This compares with the group's previous forecast in October of a 160,000 t production surplus in 2017 and a deficit of 100,000 t in 2018.

May 1, 2017

- Chile produced 378,261 t Cu in Mar17--down 23.1 % from Mar16, as a strike at the world's largest Cu mine bit into output, government data showed Friday. Cu production during Q117 totaled 1.208 M t--down 14.3 % from Q116. The loss of production at Escondida due to the strike has forced the government to reduce its outlook for Chilean Cu production this year. In April, the Chilean Cu Commission cut production forecast for 2017 to less than 5.6 M t Cu, down from 5.8 M t estimated in Jan17, as the conflict at the mine lopped 180,000 t off its previous forecast.
- ANZ said, base-metals supplies at the LME continue to reflect tightening markets amid ongoing supply disruptions, says ANZ. Cu inventories have fallen some 16 % the past month, with Zn down 9 %, Pb down 8% and Al down 6%.

April 28, 2017

- China's imports of refined Cu slumped by 28 % yoy in Q117. Factoring in exports, now a regular feature of the country's trade picture, the slide in net metal imports was an even more dramatic 35 %. The net draw on units from the rest of the world was 699,000 t in Q117--a decline of 368,000 t in Q116. In Q117, scrap Cu imports increased 22 % to 907,000 t and Cu concentrate imports increased 8.5 % to 4.31 M t.

April 27, 2017

- **Freeport McMoRan Inc (FCX.N)** is preparing 3 Cu concentrate export shipments from its giant Grasberg mine in Indonesia after a 15-week outage. FCX is ramping up output and Cu shipments from Grasberg, the world's second-biggest Cu mine, after obtaining an export permit on Friday that coincided with U.S. Vice President Mike Pence's state visit.
- ICSG estimated global apparent refined Cu usage is estimated to have increased by around 1.8 % in Jan17. Preliminary Jan17 data indicates that world ex-China usage growth at 1.9 % was slightly higher than growth in Chinese apparent Cu demand. Chinese apparent Cu demand (excluding changes in unreported stocks) increased by only 1.7 % because although refined Cu production increase by 10 %, net imports of refined Cu declined by 17 %.
- ICSG estimated global Cu mine production is estimated to have increased by around 4 % in Jan17 yoy, with concentrate production increasing by around 5 % and solvent extraction-electrowinning (SX-EW) declining by 2 %.
- Zambia, Africa's second-largest Cu producer, expects its production of the metal to jump about 10 % this year to 850,000 t Cu. Mines minister Christopher Yaluma said, "Improved and modernized mining through the same infrastructure" will enable output to expand. Production from First Quantum's Sentinel operation will account for much of the nation's increase, which would top a previous record of about 790,000 t in 2013.

April 26, 2017

- Production at mining firm **Southern Copper's (SCCO.N)** Cuajone and Toquepala Cu mines and the separate Ilo processing plant in Peru has resumed after a 12-day strike ended. SCCO reached an agreement with representatives of around 3,000 workers on 21 April. The mediation talks were supported by Peru's labour ministry.

April 24, 2017

- Peru's Finance Minister Alfredo Thorne says he is optimistic that **Anglo American (AAL.L)** will soon develop its Quellaveco Cu mine in the Andean nation. The project was delayed for several years amid social and environmental concerns. AAL exited from another Peru project, Michiquillay, in late 2014 due to a decline in Cu prices.
- **Freeport-McMoRan Inc (FCX.N)** warned on Friday it would punish workers for absenteeism at its Indonesian unit, a day after one of its main unions announced plans to go on a 1-month strike over employment conditions. Tensions are rising around Grasberg, the world's second-biggest copper mine, after operator FCX laid off thousands of workers there to stem losses from an ongoing dispute with the Indonesian government over mining rights.

April 19, 2017

- **Freeport McMoRan Inc (FCX.N)** has received preliminary approval to resume Cu concentrate exports from its Indonesian operation and hopes to lodge an application for an export permit this week. Indonesia halted FCX's Cu

concentrate exports in Jan17 under new rules requiring FCX to adopt a special licence, pay new taxes and royalties, divest a 51 % stake in its operations and relinquish arbitration rights. The latest deal is expected to allow FCX to export Cu concentrates for 6 months, while working to reach agreement on disputed issues.

- **Southern Copper Corporation's (SCCO.N)** labor union said they will keep on fighting for salary at the railway line through which SCCO ships ore from the Cu mine in Peru. Labor union official Efrain Centeno said about 3,000 miners took the Ilo railway line, which has been suspended from the strike beginning on Monday, and they will keep on holding the railway line unless SCCO meets their demand. A negotiation between SCCO and the labor union will take place in Lima on Thursday.

April 17, 2017

- Cochilco expects Chile's Cu production to be lower than 5.60 M t in 2017, compared to the 5.79 M t expected previously.
- According to SMM data, Cu inventories in Shanghai bonded area in the week ending Apr0717 were 654,000 t, up 184,000 t from the level seen in the week ending Dec3016.
- A spike in confrontations between Zambia's ruling party and the opposition elevates political risk as Africa's No.2 Cu producer struggles calm a deepening crisis stemming from last year's closely contested elections, says NKC African Economics. Opposition leader Hakainde Hichilema, who refuses to recognize President Edgar Lungu as winner of the disputed vote now faces a potential death penalty after he was charged with treason following his violent arrest earlier this this week. Tensions don't bode well for miners implementing multibillion \$ Cu projects, as companies seek to put behind years of poor metal prices.
- DRC expects to clinch a power import deal with South Africa's utility Eskom, as Africa's no.1 Cu producer seeks to end crippling electricity shortages. Three way talks involving DRC's state power utility, Snel the Chamber of commerce and Eskom are due to start. A deal would heal Congo's mining industry, which saw power deficit double to 950 MW last year hurting mine output. As outages worsen, miners have turned to expensive diesel-fired thermal plants, driving up costs amid low global prices. DRC Cu output dropped 5 % last year, the second annual drop in a row, ending a nearly decade-long rising streak.

April 13, 2017

- **Rio Tinto Plc (RIO.L)** said, on Wednesday, it was continuing talks on the long-term future of its stake in the Grasberg Cu mine in Indonesia and 1 of its top executives would visit the country for talks over the coming weeks. Mine operator **Freeport McMoRan's (FCX.N)** exports of Cu concentrate from Grasberg, the world's richest Cu mine, have been at a standstill since mid-January, when Indonesia introduced rules intended to improve revenues from its resources and create jobs.
- Chile, the world's biggest copper producer, faced a fresh threat of labor action in the sector on Wednesday when a union at the large Chuquibambilla mine said it had blocked access as a "warning" over planned changes to job opportunities. Mine owner Codelco said the union's action, which affected the early shift, was "illegal." It ended by 9 a.m. and the impact on production was being evaluated. *Comment: Labour unrest in Chile continues to impact the supply of Cu concentrates.*

April 11, 2017

- Workers at **Southern Copper (SCCO.N)** in Peru began an indefinite strike on Monday April 10 in efforts to secure increased profit-sharing and improved working conditions. More than 2,000 workers that belong to unions have joined industrial action that began in the early hours of the day at the Toquepala and Cuajone mines, as well as the Ilo smelter, the Sindicato Unificado de Trabajadores union said. A SCCO spokesman said operations in Peru were near normal as workers started an indefinite strike on Monday, although a union representative said 80 % of capacity was affected.

World Copper Mine Production Rises - ICSG

- Global mine production of Cu increased in 2016, supported by rising output in Peru and fewer supply disruptions, preliminary data. Output rose by over 5 % to 20.2 M t last year--up from 19.1 M t in 2015, the report said. There were fewer disruptions caused by strikes, accidents or adverse weather conditions than in previous years.
 - Peruvian concentrate production increased by 38 % to 2.35 M t, adding 650,000t to 2016 global output. Projects such as US miner Freeport McMoRan's Cerro Verde mine and Las Bambas, owned by China's MMG, accounted for the country's expanded output.
 - But mine supply from Chile, fell by 3.8 % to 5.54 M t due to lower grades and lack of investment in the country's biggest mines have slowed output expansion since 2010. Production from DRC fell by 4.5 % last year, following the suspension of output by global trading and mining company Glencore.
- Global refined Cu production increased by 2.5 % to 23.4 M t, the ICSG said. Primary output was 3 % higher at 19.5 M t, although secondary production from scrap fell by 2 % to 3.8 M t.
- China was the main contributor to increased refined production, with output up by 6 % to 8.4 M t, followed by the US and Japan, where production was 7 % and 5 % higher, respectively.
- The global refined Cu balance recorded a 50,000 t deficit in 2016, mainly because of a 2.5 % increase in Chinese apparent demand, the report said.
- The strike at Escondida, the world's largest Cu mine, will end after workers decided to invoke a legal provision that allows them to extend their old contract for 18 months, after leaving a union meeting on Thursday. The workers said they will present their decision to the government on Friday and will return to work Saturday at Escondida, operated by BHP Billiton (BHP.ASX).

Mar 22, 2017

Jan 4, 2017 – China Continued Major Investment in Electric Rail

- China plans to spend 800 B yuan (\$115.09 B) on building railways this year, the same budget as last year, to grow its network to 150,000 km. China plans to add 2,100 km of track this year, mostly in its central and western regions, and electrify 4,000 km of railways, Xinhua reported, citing a statement released by national operator China Railway Corporation after an annual work conference.

China's Five-Year Plan Could Boost Chinese Cu Demand: ICA

- China's current Five-Year Plan, running from 2016 to 2020, could boost Chinese Cu demand by up to 15 %, the International Cu Association (ICA) said Monday. Aggregated Cu demand is expected to total 29.5 M t by the end of the current plan, its 13th, up from 25.6 M t at the end of its 12th Five Year Plan in 2015.
- With China expected to see at least 6.5 % annual growth in GDP and double the personal income of its citizens by the end of 2020, "the government will have to invest great resources in areas such as transportation, building infrastructure and energy," Richard Xu, the ICA's Asian regional director, said.
- The ICA predicts Cu demand to grow by 82% in the areas of power generation and 40 % in the power grid, totaling an extra 1.78 M t. The share of renewable power installations is set to grow to 40 % from 13 %, important for Cu as they use 4-12 times more Cu than traditional power generation, the ICA said.
- Cu demand is also set to benefit from a rise in the use of electric vehicles, expected to grow more than eightfold during the period. Electric cars use 3-4 times more Cu than gasoline and diesel engines.

Comment: Continued growth of Cu in China and increased Cu demand from India and other SE Asian economies will keep Cu demand growth strong.

Thomson Reuters Production of top 10 countries and producers (4 companies gained and 6 lost)!

TOP-10 COPPER PRODUCING COUNTRIES

Rank		Country	Production (000 t)	
2014	2015		2014	2015
1	1	Chile	5,750	5,764
2	2	China	1,694	1,659
4	3	Peru	1,339	1,654
3	4	United States	1,391	1,408
5	5	Australia	969	960
6	6	DR Congo	915	918
7	7	Russia	740	741
9	8	Zambia	693	705
8	9	Canada	694	690
13	10	Indonesia	379	587

Source: GFMS, Thomson Reuters

TOP-10 COPPER MINE PRODUCERS*

Rank		Company	Production (000 t)	
2014	2015		2014	2015
1	1	Codelco	1,839	1,893
2	2	Freeport-McMoRan	1,470	1,547
3	3	Glencore	1,296	1,259
4	4	BHP Billiton	1,203	1,178
5	5	Southern Copper	665	745
7	6	KGHM Polska Miedz	506	562
6	7	Rio Tinto PLC	636	555
8	8	Anglo American	504	472
9	9	Antofagasta	455	400
10	10	First Quantum Minerals	380	366

*Attributable basis – totals may differ from company reports
Source: GFMS, Thomson Reuters

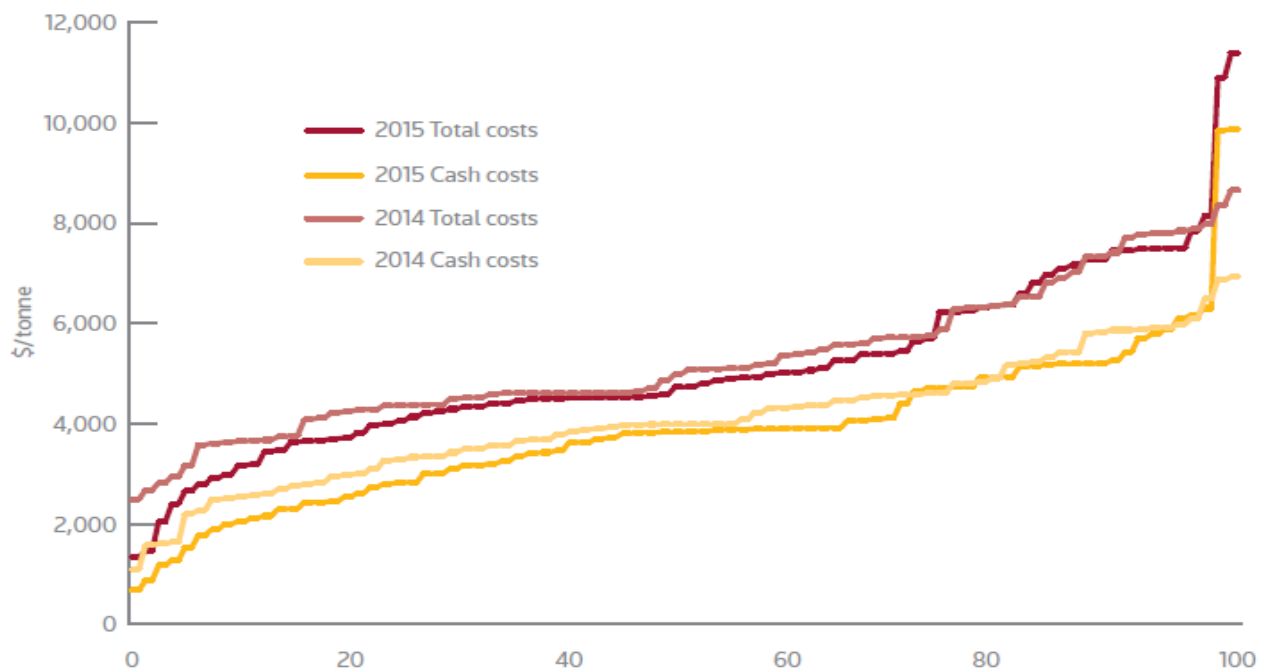
30



The following table illustrates development projects. The capex estimates and timelines are an indicator of future mine development necessary to meet future global mine supply. Most of the projects are large capex and long timelines for production.

Thompson Reuters notes that the 2015 copper incentive price required to meet new mine supply demand is US\$3.14 per pound of copper. The new PEA for Carmacks Project will soon provide new information on C1 cash and Total costs of producing copper.

COST CURVES 2014 AND 2015



Source: GFMS, Thomson Reuters

Note Carmacks capex to be revised downwards

MAJOR COPPER PROJECTS

Project	Company	Location	Process	Type	Capacity	Capex*	Start Date
Ajax	KGHM	Canada	Conc	New Project	50	795	2019
Agua Rica	Yamana	Argentina	conc	New Project	150	2,122	2021?
Aktogay	KAZ Minerals	Kazakhstan	SX-EW/Conc	New Project	104	2,300	Q4 2015/17
Andina	Codelco	Chile	Conc	Expansion	na	1,400	2022
Aynak	MCC	Afghanistan	Conc	New Project	200	3,000	Post-2020
Bozshakol	KAZ Minerals	Kazakhstan	Conc	New Project	75	2,150	Q1 2016
Bytrinsky	Norilsk Nickel	Russia	Conc	New Project	66	1,700	End-2017
Carrapateena	Oz Minerals	Australia	Concs	New Project	40	555	2019
Carmacks	Copper North	Canada	SX-EW	New Project	14	225	Q2 2018
Chuquicamata UG	Codelco	Chile	Conc	Expansion	367	4,000	2018
Cobre de Panama	First Quantum	Panama	Conc	New Project	320	5,950	End-2017
Collahuasi	Anglo American/Glencore	Chile	Conc	Expansion	496	6,500	na
El Arco	Southern Copper	Mexico	Conc/SX-EW	New Project	190	2,600	2020
El Pachon	Glencore	Argentina	Conc	New Project	280	4,100	na
El Pilar	Southern Copper	Mexico	SX-EW	New Project	35	300	2018
El Teniente new mine level	Codelco	Chile	Conc	Expansion	432	5,100	2020/21
El Tesoro (Encuentro Oxidos)	Antofagasta	Chile	SX-EW	Expansion	50	636	Q4 2016
Esperanza (2nd concentrator)	Antofagasta	Chile	Conc	Expansion	140	2,700	Post-2019
Frieda River	Guangdong Rising Asset Mgmt	Papua New Guinea	Conc	New Project	125	1,700	na
Galore Creek	Teck/Novagold	Canada	Conc	New Project	154	na	na
Golpu (Stage 1)	Harmony (50%)	Papua New Guinea	Conc	New Project	80	2,600	2023
Haquira	First Quantum	Peru	Conc	New Project	190	na	na
Inca de Oro	Guangdong Rising Asset Mgmt/Codelco	Chile	Conc	New Project	50	na	na
Koksay	KAZ Minerals	Kazakhstan	Conc	New Project	80	na	na
Los Pelambres	Antofagasta	Chile	Conc	Expansion	95	1,600	Post-2019
Michiquillay	na	Peru	Conc	New Project	155	700	na
Olympic Dam	BHP Billiton	Australia	Conc/SX-EW	Expansion	225	na	2025
Oyu Tolgoi Underground	Rio Tinto	Mongolia	Conc	Expansion	250	4,400	2021
Project Corridor	Goldcorp/Teck	Chile	Conc	New Project	190	3,600	na
Pumpkin Hollow	Nevada Copper	United States	Conc	New Project	125	1,000	2019
Quebrada Blanca Phase II	Teck	Chile	Conc	Expansion	200	5,600	na
Quellaveco	Anglo American	Peru	Conc	New Project	225	na	na
Radomiro Tomic Sulphides	Codelco	Chile	Conc	Expansion	354	5,400	Post-2020
Roseby (Little Eva)	Sichuan R'way Invstmt/ Altona	Australia	Conc	New Project	39	232	2019
Rosemont	HudBay	United States	Conc	New Project	110	1,226	2020?
Schaft Creek	Teck/Copper Fox Metals	Canada	Canada	New Project	105	3,257	na
Sierra Gorda Phase II	KGHM/Sumitomo	Chile	Conc	Expansion	100	na	2020
Serrrote	Aura Minerals	Brazil	Conc	New Project	30	420	na
Taca Taca	First Quantum	Argentina	Conc	New Project	244	3,000	na
Tampakan	Indophil Resources	Philippines	Conc	New Project	375	5,900	na
Tia Maria	Southern Copper	Peru	SX-EW	New Project	120	1,400	na
Toquepala concentrator	Southern Copper	Peru	Conc	Expansion	100	1,200	Q1 2018
Toromocho	Chinalco	Peru	Conc	Expansion	75	1,320	na
Twin Metals	Antofagasta	United States	Conc	New Project	82	na	Post-2020
Victoria	KGHM	Canada	Conc	New Project	15	na	2021
Zafranal	Teck 50%/AQM Copper	Peru	Conc	New Project	54	na	na
Zone 5	Cupric Canyon Capital	Botswana	Conc	New Project	50	350	H1 2018

*Recent CAPEX figures not yet available for some operations.

Source: GFMS, Thomson Reuters