

Copper North Mining Corp – Copper News – Aug 28, 2017

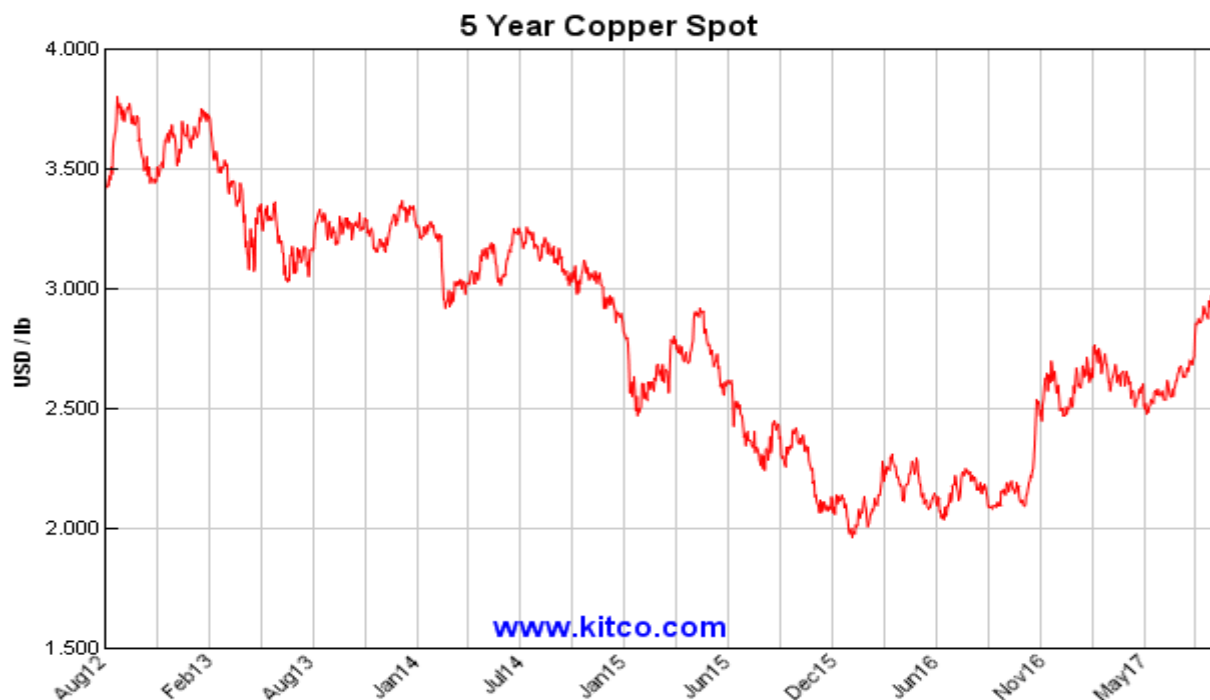
We are sourcing additional information as to supply and demand that may interest our investors. The information is taken from newsletter and other industry databases. Investors should not rely on the information provided in this Copper News; rather, they should seek advice from investment advisors.

20 Year Copper (1998 -2016)

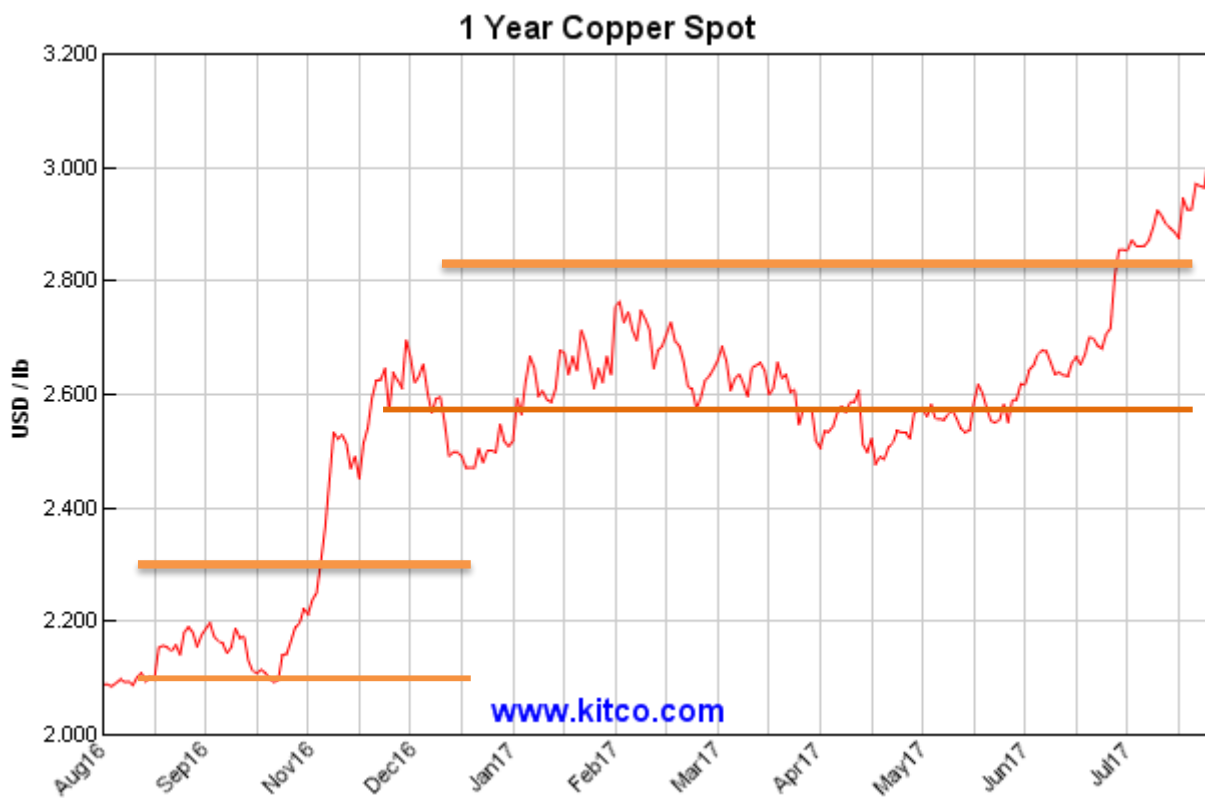
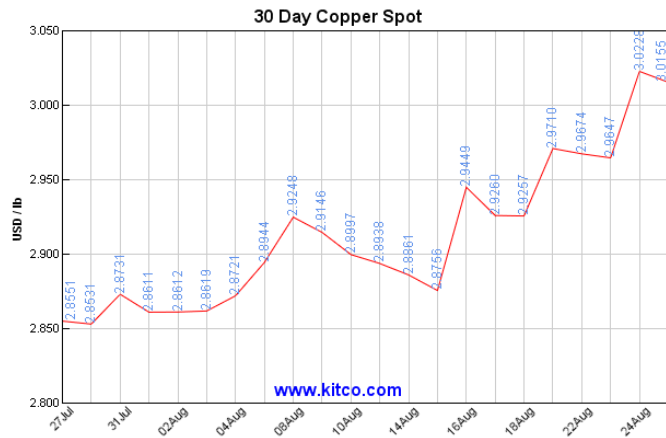
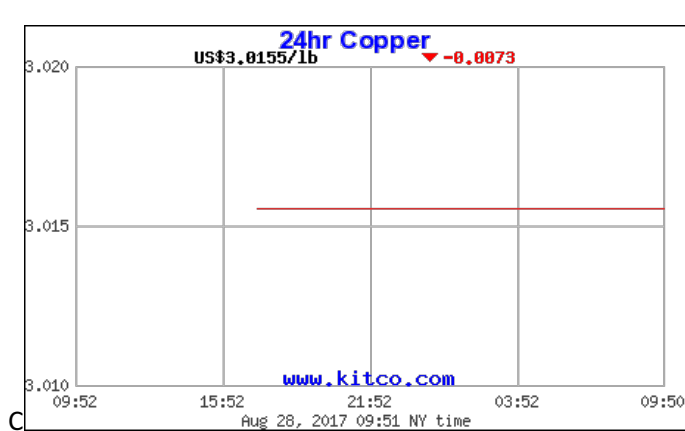


New Copper Market 2017 – Copper Breaks Out Q4, 2016 and again at July 2017.

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\$2.70/lb to US\$3.00/lb range.



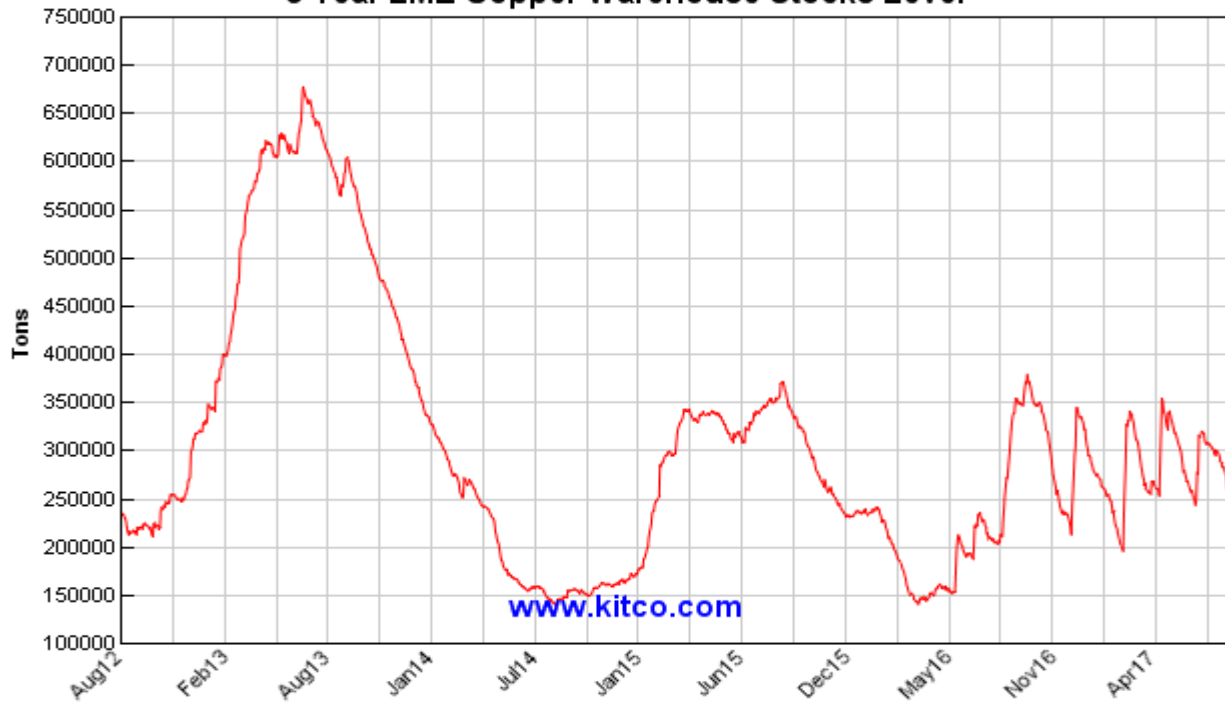
Daily Spot, Six Month and One Year Copper Price and LME and COMEX Copper Inventories



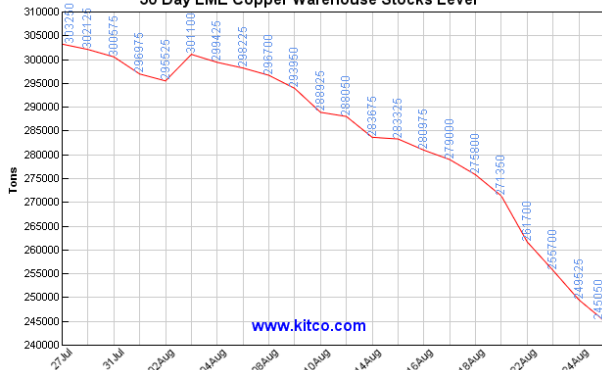
Copper Inventory Adjustments (Note: table does not include private stocks of smelters, governments, etc.)

LME copper inventories decline from 380,000 tonnes August 2015 peak, to March 2016 low of approximately 145,000 tonnes, a five-year low . In fall 2016, 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 moved lower to 199,000 tonnes as of March 5th, 2017. Recently, LME inventory spiked to 354,650 tonnes, and is again in decline over several months only to spike approximately 60,000 tonnes and declined to current 240,825 tonnes.

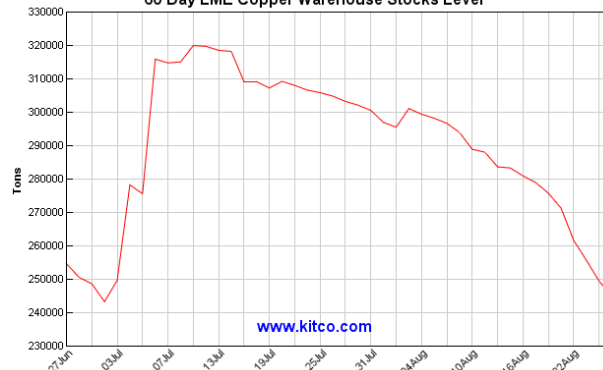
5 Year LME Copper Warehouse Stocks Level



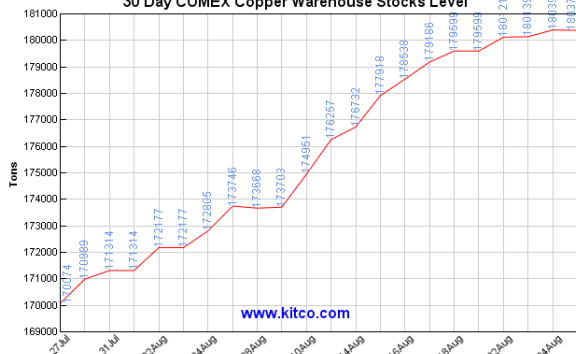
30 Day LME Copper Warehouse Stocks Level



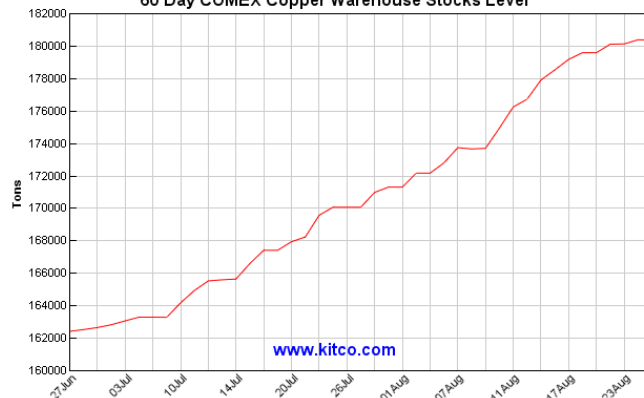
60 Day LME Copper Warehouse Stocks Level



30 Day COMEX Copper Warehouse Stocks Level



60 Day COMEX Copper Warehouse Stocks Level



After LME runup LME and decline to down to 259,725 tonnes in April until the run up of 354,650 LME tonnes in early May 2017 before a further decline. The past week LME declined to 240,825 tonnes; Shanghai inventories continue to increase slightly and NYMEX after rising to current 180,378 tonnes.

Weekly Inventories LME, Shanghai and NYMEX Warehouses.

Week Of	LME (65%)	Shanghai (23%)	NYMEX (11.5%)
August 21, 2017	-30,525 tonnes	-16,646 tonnes	+721tonnes
August 14, 2017	-12,425	-3,687t	+3,032
August 7,2017	-14,550	+17,062	+2,641
July 31, 2017	-2,350	+11,932	+2,139
July 24, 2017	-6,050	+6,009	+2,034
July 17, 2017	-6,675	-8.858	+2,810
July 10, 2017	-1,775	-1,172	+ 2,139
July 3, 2017	+65,376	+6,184	+416
June 26, 2017	-9000	-8,996	+445
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

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

August 28, 2017

- China's TCs for imported Cu concentrate stabilized this past week, and was offered at \$79-85 /t on Aug2517, SMM data showed. Market participants saw sluggish transaction in imported Cu concentrate market. Offers for spot clean or were closed to \$80 /t, with few trading at \$82-83 /t.
- Two of Chile's 3 main candidates in the Nov17 presidential election proposed broad changes for the mining sector at a forum on Friday hosted by the country's largest business organization. At the event organized by business group Sofafa in downtown Santiago, center-left candidate Alejandro Guillier struck a pro-business tone but said he would consider modifying free trade accords to promote the local smelting industry. *Comment: We believe political uncertainty will slow new mine develop in Chile.*

August 25, 2017

- China's TCs for imported Cu concentrate stabilized this past week, and was offered at \$79-85/t on Aug2517, SMM data showed. Market participants saw sluggish transaction in imported Cu concentrate market. Offers for spot clean copper concentrate were close to \$80/t, with few trading at \$82-83/t.
- Cu output in DRC rose 15% yoy in H117 to 553,800 t, and Co production surged 27% to almost 40,000 t, the central bank said. But despite higher commodity production, DRC's central bank forecast year-end inflation at 52.6%--up from an earlier projection of 48% and from last year's figure of 25%.

August 24, 2017

- Base metals rose as China's markets stabilized following a day of sharp pullbacks, as well as a recovery in the US dollar during Asian trade. Investors also have their eyes on the Jackson Hole annual meeting of central bankers, as they await fresh cues. After their recent run up to multi-year highs, metals are trading slightly below those peaks. Three-month Cu prices on the LME are up 0.7%, while Zn and Ni rose by 1.1% and 0.3% respectively.
- OZ Minerals Ltd (OZ.ASM) said on Thursday it would begin construction of its Carrapateena Cu mine in Australia, the country's largest undeveloped Cu project, which it estimated would cost \$724 M. Carrapateena, located about 160 kms from the Indian Ocean in South Australia state, would start producing in Q419, and yield an annual average of 65,000 t Cu and 67,000 ozs Au over 20 years.

- Barclays Capital estimates the Cu market is in an implied supply deficit of 156,000 t in 2017, which will ease to a shortfall of 114,000 t in 2018 then swing into a surplus in 2019. Barclays Capital estimates that 2.4 M t of Cu supply is at risk because of labor contract negotiations over the next 12 months. For the remainder of 2017, about 514,000 t Cu production is at risk. The bank estimates 612,000 t Cu of supply disruptions YTD, about 60% of its 2017 forecast.

August 23, 2017

- Mopani Copper Mines, **Glencore's (GLEN.L)** Zambian unit, said it may lay off nearly 5,000 workers due to a dispute with its electricity supplier over prices that have led to reduced power supply to its operations. Copperbelt Energy Corp., which buys power from the state-owned electricity company and sells to mines, slashed supply to Mopani to 94 MW from 190 MW following a dispute over new, higher tariffs.

August 22, 2017

- The Chilean government rejected, on Monday, a controversial \$2.5 B Cu and iron project proposed by privately-held Andes Iron, though the Company vowed to appeal. The project plan to produce 12 M t Fe and 150,000 t Cu annually. Chilean environmental protection minister Marcelo Mena indicated that the project would likely have a significant impact on a Humboldt penguin reserve.
- **BHP Billiton (BHP.L)** expects global economic growth to reach 3-3.5% in 2017. US will face uncertainties over economy in a medium term. For a long term, as Cu demand will keep stable increase, global Cu supply shortage will come ahead of schedule.
- Daye Non-Ferrous Metals Group was called to shut down its Tongxing Cu mine in Xinjiang's Hami, which locates at Lop Nur Wild Camel National Nature Reserve in China. Xinjiang requires the Cu mine to suspend mining, exploration, development and research and remove equipment and staff. Tongxing's mining permit in Hami will also be canceled and compensation is under way.
- China's Cu concentrate supply will increase 7.4% in 2018 based on current new Cu ore expansion projects, SMM expects. About 85% of those new expanded capacities are from Zjinshan, Jiama, Pulang, Chengmenshan and Shaxi Cu mines in Tibet, Fujian, Yunnan, Anhui and Jiangxi.

August 21, 2017

- **KGHM**, for Q217, reported a profit of \$26.4 M. Production highlights included:
 - Cu concentrate production fell because of processing capacity issues in Poland and lower ore grades. Cu concentrate production during Q217 fell by 1.2% from Q216 to 168,000 t Cu and output was down by 1.8% at 330,000 t in H117 from H116. H117 Cu sales were 4.6% lower at 309,000 t.
- China Minmetals Corp plans to invest \$1.50 B to upgrade its Cu, Pb and Zn smelting facilities Hunan province, after a recent rebuke from the Ministry of Environmental Protection. The company will invest in new smelting technology starting this month that eliminates the discharge of industrial wastewater.

August 18, 2017

- TCs of spot imported Cu concentrate were steady this past week, SMM. Spot TCs are \$79-85 /t on Aug1817. Those for lean ore are nearly \$80 /t, with mainstream trade prices between \$82-83 /t.
- Cu inventories in Shanghai bonded zone decreased on a weekly basis as of Aug1817. Bonded zone inventories in Shanghai were some 516,000 t on August 18, compared to 520,000 t a week earlier.

August 17, 2017

- WBMS estimated in H117 Cu market was in a shortage of 41,000 t. In 2016, there was a shortage of 68,000 t Cu.

- **BHP (BHP.L)** has approved capital expenditure of \$2.46 B for the Spence Growth Option (SGO) at the Spence openpit Cu mine, in northern Chile, which will extend the mine life by more than 50 years.
 - The SGO project includes the design, engineering and construction of a conventional large-scale sulphide concentrator for both Cu and Mo with a 95,000 t/d nominal ore throughput capacity.
 - In the first ten years of operation, incremental production from SGO will reach about 185,000 t/y of payable Cu in concentrate and 4,000 t/y of payable molybdenum, with first production expected in F2021. The current Cu cathode stream will continue until the F2025.
 - The SGO project will convert 1.3 B t of M&I Resources to hypogene sulphide ore Reserves.
 - The project has an expected IRR of 16% and an expected payback period of 4.5 years from first production.
 - A new 1,000 t/s desalination plant will have to be built at Mejillones Bay, along with a 154 km water pipeline to the Spence mine. These will be built and operated by an undisclosed third party under a build, own, operate and transfer contract that has been separately awarded, with nominal, undiscounted value of lease payment obligations over the 20-year contract term totaling \$1.43 B.

CEO Andrew Mackenzie said, "Execution of the SGO will create long-term value for shareholders in one of our preferred commodities. The project significantly extends the life of our Spence operation and unlocks the potential of the large, quality resource. SGO has been extensively studied and we have made significant improvements to project cost and design so that it is able to compete in our portfolio of attractive development options."

August 14, 2017

- **Glencore's (GLEN.L)** Zambian Mopani Copper Mines unit suspended operations in certain areas on Saturday after the Copperbelt Energy Corporation (CEC) restricted power supply to its sites in both the Kitwe and Mufulira regions. The decision comes after a dispute over the implementation of new electricity tariffs, which Mopani and other mining companies have contested in court and remain unresolved, the miner said. The government in Apr17 proposed introducing a flat tariff of US\$.093/kWh backdated to Jan17 for mining companies, instead of individually negotiated rates that have averaged US\$.06/kWh.

August 10, 2017

- Chile's Cu mine production fell 9% yoy in H117, heavily affected by the 44-day strike at Escondida. Output totaled 2.518 M t in Jun17, compared with 2.77 M t in H116, according to preliminary figures from Chile's Cu commission, Cochilco. This is the lowest first-half volume since 2005.
- Cu inventories in Shanghai bonded zone increased for 2 weeks on end, SMM understands. Bonded zone inventories in Shanghai were some 520,000 t as of August 11, compared to 518,000 t a week earlier.

Electric Vehicles

- The increasing popularity of electric vehicles means demand for Cu is rising, and that spells good news for the nation's Cu miners and investors. Coupled with the demand for Cu for use in new technologies, including renewable energy infrastructure, and the role it plays in pollution reduction, the red metal is looking at a buoyant future. Electric vehicle rotary motors use up to four times the amount of Cu as that in a traditional combustion engine, from around 20 kgs to 80 kgs.
- The production and use of electric cars is projected by global financial services firm Morgan Stanley (MS.N) to rise to 2.9% of 99 M new vehicles in 2020 and to 9.4% of 102 M new vehicles in 2025, from 1.1% of 86.5 M in 2017. By 2050, MS forecasts that 81% of 132 M new auto sales will be electric.
- **Glencore (GLEN.L)** raised its earnings guidance on Thursday and said it expected the increased take-up of electric vehicles and demand for storage to boost demand for its products. GLEN increased its full-year forecast for a profit measure called marketing adjusted EBIT by \$100 M to a range of between \$2.4-2.7 B.
- The rise of electric vehicles is driving **BHP (BHP.L)** to switch gears and invest heavily in its long-suffering Ni business. Eduard Haegel, division chief of BHP Ni West, said the company planned to spend more than \$43 M building a Ni processing plant near Perth, Australia as part of a broader plan to reposition the business around batteries.

August 8, 2017

- Net bullish bets on Cu prices rose to the highest level ever during the week (end Aug0117) according to CFTC data going back to 2006. Bullish Cu bets by hedge funds and other speculative investors outnumbered bearish bets by 104,268, eclipsing the previous all-time high of 101,139 from late Jan17.
- **Teck Resources (TECK.T)** and the United Steelworkers said they have reached a tentative agreement for workers at the Highland Valley Cu mine near Logan Lake. The OP Cu mine in southern B.C. produces Cu and Mo concentrates. The union and TECK have been without a contract for nearly a year.
- **BHP Billiton (BHP.L)** is looking for ways to shore up power supply and bring down power costs at its Olympic Dam Cu mine in Australia, as it plans to expand following a string of electrical outages, the mine's head said on Friday.
- According to China Customs, China imported 390,000 t of unwrought Cu and Cu semis in July, up 8.3% YoY. The imports fell 15.2% YoY to 2.62 M t in 7M17. China imported Cu concentrates of 1.4 M t in Jul17 down .71%. In 7M17 China imported 9.7 M t of Cu concentrate, up 3.5%.

August 4 ,2017

- Cu inventories in Shanghai bonded zone increased on a weekly basis as of Aug0417 according to SMM. Bonded zone inventories in Shanghai were some 518,000 t on Aug0417, compared to 515,000 t on Jul2817 and compared to 470,000 t on Jan0117.

July 31, 2017

- Cu moves back toward its best level in 2 years following China's PMI data. Positive demand momentum is building up in China with rising premiums paid on spot markets as well as inventory drawdowns. Other base metals are also rose on the factory data.
- Spot TCs for imported Cu concentrate stabilized last week. As of Jul2817, SMM TCs offers for spot Cu ore were \$80-85/t, SMM data showed.
- **Antofagasta (ANTO.L)** could green-light a major, \$1.1 B revamp of its Los Pelambres Cu mine in Q118, as rising Cu prices buoy spirits in the sector, CEO told Reuters on Friday. In a brief interview after the inauguration of Antofagasta's Antucoya mine, Ivan Arriagada said the company was "very keen" to move forward on the long-delayed upgrade plan there, as well as expand its smaller Centinela mine.

China's Nonferrous Metal Production In H117

- NBS statistics showed China's production of nonferrous metals increased in H117. Total output of 10 non-ferrous metals, Cu, Al, Zn, Pb, Sn, Hg, Ni, Sb, Ti and Mg, was recorded at 27.6 M t in H117--up by 7.2% yoy.
- In H117, Cu production totaled 4.36 M t--up by 8.1% yoy. The rise was the result of an upturn in the real estate sector and new producing projects coming on stream.

July 28,2017

- Cochilco forecasts average global Cu prices of \$2.64/lb in 2017, a slight upward revision from its previous estimate of \$2.60/lb, due to greater demand in China, a key market. Cochilco predicted 2017 Cu production in Chile of about 5.6 M t--a 0.8% rise from 2016 and roughly in line with its previous forecast in Apr17. In 2018, Cochilco added, Chilean Cu production should rise to 5.9 M t.
- India's major brass and Cu scrap prices climbed further on the Scrap Register Price Index as on Wednesday tracking the firmness in Cu futures prices at India's Multi Commodity Exchange on reports that China could ban imports of scrap metal by the end of next year.

July 26, 2017

□ China may ban imports of some scrap metal, including Cu, from the end of 2018, according to an industry association notice, which may lead to higher refined Cu imports into the world's largest consumer of the metal. The review of Cu scrap imports is part of a broader crackdown by China authorities on imports of foreign waste as it looks to cut pollution from heavy industries to clear its skies. The recycling branch of the China NonFerrous Metals Industry

Association said on Tuesday that it had received a notice that at the end of 2018 imports of scrap metal including wire, motors and bulk scrap metal (Category 7) will be prohibited. SMM predicts China to import 1.27 M t of scrap Cu (Cu content) in 2017 based on a 1.2 M t of imports (Cu content) in 2016, including 750,000-900,000 t or 60%-70% of “category 7” scrap metals.

July 25, 2017

- **Antofagasta Minerals** has reached a 3-year contract deal with workers at its JV Cu mine in Chile, averting a strike. The agreement, covering 703 miners and maintenance workers, was concluded after mediation talks were extended last week.

July 24, 2017

- An estimated 5,000 workers at the giant Grasberg copper mine operated by **Freeport-McMoRan Inc's (FCX.N)** Indonesian unit will extend their strike for a fourth month, a union official said on Friday, in an ongoing dispute over layoffs and employment terms. The strike began in May17 after Freeport laid off some 10% of its workforce to cut costs. FCX said that mining and milling rates at Grasberg were affected by the strike. The escalating labor issue comes as FCX is snarled in a lengthy and costly dispute with Indonesia's government over rights to the Grasberg Cu and Au mine.
- Striking mining workers in Peru agreed to return to work by Monday after the government of President Pedro Pablo Kuczynski promised to name a task force to discuss labor laws with them, the Labor Ministry said on Friday. Unionized miners started the nationwide strike on Wednesday to protest what they described as proposed labor reforms that would make firing easier and workplaces less safe.
- Disruptions to Cu shipments from Canada and Chile have undermined expectations for rising global Cu supplies in H217, cutting the charges that smelters charge miners to process metal. Cu TC/RCs, a closely watched indicator of Cu supply, have turned lower in recent weeks. A drop in TC/RCs signals that smelters have been forced to drop their rates to attract feed, an indication of a scarcity of mine supply.

July 21, 2017

- Union-represented workers and management at Antofagasta's Zaldívar Cu mine failed to reach a wage deal on Thursday and they agreed to extend government-mediated talks into next week. Last week, the union voted to strike, prompting the mediated talks and a new contract offer. But workers rejected that offer Thursday.

July 20, 2017

- Mining companies across Peru are waiting to gauge to the impact of an indefinite mining industry strike called for 19 July in protest new labour laws. Peru's National Federation of Mining, Metallurgy and Steel Workers called on workers to stop working at midnight, but so far has not commented on the strength of support it has received. Around 40,000 miners from 110 affiliated unions were expected to take part in the action.
- Chilean authorities have approved a \$2.5 B expansion of BHP Billiton's Spence Cu mine, a local newspaper reported on Wednesday, though the Company has not yet decided whether to go ahead with the project. Chile's Environmental

Evaluation Service (SEA) has unanimously approved the project, which is the second largest mining investment under evaluation in the South American country, the El Mercurio newspaper said.

July 17, 2017

- China's economy grew 6.9% in Q217 from a year earlier, faster than expected and in line with Q117 growth. China's factory output grew 7.6% in June from a year earlier, while fixed-asset investment expanded 8.6% in H117, both beating forecasts. Its property sector, a key metals user, also showed underlying demand remained resilient to government curbs.

July 13, 2017

- Citibank expects Cu prices to top \$6,000/t due to supply deficit, and reach \$7,000/t before the end of 2017. Cu prices may even outstrip \$8,000/t by the end of 2020. China's demand will grow 3-4% in H217 due to grid upgrading and vehicle sales. This will drive up Cu prices.
- Goldman Sachs take a bullish outlook for short-term Cu price, which will challenge \$6,200/t, citing robust demand growth. But, supply surplus later will weigh down Cu price to \$5,500/t in 2018 and \$5,300/t in 2019.
- According to China Customs, China imported 2.23 M t of Cu in H117, a drop of 18.4% on a yearly basis. China's imports of unwrought Cu and Cu semis were 390,000 t in Jun17, flat on the month and down 7.14% on a yearly basis. China imported 1.51 M t of Cu scrap during 5M17--up 17.6% on a yearly basis. China's imports of Cu ore and concentrate rose 4.44% on a yearly basis to 1.41 M t in Jun17. Total Cu ore and concentrate imports were 8.28 M t in H117, a rise of 3.6% a yearly basis.

July 11, 2017

- Indonesia says it will invite the head of **Freeport McMoRan Inc (FCX.T)** to Jakarta this month to try to settle a festering dispute over a new deal to operate the world's second-largest Cu mine. Indonesia says it will invite the head of FCX to Jakarta this month to try to settle a festering dispute over a new deal to operate the world's second-largest Cu mine. The conflict comes as FCX pushes back against parts of new government rules that require miners to adopt a special licence, pay new taxes and royalties, divest a 51% stake in their operations and relinquish arbitration rights.
- Chile's Finance Minister, said the Ministry raised the average Cu price forecast from \$2.20 to \$2.50/lb. Cu prices have slowly begun recovering from multi-year lows, and demand has shown signs of improving, while strikes and political disputes have tightened Cu supply.

July 10, 2017

- CFTC (Jul0317) data showed hedge funds and money managers have reduced their net long positions in COMEX Au and Ag for the fourth straight week. The speculators raised their net long position in Cu futures and options. In Au the net long positions were cut by 38,956 contracts to 37,776 contracts and for Ag net long positions by 10,573 contracts to 1.854 contracts.
- Workers at the **Antofagasta Minerals (ANTO.L)** operated Zalvidar Cu mine in Chile are preparing to start strike action on Jul2017 unless contract negotiations are resolved, the union said. A vote is being held today and on Monday. ANTO acquired a 50% stake in Zalvidar from **Barrick Gold (ABX.T)** in late 2015. The mine produced 103,400 t Cu in 2016.

July 7, 2017

- SMM said Cu TCs of spot imported concentrate into China fell slightly this past week as supplies tightened. Spot TCs were quoted at \$80-85/t on Jul0717. Mainstream quotes have been pushed down to \$80-84/t, but Cu smelters held floor price firm at \$85-86/t.
- DRC's government has formally requested financial support from international donors as it confronts a worsening economic crisis. Africa's top Cu producer has been hard hit by low commodity prices in recent years. It has only enough foreign currency reserves to cover about three weeks of imports and its franc currency has lost half its value in the past year. Western donors are reluctant to aid the government of President Joseph Kabila, who refused to step down when his constitutional mandate expired in Dec16. Kabila's government has been accused of widespread human rights abuses – charges it rejects.

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%.

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 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 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 Apurimac 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 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 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.

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.

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			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			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

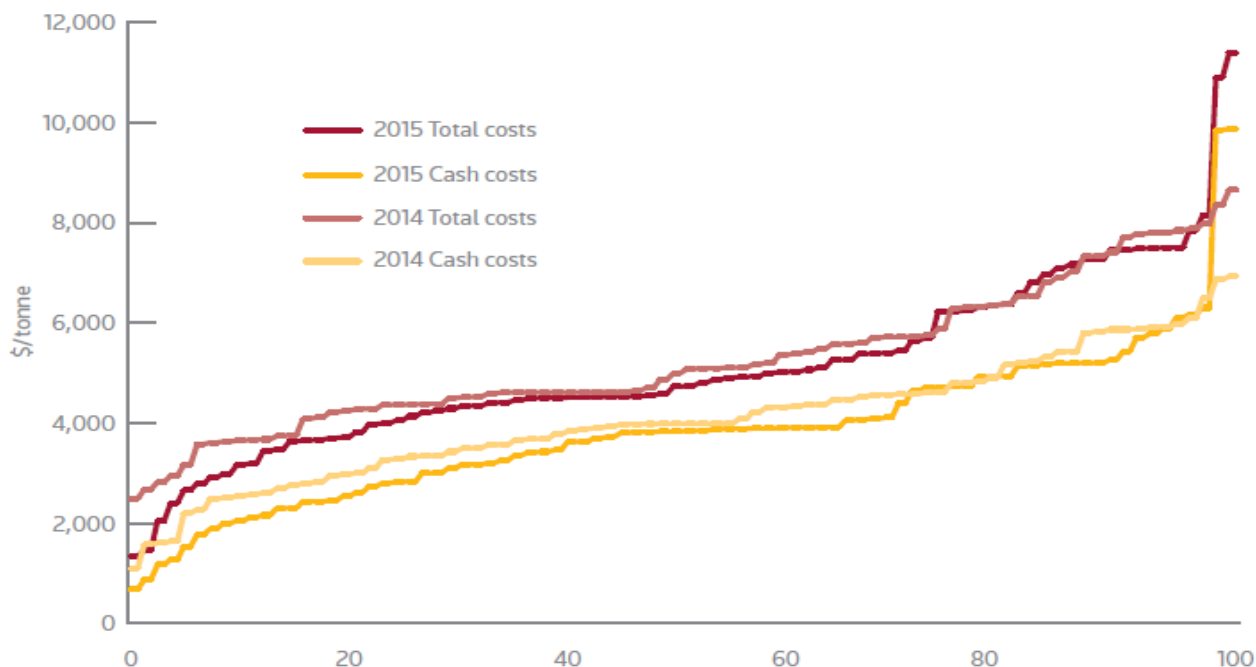
*Attributable basis – totals may differ from company reports

Source: GFMS, Thomson Reuters

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
Serrote	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