

METALS DAILY

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BATTERY METALS

Seaborne battery grade lithium stable on week

Singapore – Seaborne lithium markets found stability this week, as prices on the Chinese domestic market stalled.

The S&P Global Platts assessments for battery-grade lithium were flat on the week, with hydroxide unchanged at \$15,000/mt CIF North Asia, while lithium carbonate was also unchanged at \$11,350/mt, on the same basis.

Spot activity was lacking on the seaborne market this week, maintaining prices at consistent levels. Levels were considered stable on the week as tradeable values from Japanese traders were heard at \$11,350/mt and \$15,000/mt for carbonate and hydroxide.

Seaborne consumers' focus remains on securing longer-term contracts, adopting a more conservative approach to procurement rather than focusing on spot volumes.

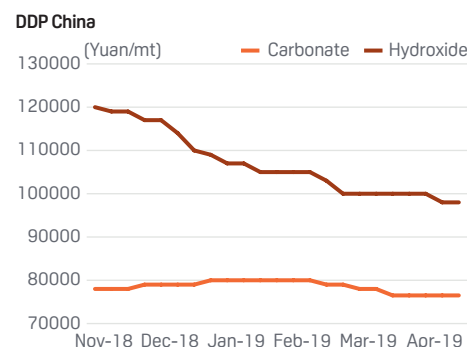
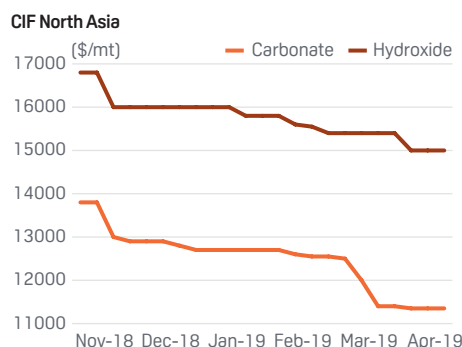
With the Chinese subsidy cut, one trader commented that he expected cheaper products to begin heading toward South Korea and Japan. He worried that an oversupply of lithium carbonate and

(continued on page 2)

BATTERY METALS

	Weekly prices	Change	Date assessed
Lithium Carbonate			
CIF North Asia (\$/mt)	11350	0	12-Apr-19
DDP China (Yuan/mt)	76500	0	12-Apr-19
CIF North Asia Import Parity (Yuan/mt)	86213	+212	12-Apr-19
Lithium Hydroxide			
CIF North Asia (\$/mt)	15000	0	12-Apr-19
DDP China (Yuan/mt)	98000	0	12-Apr-19
CIF North Asia Import Parity (Yuan/mt)	113938	+280	12-Apr-19
Cobalt Sulfate			
CIF North Asia (\$/mt)	8400	+150	11-Apr-19
Lithium Spodumene			
6% Spodumene Concentrate FOB Australia (\$/mt)	650	0	29-Mar-19

PLATTS LITHIUM CARBONATE AND LITHIUM HYDROXIDE



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hydroxide in China might see these products swamp the Japanese and Korean markets.

Despite this anticipation of a further downturn, the Chinese domestic market held stable this week, with some of the opinion the market had already found its base, others, however, merely saw it as a temporary pause.

On the Chinese domestic market,

carbonate and hydroxide were unchanged on the week at Yuan 76,500/mt and Yuan 98,000/mt respectively, maintaining CIF North Asia prices above DDP China .

The \$11,350/mt CIF mark for lithium carbonate was equivalent to Yuan 86,213/mt, including 13% VAT, based on the Platts' import-parity formula, while lithium hydroxide's price at \$15,000/mt was

equivalent to Yuan 113,938/mt on the same basis. The yuan was assessed at 6.722 to the dollar at 4:30 pm Singapore time Friday.

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China domestic battery-grade lithium holds steady on week

Prices for lithium carbonate and hydroxide delivered duty paid in China held steady week on week.

S&P Global Platts assessed battery-grade lithium hydroxide unchanged at Yuan 98,000/mt (\$14,618/mt) DDP China Friday, while lithium carbonate was unchanged at Yuan 76,500/mt delivered, duty-paid China.

Carbonate pricing is understood to have found a bottom, at least in the short term, with multiple market participants saying it has no room left to fall.

A large producer was also heard to be conducting maintenance this week, further aiding the expectation that the downside for carbonate prices is limited in the near future. In addition, brine production is not expected to increase as significantly as forecast.

Lithium hydroxide, however, is expected to see some further weakness, with players

saying softer demand from end-users could pressure prices going forward.

Hydroxide demand comes heavily from high-nickel cathode production, and as a result the recently announced cut in Chinese subsidies for electric vehicles could hinder demand. One smaller producer said: "Battery grade hydroxide demand is weakening as high nickel cathode materials haven't seen massive production and the subsidy cut dealt a blow to the development of high nickel cathode materials. Some new projects were postponed in view of the weak demand and lower prices."

Another Chinese producer also said he had reduced his hydroxide prices as a result of recent cuts in VAT.

Also this week, some larger producers were heard to be looking to reduce their price volatility and ensure stable delivery through closer cooperation with end-users.

This week also saw industrial grade lithium demand holding strong, with supply tightness increasing thanks to improved demand from LMO and LFP battery producers.

With CIF prices for hydroxide and carbonate mirroring the Chinese domestic market and holding steady, the DDP market continued to price below the seaborne market on an import parity basis.

The \$11,350/mt CIF mark for lithium carbonate was equivalent to Yuan 86,213/mt, including 13% VAT, based on the Platts' import-parity formula, while lithium hydroxide's price at \$15,000/mt was equivalent to Yuan 113,938/mt on the same basis. The yuan was assessed at 6.722 to the dollar at 4:30 pm Singapore time Friday.

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Cobalt metal rally continues to push sulfate prices higher

Seaborne and domestic cobalt sulfate gained for the second consecutive week, climbing \$150 and Yuan 3,500, respectively, lifted by a rally in metal prices.

S&P Global Platts assessed cobalt sulfate with 20.5% cobalt content at \$8,400/mt CIF North Asia on Thursday, up \$150 from March 25, while the Chinese domestic market was assessed at Yuan 51,000/mt DDP China , up 3,500 on the week.

Cobalt metal price movements continued to drive both the domestic and import sulfate market.

Producers' offers in China increased steadily throughout the week. But, despite being able to achieve the highest levels in a month, some participants were reluctant to sell. One major producer stated that he was disinclined to commit large volumes, on anticipation of further prices gains, at least in the short term.

Although some producers were hesitant to sell, the week did see improvements in market activity as the price gained and producers found themselves fielding increased inquiries.

A Chinese consumer felt that the new found trajectory for sulfate would continue in the near term. But, citing oversupply, he did not expect the uptrend to be sustainable in the longer term.

A participant in the seaborne market also felt the present gains could be sustained if cobalt metal prices kept rising, but, longer-term sulfate prices were likely to ease because of oversupply and no major increase in demand.

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China's new energy vehicles output rises to 128,000 in March

China's output of new energy vehicles rose to 128,000 in March, up 89% year on year, according to the China Association of Automobile Manufacturers Friday.

March sales were 126,000 vehicles, up 85% year on year. January-March production reached 304,000 vehicles, more than double

on the year, while sales also more than doubled to 299,000 vehicles.

New energy vehicles comprise electric and plug-in hybrid vehicles.

"Regardless of regional trends in car sales, battery metal demand will continue to stay firm on the back of strong EV demand, propelled by

automakers shifting to EV production on the back of environmental standards," Sumitomo Metal Mining, a Japanese producer of nickel and cobalt, as well as nickel sulfate used for lithium-ion batteries, said.

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Japan's Mitsubishi Materials starts trial runs of EV battery recycling

Japanese metals and cement company Mitsubishi Materials has started a pilot plant for recycling electric-vehicle batteries, eyeing commercial launch in 2022 at the earliest, the company said Monday.

The pilot plant has been developed jointly with Japanese recycling company Nippon Magnetic Dressing since 2013.

The plant, in NMD's Kita-Kyushu facility in southern Japan, is expected to recover around 2 kg of cobalt sulfate and nickel sulfate combined from one EV, a Mitsubishi Materials spokesman said.

"By 2030, we forecast over 100,000 EV units will be available for recycling in Japan," he said.

The project aims to recover nickel and cobalt compounds ready to be reused for lithium-ion batteries, rather than other applications, the spokesman said.

Lithium-ion battery recycling is becoming competitive in Japan. The government has pushed recycling technology development in

the last 10 years, as the country is dependent on imports for battery metals.

Another Japanese copper smelter, Sumitomo Metal Mining, said last month it has developed own battery recycling technology to recover nickel, cobalt and copper from spent batteries. Sumitomo Mining is Japan's sole producer of primary nickel and cobalt.

There are several approaches to EV battery recycling: recycling only the EV battery cathode; recycling the entire battery module including cell cases; recycling batteries for EV and other applications; and recycling several types of spent batteries, including solar cells, together.

JX Nippon Mining and Metals was the first Japanese company to commercialize spent lithium-ion battery recycling in 2013, according to the Japan Environment Management Association for Industry. JX uses anodes and cathodes of spent batteries as feedstock and recovers cobalt

and nickel of 99.95% purity, as well as manganese and lithium compounds.

Honda Motor said its technology recovers nickel-cobalt alloy from the battery cathode to be used for hydrogen storage facilities.

Taiheiyo Cement has tested recycling of lithium-ion batteries of EV and non-EV applications, it said.

Scrap recycler Keiaisha has tested recycling lithium-ion batteries and photovoltaic batteries together.

Lithium-ion battery cathode typically contains 4% lithium, 14% nickel, 55% cobalt, 13% manganese, 15% aluminum and the rest other elements, according to Honda Motor.

A Japanese EV lithium-ion battery weighs 42 kg on average, while batteries for non-Japanese vehicles weighed on average 46 kg, according to Taiheiyo Cement data.

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German EV charging point numbers jump as rollout gathers pace

The number of electric vehicle charge points in Germany has risen 65% since the end of 2017 to 17,400 with most points under-used due to sluggish EV sales, German utility lobby group BDEW said Monday.

Germany now has almost 100,000 pure EVs and over 300,000 hybrids on the road with a target of 1 million EVs put back two years by government advisory body NPM to 2022.

"In view of the still small number of EVs on the road, today's charging demand is very well covered. However, to meet the 2030 climate targets in the transport sector, 7 million-10 million EVs would have to be put on the road. For this we need to move faster on every aspect," BDEW Chairman Stefan Kapferer said.

Utilities operate three out of four public charging points, of which 12% are so-called fast-chargers, according to the half-yearly survey.

Germany's auto industry is investing some €40 billion (\$45 billion) in electromobility over the next three years. According to the VDA auto lobby group, German manufacturers plan to triple the number of EV models to 100 over the next three years which will be key to public acceptance of EVs, with tighter emissions controls already leading to plunging diesel car sales.

Germany is lagging behind some early adopters when installing charge points, the VDA said. There is one EV charging point for every 4,500 people in Berlin compared with 1:480 in Oslo or 1:400 in Amsterdam, it said.

According to S&P Global Platts Analytics monthly EV statistics, there are 161,426 public charging points installed across the EU-28 with plug-in EV sales up 44% year on year in January-February.

In 2018 the government launched a €300 million support scheme to install a network of 15,000 public charging points by 2020. Now the focus is shifting to private charging, with transport minister Andreas Scheuer calling for €1 billion support in the 2020 budget.

Research into EV power demand varies widely, with estimates ranging around 2.5 TWh/year additional demand for electricity from 1 million electric cars. Only 1% of total 2018 German car sales were pure EVs.

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Feb global EV sales fall as Chinese market slows: Platts Analytics

Global sales of plug-in electric vehicles fell by 21% in February month-on-month, led by a sharp fall in China due to seasonal factors and ahead of the government cutting subsidies for EVs in March, S&P Global Platts Analytics said in a report Monday.

Global EV sales fell to 122,288 units in February, compared with 154,317 units sold in January, the figures showed, with the biggest drop seen in China – the world's largest producer of EVs.

"As anticipated in our 4Q 2018 EV Scorecard, China's central government has announced a roll-back of their plug-in electric (PEV) purchase subsidies," Platts Analytics said in the report.

"Subsidy for PEVs with an all-electric range >250 miles was reduced by half, thresholds to receive lower subsidy amounts were tightened, and local government subsidies began a 3-month full phase-out," it said.

The latest figures show that the global growth of EVs continues, but at a slower pace than seen in late 2018.

The February global sales figure compares with just 85,286 units sold in February 2018, showing that despite the recent drop in sales, the longer-term trend continues to show growth in EV sales worldwide, with a 43% year-on-year gain.

In Europe, EV sales growth has been relatively steady over the last 12 months, while growth in the US outperformed Europe for much of that period, before falling below European sales since December 2018.

But it was Asian markets where a more dramatic change happened, with the sales figures showing exceptional growth in late 2018 before falling sharply since the start of this year.

"Indeed there was a roll-back of EV subsidies in China, but this did not happen until mid-to-late March," said Zane McDonald, senior transportation and technology analyst at Platts Analytics.

"The cooling down of February EV sales in China is likely due more to both macro-economic and seasonal trends. We anticipate lower absolute sales volumes at the beginning of the year," he said, pointing to bad weather, the Chinese Lunar New Year and the lack of pressure from annual sales quotas on dealerships, all against a backdrop of a recent broader slow-down in China's auto market.

Despite this slow-down, Chinese plug-in EVs still experienced 68% year-on-year gain in sales in February 2019.

East China's Anhui Province has announced plans to install 180,000 charging

poles and 500 battery swapping stations by the end of 2020, according to the report.

Within Europe, the latest available figures are for Q4 2018, when a total of 110,048 EVs were sold. That compares with sales of 90,242 in Q3, 2018, and 86,488 a year earlier in Q4, 2017.

Meanwhile, the Australian coalition government has announced it would not move forward on a national PEV strategy until mid-2020 at the earliest.

"Australia remains one of the few highly industrialized nations that has not adopted an electrification strategy," Platts Analytics said.

In the US, lawmakers in the state of California proposed a bill that would mandate a 40% reduction in on-road medium and heavy-duty truck emissions by 2030 and an 80% reduction by 2050.

"Compliance with this bill would largely require a phasing-out of traditional fossil fuel-powered trucks, a segment notoriously challenging to decarbonize," Platts Analytics said.

Platts Analytics' EV Essentials service collects vetted historical data to track the progression of EV sales growth, related trends, prices and impacts in key emerging auto markets around the world.

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Missouri Cobalt gets US EPA approval to mine for cobalt

Missouri Cobalt has received US Environmental Protection Agency authorization to remediate an old 1,800-acre lead mining site in Madison County, Missouri, and to begin mining cobalt there once the site is cleaned up.

Lead mining ceased at the site in the 1960s. The EPA placed the so-called Madison County Mines Superfund site on the National Priorities List in 2003, making the site eligible for cleanup under the Comprehensive Environmental Response, Compensation and Liability Act.

The EPA says the site is contaminated by lead and other heavy metals.

Missouri Mining Investments, a subsidiary of St. Louis-based Missouri Cobalt

, is required to submit a work plan and draft report to EPA Region 7 in Kansas City, Missouri, by late August. It is unclear exactly when work will begin at the site.

Missouri Cobalt acquired the site in 2018 from Anschutz Mining Corp. of Denver with plans to produce battery metals for the burgeoning global electric-vehicle market.

The Madison County reserve contains an estimated 35 million lb of cobalt, which the company says is the largest single such deposit in North America, as well as an estimated 51 million lb of nickel and 65 million lb of copper.

Missouri Cobalt officials could not be reached for comment Tuesday, but in the

past they have declined to predict how much cobalt could be mined at the site each year.

The project has considerable support in the Madison County area, in part because of its potential economic development stimulus.

It would apparently be the first active cobalt mine in a state better known for lead and the longtime presence of lead producer Doe Run Company.

Since the EPA placed the site on the NPL, more than 626,000 cubic yards of soil at more than 1,900 residential properties have been cleaned up, in addition to 87 acres of mine waste.

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