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BATTERY METALS

CIF North Asia lithium prices continue to sink

Battery-grade lithium delivered into North Asia took a tumble this week as both carbonate and hydroxide prices fell $400/mt from June 7.

The Platts lithium hydroxide CIF North Asia assessment fell $400/mt Friday to $13,500/mt, while the lithium carbonate CIF North Asia assessment dropped $400/mt on the week to be assessed at $10,500/mt. Both assessments reflected offers, bids and deals for battery-grade material delivered to the main ports of China , Japan and South Korea.

Seaborne prices fell as trades and tradable values were lower this week as demand was heard to be suffering in the major demand base of China .

A South American producer said that, despite the present movements in domestic prices , they were looking to return to the Chinese market, and for material sold into China , the tradable value was marginally above domestic prices . The producer also suggested that they had an optimistic outlook on demand over the second half the year, feeling that the present lull was merely temporary.

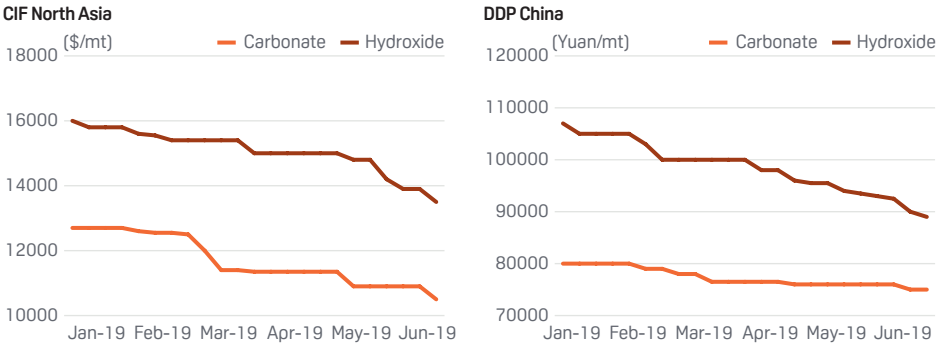
Market participants have been of a

(continued on page 2)

BATTERY METALS

	Weekly prices	Change	Date assessed
Lithium Carbonate			
CIF North Asia ($/mt)	10500	-400	14-Jun-19
DDP China (Yuan/mt)	75000	0	14-Jun-19
CIF North Asia Import Parity (Yuan/mt)	81794	-3126	14-Jun-19
Lithium Hydroxide			
CIF North Asia ($/mt)	13500	-400	14-Jun-19
DDP China (Yuan/mt)	89000	-1000	14-Jun-19
CIF North Asia Import Parity (Yuan/mt)	105163	-3129	14-Jun-19
Cobalt Sulfate			
CIF North Asia ($/mt)	7800	-500	13-Jun-19
DDP China (Yuan/mt)	40500	-1000	13-Jun-19
Lithium Spodumene			
6% Spodumene Concentrate FOB Australia ($/mt)	615	-20	31-May-19

PLATTS LITHIUM CARBONATE AND LITHIUM HYDROXIDE



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bearish disposition in recent weeks, especially on hydroxide, which has been sliding in the seaborne and Chinese domestic markets. The influence of the Chinese market has been growing as exports from the country have been rising. From January to April, China exported 12,774 mt of lithium hydroxide, up 59% on the year, according to data from the Chinese customs.

In the Chinese domestic market, prices movements diverged, with carbonate holding at Yuan 75,000/mt and hydroxide slipping Yuan 1,000 on the week to Yuan 89,000/mt — continuing to hold CIF North Asia prices above DDP China .

The Platts $10,500/mt CIF mark for carbonate was equivalent to Yuan 81,794/mt, including 13% VAT, based on the Platts' import-parity formula, while hydroxide's price of $13,500/mt was equivalent to Yuan 105,163/mt on the same basis. The Yuan was assessed at 6.8937 to the dollar at 4:30 pm Singapore time Friday

Many participants across the Chinese EV market felt there was little good news for battery metals at present. Cathode producers said cathode orders were down compared with last month. Some felt they were being pressured from both the upstream and downstream sides, as battery makers pushed for lower cathode prices , while raw material suppliers were reluctant to drop their prices further. Original equipment manufacturers were heard to be reducing production to avoid suffering losses later this year.

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Chinese lithium hydroxide continues to slide; carbonate remains stable

Chinese domestic lithium hydroxide succumbed to sluggish demand this week and dropped for the seventh consecutive week. Carbonate, however, was unchanged as producers were reluctant to lower offers in face of weakening demand.

S&P Global Platts assessed lithium carbonate unchanged at Yuan 75,000 ($10,831)/mt on Friday, while the assessment for lithium hydroxide fell Yuan 1,000/mt to Yuan 89,000/mt. Both assessments refer to battery-grade product on a delivered, duty-paid (DDP) China basis.

The Chinese lithium market picture remained largely unchanged this week, with anticipation of further demand weakness coupled with growing supply continuing to cast a bearish sentiment over the market.

"It's hard to make deals now in view of the oversupply in the market," one producer said. Another producer said that "data showed that lithium carbonate output [was] increasing in May but demand is weakening."

Lithium demand has been dropping since few months, with buying frequency and quantities falling. One consumer said his company had not only reduced quantities being booked but also slashed their lead times from one month to just three days, reflecting the availability of material in the present market.

A Chinese producer suggested that selling at their current levels of Yuan 76,000-77,000/mt was not a profitable venture. They felt that spodumene prices were also trending downward on increased supply. The producer lamented the impact of the new Chinese new energy vehicle subsidies on cathode demand.

Many participants across the market felt there was little good news for battery metals at present. Cathode producers, and thus lithium buyers, reflected that cathode orders were down compared with May. Some thought they were being pressured from both upstream and downstream issues, as battery makers pushed for lower cathode prices and raw material suppliers were reluctant to drop their prices any further. Original equipment manufacturers were heard to be reducing production to avoid suffering losses later this year.

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Cobalt sulfate price slumps on weak Chinese demand

Despite many market participants believing that prices could fall no further, cobalt sulfate found more room to drop this week.

S&P Global Platts assessed cobalt sulfate (20.5% Co) at Yuan 40,500/mt delivered, duty-paid China , Thursday, down Yuan 1,000 from June 6, while the seaborne market fell $500 to $7,800/mt CIF North Asia.

Continued weak demand pushed Chinese domestic sulfate prices ever lower this week. With global cobalt refining production so heavily dominated by China , the seaborne market continued to take direction from domestic Chinese market, which also fell this week.

Many in the market felt that Chinese prices were bottoming out, with the cost of production providing a buffer. However, this had been the view last week also. One trader said that "the price is bottoming out as producers are suffering losses now."

Some larger producers were heard to be reluctant to lower prices further as they attempted to stymie potential losses. However, some smaller producers with tighter capital constraints were heard to be offering lower prices , pushing notional values down. "Those who are strapped are willing to sell at low prices to cash in," a source at a large producer said.

Production costs of Yuan 40,000/mt were heard from one producer, consistent with values heard from other market participants in previous weeks. At the present assessment of Yuan 40,500/mt there is little money to be made.

Cathode producers were also heard to be under pressure from battery makers looking to reduce costs in the present seasonal lull and thus were passing this sentiment upstream. One sulfate producer said that he had heard orders in the downstream market had shrank heavily.

The current tightness in production cost has seen many in the market discussing nickel sulfate. One major producer switched a portion of cobalt production to nickel sulfate this month, reportedly for economic

purposes. Others in the market have also been talking up the more stable price and thus margins of nickel sulfate.

There was, however, suggestion from one recycler that the decision of the major producer to increase nickel sulfate production at the expense of cobalt sulfate this month was not a reaction to present margins, but a strategic adjustment given the anticipated direction of the industry toward higher nickel cathodes.

The recycler did concede there was a glut of cobalt sulfate refining capacity at present and that almost all Chinese producers were losing money at current prices .

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Northvolt secures $1 bil lithium-ion 'gigafactory' financing

European battery producer Northvolt has secured $1 billion to finance construction of Europe's first "home-grown" lithium -ion "gigafactory" to be located in Sweden , backed by automakers Volkswagen and BMW, in an attempt to compete in the growing global electric -vehicle revolution, Northvolt said Wednesday.

The factory will operate under the subsidiary brand Northvolt Ett.

In the wake of the so-called "dieselgate" scandal that broke in 2015, VW has been pushing hard to electrify its fleet.

Goldman Sachs will provide the capital, alongside VW, BMW and others. The transaction is subject to approval from the Swedish competition authority.

"Today is not only a great milestone for Northvolt, it also marks a key moment for Europe that clearly shows that we are ready to compete in the coming wave of electrification, and that we will do so using battery cells which carry the lowest CO2 footprint possible," said Peter Carlsson, co-founder and CEO of Northvolt.

In a statement, Northvolt said that, in addition to the gigafactory in Sweden , VW and Northvolt plan to set up a 50:50 joint venture to establish a 16 GWh battery cell factory in Germany .

After entering several supply agreements, a significant share of the production volumes from Northvolt Ett has been sold to key customers, amounting to a combined order value of over $13 billion through 2030, the company said.

VW has previously said that it is investing $1 billion in the battery sector.

Stefan Sommer, a member of the VW management team responsible for procurement, said that the company is "laying the groundwork at all levels for the successful implementation of its electrification strategy. With Northvolt, we have found a European partner whose know-how and sustainable, CO2 optimized battery cell production processes will enable us to advance cell production here in Germany . The prerequisite for this is, of course, the creation of the political framework."

VW has been vocal in recent statements that it can only do so much to help Germany's EV plans, and that the country's government also needs to step up its efforts.

Recently, VW said it is aiming to install 36,000 electric vehicle charging points by 2025 across Europe , 11,000 of them developed by the VW brand directly.

Still, Europe may be investing more in the battery manufacturing industry but questions remain as to how quickly adoption of EVs will actually take place.

Patrick Schaufuss from consultancy McKinsey said earlier this year that one of the biggest hurdles to adoption was infrastructure to support charging. On Schaufuss' estimate, 3 million charging points would be needed in Europe alone by 2030. As such, another vital ingredient in the mix will be vehicle sharing.

The EU is keen to develop a domestic manufacturing base for lithium -ion and other batteries, as its battery market could be worth up to €250 billion in 2025.

EVs are on track to dominate global sales of passenger cars by 2040, with a 57% market share, according to recent research from BloombergNEF.

"Over the past 15 years, we have built up our expertise across the entire value chain with regard to electro-mobility," BMW's Klaus Frohlich, a member of the car maker's management team for business development, said. "With our flexible architecture and already the fifth generation of our electric -drive trains, we will be able to scale up to high production volumes and better cater to changing customer demand."

Since launch in 2017, Northvolt has grown from 12 to almost 300 people, and now employs over 45 different nationalities from companies such as Tesla, Daimler, LG Chem , Panasonic , Spotify and Google, the company said.

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VW aims to install 36,000 EV charging points across Europe by 2025

Volkswagen is aiming to install 36,000 electric vehicle charging points by 2025 across Europe ; 11,000 of them developed by the VW brand directly, the auto company said recently.

The charging stations will be installed at VW plants and at about 3,000 VW dealerships in all large towns and cities, it said in a statement.

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VW is investing about €250 million in charging points alone at its European locations; at the same time calling for more to be done across the industry to speed up the development.

"To paraphrase the now cliched phrase 'build it and they will come'; we argue that

'build them [the chargers] and they [consumers] will buy [EVs],'" BHP VP market analysis and economics Huw McKay said in the miners latest outlook piece on the EV market.

McKay noted that the ratio of one charging unit per new vehicle was "OK, but it is far from spectacular."

Thomas Ulbrich, member of the board for VW's E-Mobility unit, said that, "charging infrastructure will increasingly become the crucial factor for the rapid breakthrough of e-mobility in Germany . Charging an electric car must become just as easy and normal as charging a smart phone. This is why we need significantly more charging stations in public spaces and simple rules for the installation of private wallboxes."

Estimates by Volkswagen indicate that 70% of all charging operations will be carried out at home or work in the future. Volkswagen subsidiary Elli, electric life, will be offering complete charging solutions for companies and consumers to meet these requirements from 2020 onwards.

"There is potential for e-mobility to become a genuine success story in Germany . If industry and politicians make a concerted effort, we can overcome the challenges of charging infrastructure very fast. Similarly, we can only master the technology-driven structural transformation in our industry by working together," added Ulbrich.

Public charging stations will be used for about a quarter of all charging operations, according to VW data.

The company's "We Charge" service will give customers access to more than 100,000 charging points throughout Europe in the future — in the medium term, the figure is set to rise to 150,000 charging points.

Partnerships with retail chains are planned, allowing customers to charge their cars conveniently while they are shopping. Conversation's with UK supermarket chainTesco — as well as other chains — are said to be in the pipeline.

S&P Global Analytics' EV Essential research published Monday said that EU and the US charging points totaled 170,000 and 73,000 respectively, as of the end of May 2019.

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EVs set to dominate global car sales by 2040: BNEF

Electric vehicles are on track to dominate global sales of passenger cars by 2040, with a 57% market share, according to research firm BloombergNEF.

Electric buses are predicted to take an 81% share of municipal sales by the same date, BNEF said.

However, the research company emphasized that electrification has its limitations.

"Heavy trucks will prove the hardest segment for electrics to crack, with the latter's sales limited to 19% in 2040. Their use case will mostly be in shorter-distance applications. However, conventional heavy trucks on long-haul routes will also face other, non-electric competition — from alternatives using natural gas and hydrogen fuel cells," the report said.

The role of shared mobility services, such as ride-hailing and car-sharing, will be important to the renewable scenario. These services account for less than 5% of all passenger miles travelled globally at the moment, but this is set to rise to 19% by 2040, according to the research paper. The BNEF team said it does not expect autonomous driving to have an impact on global transport and energy patterns until the 2030s.

Colin McKerracher, head of advanced transport for BNEF, said: "Our conclusions are stark for fossil fuel use in road transport. Electrification will still take time because the global fleet changes over slowly but, once it gets rolling in the 2020s, it starts to spread to many other areas of road transport. We see a real possibility that global sales of conventional passenger cars have already passed their peak."

Still, BNEF doesn't paint an altogether positive outlook for air quality improvement linked to electrification.

"The BNEF team sees the size of the global on-the-road conventional passenger car fleet continuing to grow until 2030. This means that road vehicle emissions will continue to rise for the next decade, followed then by a sharp fall in the years before 2040, which will only return them to levels similar to 2018," the report read.

The main driver for the electrification trend over the next 20 years will be further sharp reductions in EV battery costs, making electric cars cheaper than internal combustion engine (ICE) alternatives by the mid-to-late 2020s in almost every market, on the basis of both lifetime costs and upfront costs. Since 2010, the average cost of lithium -ion batteries per kilowatt-hour has fallen by 85% on a mixture of manufacturing economies of scale and technology improvements.

The BNEF report sees China continuing to lead in electric cars, accounting for 48% of all passenger EVs sold in 2025 and 26% in 2040 when other markets are catching up. Europe is set to pull ahead of the US as the number two EV market globally during the 2020s. Electrification in non-China emerging markets will be much slower, leading to a fragmented global auto market.

The oil industry will all be impacted by the rise of EVs. A year ago, BNEF estimated the impact on road fuel demand at 7.3 million b/day by 2040.

"However, it has now nearly doubled this to 13.7 million b/d, partly because of new forecasts for electrification of the commercial vehicle sector and partly, paradoxically, because ICE fuel efficiency is expected to proceed more slowly than previously thought. That means that every EV displaces a conventional car that would have used a greater quantity of road fuel," it added.

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AVZ, Huayou strike strategic deal on DR Congo lithium project

Australian -listed AVZ Minerals has entered into a strategic relationship with Chinese Zhejiang Huayou Cobalt to assist it in the completion of a definitive feasibility study for the Manono lithium and tin project in the Democratic Republic of Congo , AVZ said Wednesday.

Under the agreement Huayou Cobalt will provide advice and assistance with respect to project financing, offtake financing, strategic services, engineering, procurement, and construction management and transport of product to recipients, AVZ said.

Huayou Cobalt is China's largest cobalt refiner. The company is also one of the world's largest manufacturers of cobalt chemicals used in electric car batteries and "has extensive in-country experience with a number of established cobalt mining and processing operations within the DRC," AVZ said

"Huayou has made its mark in DRC as a pioneer of in-country processing, a key strategic priority for both Tshisekedi [current DRC president] and [former president] Kabila. A promise to introduce domestic beneficiation at Manono will likely accompany this deal, despite the clear power supply issues the project will undoubtedly face," Verisk Maplecroft's Africa analyst Indigo Ellis said.

AVZ extended scoping study

AVZ recently completed an extended scoping study for 5 million mt a year of capacity at the lithium project that could mean annual production of around 1.1 million mt/year, at a minimum of 5.8% lithium oxide, over a 20-year mine life.

The Australian mineral company scoping study has marked a pretax net present value of $2.63 billion with an internal rate of more than 64%, it said.

Capital expenditure on the Manono project is estimated at $380 million-$400 million, AVZ said.

Following its latest resource upgrade the Australian mineral exploration company said the Manono project in the DRC was confirmed as the largest lithium deposit in the world.

The Manono lithium project is a joint venture between AVZ Minerals (60%), Cominiere (30%) and Dathomir Mining Resources (10%). Huayou is a 9.47% shareholder in AVZ.

Strategic relationship

AVZ managing director Nigel Ferguson believes "that bringing Huayou's tremendous mining expertise to bear on the DFS [Definitive Feasibility Study], financing and offtake negotiation will accelerate the commercialization of the largest lithium ore body on the ASX [Australian Securities Exchange] and yield tremendous value for AVZ shareholders," he said in a statement.

"This project is one of the standout development projects globally in our view. It has the potential to deliver a premium grade product to market and we expect to work closely with AVZ to maximize the potential of the Manono project," Huayou Cobalt Group president Hongliang Che said.

The strategic relationship agreement is non-binding and non-exclusive, AVZ said.

The DRC Ministry of Mines was not available for comment.

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UK sales of Nissan's e-NV200 van jump 200% in 2019

UK sales of Nissan's fully-electric e-NV200 small van have so far surged 200% in 2019, signaling growing demand for EVs as businesses adapt to stringent emissions regulations.

Nissan said the introduction of London's Ultra Low Emission Zone from April 8, 2019, helped drive sales of the model.

The release said as per a recent Nissan survey, 24% of small businesses in the UK expect van fleets to be fully electric within a decade.

It was a week of EV vehicle announcements and related battery infrastructure in Europe .

On Thursday Honda released details of a new EV model, the Honda e, which will be built on a dedicated EV platform.

Meanwhile, Fiat said it would produce a fully electric version of its Ducato van in 2020.

In an attempt to source battery requirements for EV cars from within Europe , battery producer Northvolt said Wednesday it had secured $1 billion to fund the construction of Europe's first "home-grown" lithium -ion "gigafactory," to be based in Sweden . The gigafactory is backed by automakers like Volkswagen and BMW as well as Goldman Sachs .

Northvolt and VW are also planning a 50/50 joint venture for a 16 GWh battery cell gigafactory in Germany .

Meantime, global sales of electric vehicles slowed in April from March levels, with subsidy rollbacks hitting sales in China , S&P Global Platts Analytics said in a report Monday.

Global EV sales were 166,000 units in April, down 21% from 209,000 units sold in March, the figures showed.

"April's lukewarm sales growth was in part due to stagnant US PEV [plug-in electric vehicle] market and Chinese subsidy rollbacks," the report said.

In the EU 28 countries, EV sales in April fell by 31% to 28,700 units, compared with 41,400 units sold in March. However, on a year-on-year basis, EV sales in the EU were up 35%.

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China's May new energy vehicle sales inch up 2% on year

China's sales of new energy vehicles in May were at 104,000 units, up 1.8% year on year, the China Association of Automobile Manufacturers said Wednesday.

In comparison, NEV sales in January were up 138% year on year, 54% in February, 85% in March and 18% in April. NEV comprises electric vehicles, plug-in-hybrid vehicles and fuel cell vehicles.

"Nearly flat year-on-year sales means there is a slowdown," commented a nickel trader.

NEV sales were better than the sales of traditional gasoline vehicles, that registered a 17.4% year-on-year decline at 1.56 million vehicles in May.

NEV production was at 112,000 vehicles, up 16.9% year on year, but slower than the 113% growth seen in January.

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