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Introduction to Argus Consulting

2020



illuminating the markets

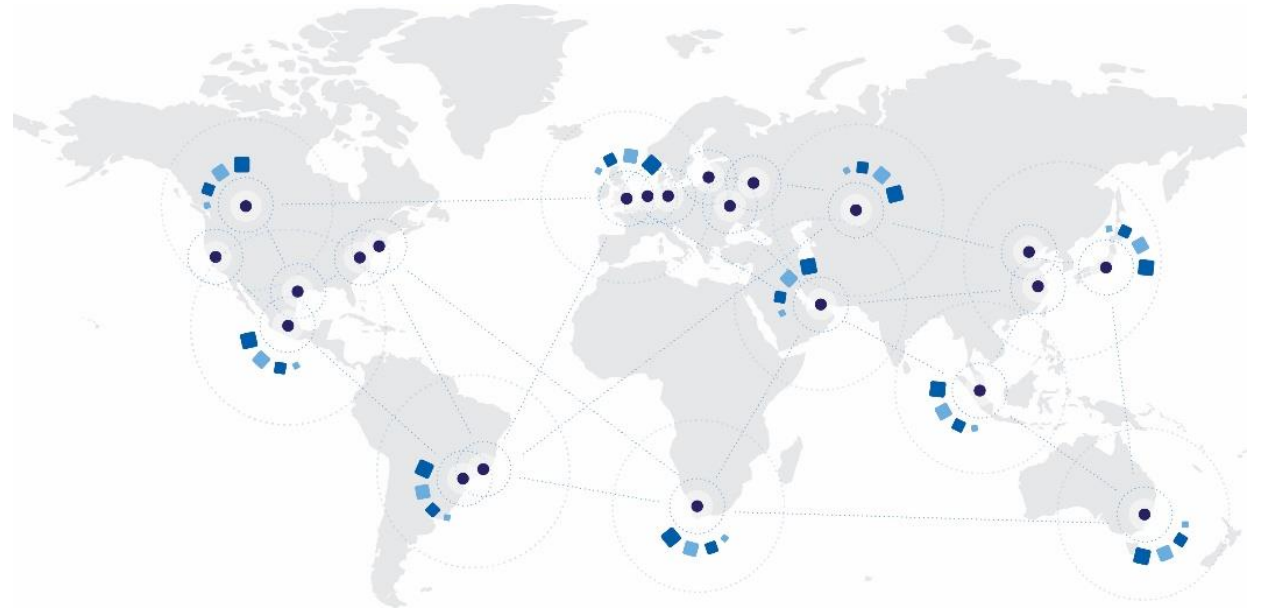
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A view of Argus

- One of the world's leading PRAs, Argus has more than 1000 staff members and offices in the world's principal commodity trading and production centres
- Publishing more than 25,000 price assessments, plus market intelligence for world commodities markets
- Coverage includes:
 - Energy, including oil, natural gas, power, coal, asphalt, base oils, biomass, emissions and more
 - Fertilizers
 - Petrochemicals
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 - US and European environmental markets



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Our consulting capabilities



Investment Support

- Investment feasibility analysis
- Market due diligence
- Long-run supply/demand assessment

Asset Analysis

- Asset optimisation
- Market price maximisation
- Performance benchmarking

Market & Pricing Strategy

- Market entry strategy
- Target market analysis
- Customer segmentation

Regulatory Response

- Regulatory policy impact analysis
- Optimal compliance strategy
- Investment decision support

Transfer & Off-spec Pricing

- Tax authority compliance support
- Internal transfer pricing analysis
- Price adjustments for product specs

Metals consulting services update

Argus Battery Materials Service

Monthly

- 12-month price projections
- Comprehensive trade data and full year forecast
- Supply and demand analysis, & crucial developments
- Project tracker
- Excel datafile

Bi-annual Analytics Update (Excel datafile & webinar – pdf slides) – Li, Co, Ni, Mn & graphite

- 10-year supply forecast model (including update of project tracker)
- 10-year demand forecast model (by element and end-use application)
- 10-year price forecast by element

Analyst access

- Access to our battery materials experts for market queries, updates etc.

White papers, webinars & other content

illuminating the markets

Argus Rare Earths Service

Monthly

- 12-month price projections
- Comprehensive trade data and full year forecast
- Supply and demand analysis, & crucial developments
- Project tracker
- Excel datafile

Bi-annual Analytics Update (Excel datafile & webinar – pdf slides)

- 10-year supply forecast model (including update of project tracker)
- 10-year demand forecast model (by element and end-use application)
- 10-year price forecast by element (REO basis)

Analyst access

- Access to our rare earths experts for market queries, updates etc.

White papers, webinars & other content

Argus Tungsten Service

Monthly

- 12-month price projections
- Comprehensive trade data and full year forecast
- Supply and demand analysis, & crucial developments
- Project tracker
- Excel datafile

Bi-annual Analytics Update (Excel datafile & webinar – pdf slides)

- 10-year supply forecast model (including update of project tracker)
- 10-year demand forecast model (by region and end-use application)
- 10-year price forecast (APT basis)

Analyst access

- Access to our tungsten experts for market queries, updates etc.

White papers, webinars & other content



Metals consulting services update – Battery Materials



consulting services

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Issue 20-6
Wednesday
24 June 2020

Argus Battery Materials Monthly Outlook



Outlook

The month ahead

Average battery material prices were mixed in May, with lithium, cobalt and graphite prices declining, and nickel and manganese prices improving. The outlook for the month ahead is for most prices to continue to weaken, with only nickel and possibly cobalt bucking the downward trend.

The next 3-6 months

Market fundamentals should come more into play in the next six months, but the new Covid-19 outbreak in China has added uncertainty to the metals markets.

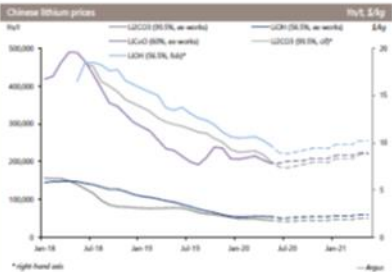
12 months forward

Demand for battery raw materials is expected to continue to forge ahead in the coming 12 months, although there are signs of a slowdown in electric vehicle growth.

Lithium prices

Average monthly lithium prices dropped again in May, and spot prices continued to weaken in June. Chinese ex-works lithium carbonate prices averaged Yn43,000-46,526/t (\$6,050-6,550/t) in May (down by 4pc), and the cif price dropped by 8.5pc to \$7.25-8.88/kg. The ex-works hydroxide price fell by 1pc, averaging Yn61,737-57,158/t in May, while the fob price averaged \$8.75-10.63/kg (down by 6pc). Prices for lithium cobalt oxide (min 60pc Co) averaged Yn190,53-200/kg, down by 5pc.

OUTLOOK: Weakening



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Battery Materials Analytics



Metals

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Market Reporting
Consulting
Events

| | | |
|----|----------|--|
| 18 | SLIDE 18 | 10-Year electric vehicle sales forecast |
| 19 | SLIDE 19 | Regional variation in YTD EV sales |
| 20 | SLIDE 20 | 10-Year electric vehicle sales forecast by geography |
| 21 | SLIDE 21 | Energy demand in 2020 vs 2019 |
| 22 | SLIDE 22 | Forecast global energy demand, 2010-30 |
| 23 | SLIDE 23 | Offshore wind capacity additions, 2010-2022 |
| 24 | SLIDE 24 | Rare earth supply to 2030 (B REO) |
| 25 | SLIDE 25 | Rare earth demand to 2030 |
| 26 | SLIDE 26 | REO price forecast, 2018-30 |
| 27 | SLIDE 27 | Rare Earths Price Forecasts – Cerium Oxide |
| 28 | SLIDE 28 | Rare Earths Price Forecasts – Lanthanum Oxide |
| 29 | SLIDE 29 | Rare Earths Price Forecasts – Neodymium Oxide |
| 30 | SLIDE 30 | Rare Earths Price Forecasts – Praseodymium Oxide |
| 31 | SLIDE 31 | Rare Earths Price Forecasts – Dysprosium Oxide |
| 32 | SLIDE 32 | Rare Earths Price Forecasts – Gadolinium Oxide |
| 33 | SLIDE 33 | Rare Earths Price Forecasts – Europium Oxide |
| 34 | SLIDE 34 | Rare Earths Price Forecasts – Terbium Oxide |
| 35 | SLIDE 35 | Rare Earths Price Forecasts – Samarium Oxide |

Contents

SLIDE 9

SLIDE 11

SLIDE 12

SLIDES 13, 14 & 15

SLIDE 16

SLIDE 18

SLIDE 19

SLIDE 20

SLIDE 22

SLIDE 23

SLIDE 24

SLIDE 26

SLIDE 27

SLIDE 28

SLIDE 30

SLIDE 31

SLIDE 32

SLIDE 33

SLIDE 34



Metals consulting services update – Rare Earths

Argus Rare Earths Monthly Outlook



Outlook

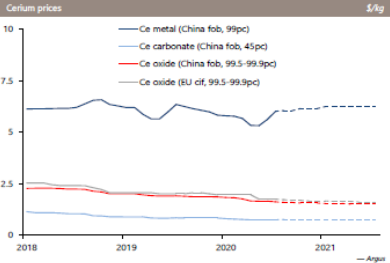
The month ahead
Limited spot availability and a rise in spot enquiries bolstered prices for praseodymium-neodymium, neodymium, gadolinium and terbium, while other rare earth elements were flat at best on weak demand. The outlook for the month ahead is generally stable, with potential upsides for neodymium and some HREE prices.

The next 3-6 months
The outlook for rare earths prices in the medium term is clouded by the global effects of Covid-19, and any second wave of the virus will knock back demand further.

12 months forward
In the longer term, prices for rare earths used in vehicle electrification and clean energy could increase, while other rare earths prices are expected to be flat at best.

Cerium prices
Chinese spot cerium oxide prices dropped in July, pulling the monthly average down after stabilising in June, but cerium metal prices improved. The average monthly fob price for 99.5-99.9pc cerium oxide was \$1.58-1.64/kg in July, down by 1.6pc, while average fob prices for 99pc cerium metal rose by 5.7pc to \$5.93-6.10/kg. Monthly cif prices for 99.5-99.9pc cerium oxide in Europe were assessed unchanged at \$1.70-1.78/kg on 1 July.

OUTLOOK: Mixed



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Rare Earths Analytics



Metals
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Market Reporting
Consulting
Events

| | | |
|-----|-----------|--|
| 18 | SLIDE 18 | 10-year electric vehicle sales forecast |
| 19 | SLIDE 19 | Regional variation in YTD EV sales |
| 20 | SLIDE 20 | 10-year electric vehicle sales forecast by geography |
| 21 | SLIDE 21 | Energy demand in 2020 vs 2019 |
| 22 | SLIDE 22 | Forecast global energy demand, 2010-30 |
| 23 | SLIDE 23 | Offshore wind capacity additions, 2005-2022 |
| 24 | SLIDE 24 | Rare earth supply to 2030 (REO) |
| 25 | SLIDE 25 | Rare earth demand to 2030 |
| 26 | SLIDE 26 | REO price forecast, 2018-30 |
| 27 | SLIDE 27 | Rare Earths Price Forecasts – Cerium Oxide |
| 28 | SLIDE 28 | Rare Earths Price Forecasts – Lanthanum Oxide |
| 29 | SLIDE 29 | Rare Earths Price Forecasts – Neodymium Oxide |
| 30 | SLIDE 30 | Rare Earths Price Forecasts – Praseodymium Oxide |
| 31 | SLIDE 31 | Rare Earths Price Forecasts – Dysprosium Oxide |
| 32 | SLIDE 32 | Rare Earths Price Forecasts – Gadolinium Oxide |
| 33 | SLIDE 33 | Rare Earths Price Forecasts – Europium Oxide |
| 34 | SLIDE 34 | Rare Earths Price Forecasts – Terbium Oxide |
| 35 | SLIDE 35 | Rare Earths Price Forecasts – Samarium Oxide |
| 36 | SLIDE 36 | Rare Earths Price Forecasts – Yttrium Oxide |
| 37 | SLIDE 37 | Rare Earths Price Forecasts – Scandium Oxide |
| 38 | SLIDE 38 | Rare Earths Price Forecasts – Gallium Oxide |
| 39 | SLIDE 39 | Rare Earths Price Forecasts – Indium Oxide |
| 40 | SLIDE 40 | Rare Earths Price Forecasts – Tin Oxide |
| 41 | SLIDE 41 | Rare Earths Price Forecasts – Antimony Oxide |
| 42 | SLIDE 42 | Rare Earths Price Forecasts – Arsenic Oxide |
| 43 | SLIDE 43 | Rare Earths Price Forecasts – Selenium Oxide |
| 44 | SLIDE 44 | Rare Earths Price Forecasts – Tellurium Oxide |
| 45 | SLIDE 45 | Rare Earths Price Forecasts – Bismuth Oxide |
| 46 | SLIDE 46 | Rare Earths Price Forecasts – Manganese Oxide |
| 47 | SLIDE 47 | Rare Earths Price Forecasts – Zinc Oxide |
| 48 | SLIDE 48 | Rare Earths Price Forecasts – Cadmium Oxide |
| 49 | SLIDE 49 | Rare Earths Price Forecasts – Mercury Oxide |
| 50 | SLIDE 50 | Rare Earths Price Forecasts – Silver Oxide |
| 51 | SLIDE 51 | Rare Earths Price Forecasts – Gold Oxide |
| 52 | SLIDE 52 | Rare Earths Price Forecasts – Platinum Oxide |
| 53 | SLIDE 53 | Rare Earths Price Forecasts – Palladium Oxide |
| 54 | SLIDE 54 | Rare Earths Price Forecasts – Rhodium Oxide |
| 55 | SLIDE 55 | Rare Earths Price Forecasts – Iridium Oxide |
| 56 | SLIDE 56 | Rare Earths Price Forecasts – Osmium Oxide |
| 57 | SLIDE 57 | Rare Earths Price Forecasts – Ruthenium Oxide |
| 58 | SLIDE 58 | Rare Earths Price Forecasts – Cobalt Oxide |
| 59 | SLIDE 59 | Rare Earths Price Forecasts – Nickel Oxide |
| 60 | SLIDE 60 | Rare Earths Price Forecasts – Copper Oxide |
| 61 | SLIDE 61 | Rare Earths Price Forecasts – Iron Oxide |
| 62 | SLIDE 62 | Rare Earths Price Forecasts – Steel |
| 63 | SLIDE 63 | Rare Earths Price Forecasts – Aluminum |
| 64 | SLIDE 64 | Rare Earths Price Forecasts – Magnesium |
| 65 | SLIDE 65 | Rare Earths Price Forecasts – Titanium |
| 66 | SLIDE 66 | Rare Earths Price Forecasts – Zirconium |
| 67 | SLIDE 67 | Rare Earths Price Forecasts – Niobium |
| 68 | SLIDE 68 | Rare Earths Price Forecasts – Molybdenum |
| 69 | SLIDE 69 | Rare Earths Price Forecasts – Vanadium |
| 70 | SLIDE 70 | Rare Earths Price Forecasts – Chromium |
| 71 | SLIDE 71 | Rare Earths Price Forecasts – Manganese |
| 72 | SLIDE 72 | Rare Earths Price Forecasts – Silicon |
| 73 | SLIDE 73 | Rare Earths Price Forecasts – Boron |
| 74 | SLIDE 74 | Rare Earths Price Forecasts – Nitrogen |
| 75 | SLIDE 75 | Rare Earths Price Forecasts – Oxygen |
| 76 | SLIDE 76 | Rare Earths Price Forecasts – Fluorine |
| 77 | SLIDE 77 | Rare Earths Price Forecasts – Chlorine |
| 78 | SLIDE 78 | Rare Earths Price Forecasts – Sulfur |
| 79 | SLIDE 79 | Rare Earths Price Forecasts – Selenium |
| 80 | SLIDE 80 | Rare Earths Price Forecasts – Tellurium |
| 81 | SLIDE 81 | Rare Earths Price Forecasts – Bismuth |
| 82 | SLIDE 82 | Rare Earths Price Forecasts – Antimony |
| 83 | SLIDE 83 | Rare Earths Price Forecasts – Arsenic |
| 84 | SLIDE 84 | Rare Earths Price Forecasts – Manganese |
| 85 | SLIDE 85 | Rare Earths Price Forecasts – Zinc |
| 86 | SLIDE 86 | Rare Earths Price Forecasts – Cadmium |
| 87 | SLIDE 87 | Rare Earths Price Forecasts – Mercury |
| 88 | SLIDE 88 | Rare Earths Price Forecasts – Silver |
| 89 | SLIDE 89 | Rare Earths Price Forecasts – Gold |
| 90 | SLIDE 90 | Rare Earths Price Forecasts – Platinum |
| 91 | SLIDE 91 | Rare Earths Price Forecasts – Palladium |
| 92 | SLIDE 92 | Rare Earths Price Forecasts – Rhodium |
| 93 | SLIDE 93 | Rare Earths Price Forecasts – Iridium |
| 94 | SLIDE 94 | Rare Earths Price Forecasts – Osmium |
| 95 | SLIDE 95 | Rare Earths Price Forecasts – Ruthenium |
| 96 | SLIDE 96 | Rare Earths Price Forecasts – Cobalt |
| 97 | SLIDE 97 | Rare Earths Price Forecasts – Nickel |
| 98 | SLIDE 98 | Rare Earths Price Forecasts – Copper |
| 99 | SLIDE 99 | Rare Earths Price Forecasts – Iron |
| 100 | SLIDE 100 | Rare Earths Price Forecasts – Steel |

Metals consulting services update – Tungsten

Argus Tungsten Monthly Outlook

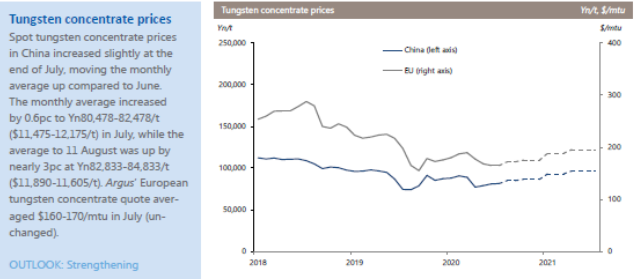


Outlook

The month ahead
Monthly average tungsten prices were generally flat in July, although spot prices were rising at the end of the month. The outlook for the month ahead is for a rise in spot prices, but any rises will be limited by a lack of spot demand.

The next 3-6 months
In the medium term, tungsten prices may improve slowly, depending on the possibility of second waves of Covid-19 and renewed lockdowns.

12 months forward
Market fundamentals and cost curve pressure should come more into play in the longer term, while the recovery in economies following the Covid-19 outbreak will dictate the direction of prices.



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Tungsten Analytics

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| | | |
|----|--------------------|--|
| 14 | SLIDE 11 | Chinese RE operating rates by region, 2020 |
| 15 | SLIDE 12 | Annual Chinese exports of rare earths, 2016-20 |
| 16 | SLIDES 13, 14 & 15 | Rare earths imports, 2016-20 |
| 17 | SLIDE 16 | REO prices 2014-20 |
| 18 | SLIDE 18 | 10-Year electric vehicle sales forecast |
| 19 | SLIDE 19 | Regional variation in YTD EV sales |
| 20 | SLIDE 20 | 10-Year electric vehicle sales forecast by geography |
| 21 | SLIDE 22 | Energy demand in 2020 vs 2019 |
| 22 | SLIDE 23 | Forecast global energy demand, 2010-30 |
| 23 | SLIDE 24 | Offshore wind capacity additions, 2005-2022 |
| 24 | SLIDE 26 | Rare earth supply to 2030 (R REO) |
| 25 | SLIDE 27 | Rare earth demand to 2030 |
| 26 | SLIDE 28 | REO price forecast, 2018-30 |
| 27 | SLIDE 30 | Rare Earths Price Forecasts – Cerium Oxide |
| 28 | SLIDE 31 | Rare Earths Price Forecasts – Lanthanum Oxide |
| 29 | SLIDE 32 | Rare Earths Price Forecasts – Neodymium Oxide |
| 30 | SLIDE 33 | Rare Earths Price Forecasts – Praseodymium Oxide |
| 31 | SLIDE 34 | Rare Earths Price Forecasts – Dysprosium Oxide |
| 32 | SLIDE 35 | Rare Earths Price Forecasts – Gadolinium Oxide |
| 33 | SLIDE 36 | Rare Earths Price Forecasts – Europium Oxide |
| 34 | SLIDE 37 | Rare Earths Price Forecasts – Terbium Oxide |
| 35 | SLIDE 38 | Rare Earths Price Forecasts – Samarium Oxide |

Metals

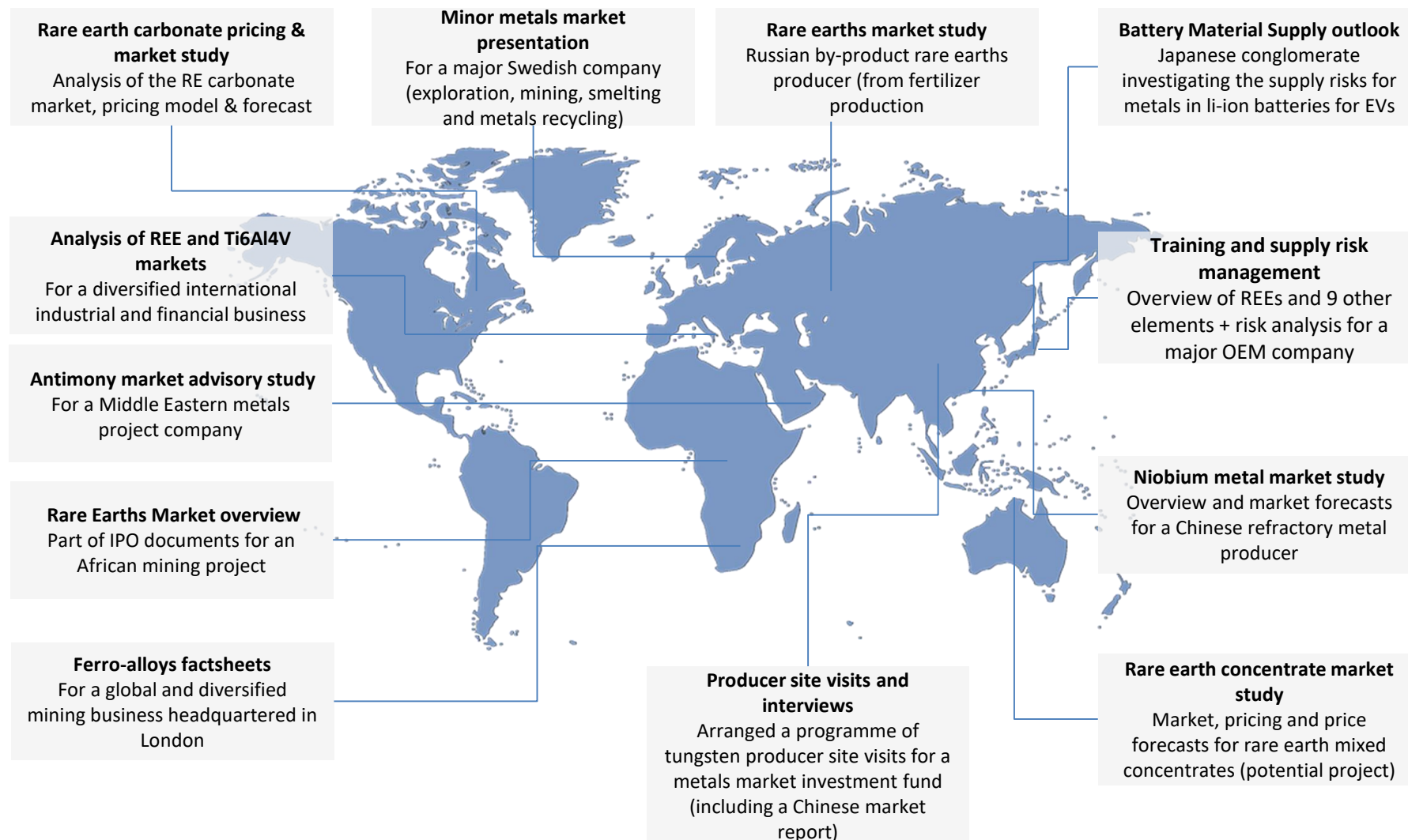
Capabilities

- **Metals price forecasting** – Forecast prices 10-15 years ahead – published information for rare earths, tungsten and cobalt (other battery materials to follow). Plus single client price forecasting
- **Market landscape** – Comprehensive analysis of metals end-use markets and applications, with long-term forecasts for demand (e.g. transport model, rechargeable battery outlook)
- **Supply outlook/new sources** – Detailed project trackers and long-term supply forecasts for a number of metals
- **Technology assessment** – Investigation of technological changes and market impacts (e.g. changing battery technologies)

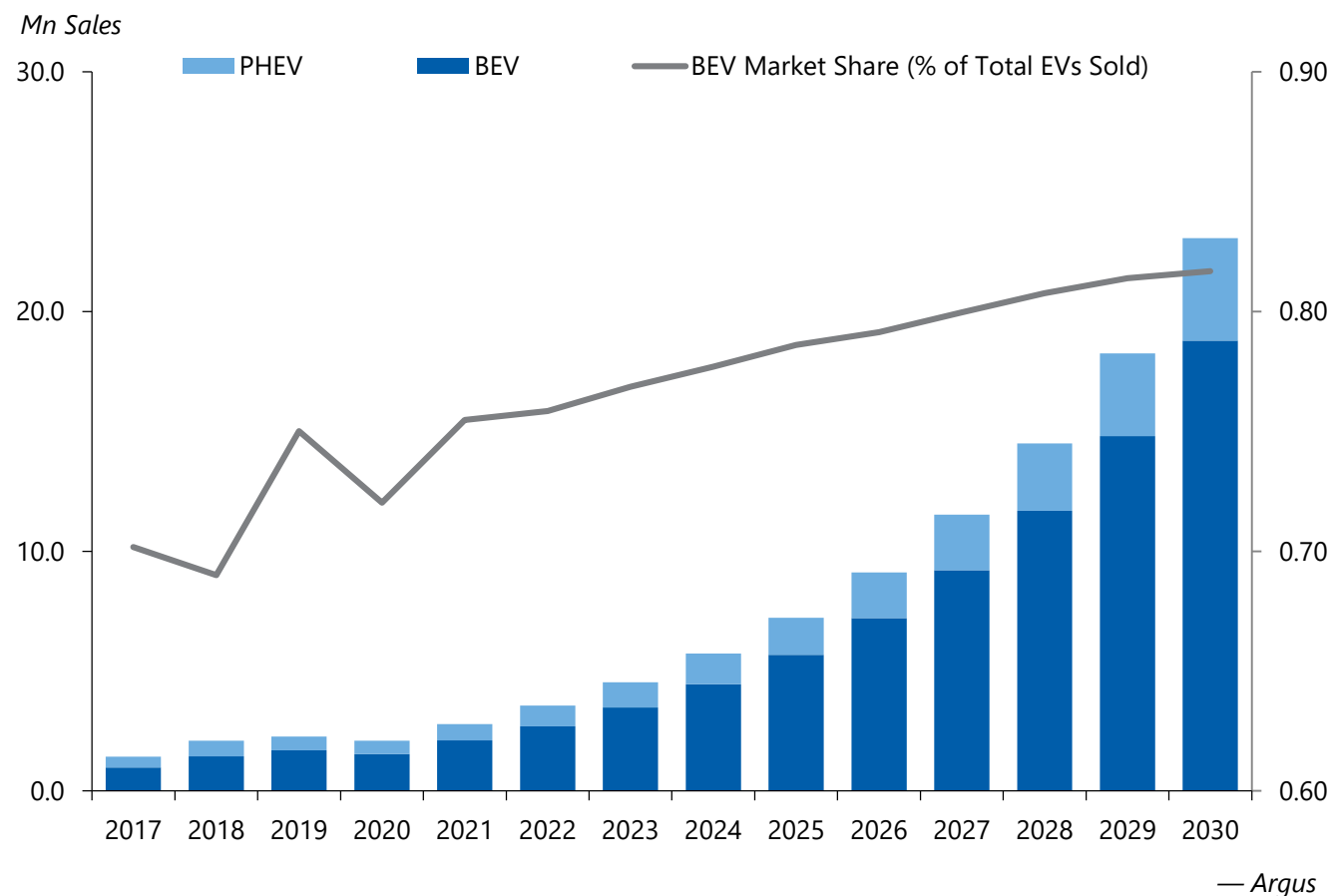
Example Projects

- **Rare earth carbonate market and pricing study**– Analysis of the market for rare earth carbonates, building a model for RE carbonate pricing and price forecast to 2030
- **Rare earth concentrate market study** – Market, pricing and price forecasts for RE concentrates
- **Training and supply risk management** – Overview of REEs and 9 other elements + risk analysis for a major OEM company
- **Antimony market impact & advisory study** – Understanding the effect of new capacity on global supply-demand balance, as well as future antimony pricing & potential hedging mechanisms

Our global metals project experiences



Electric vehicle sales forecast

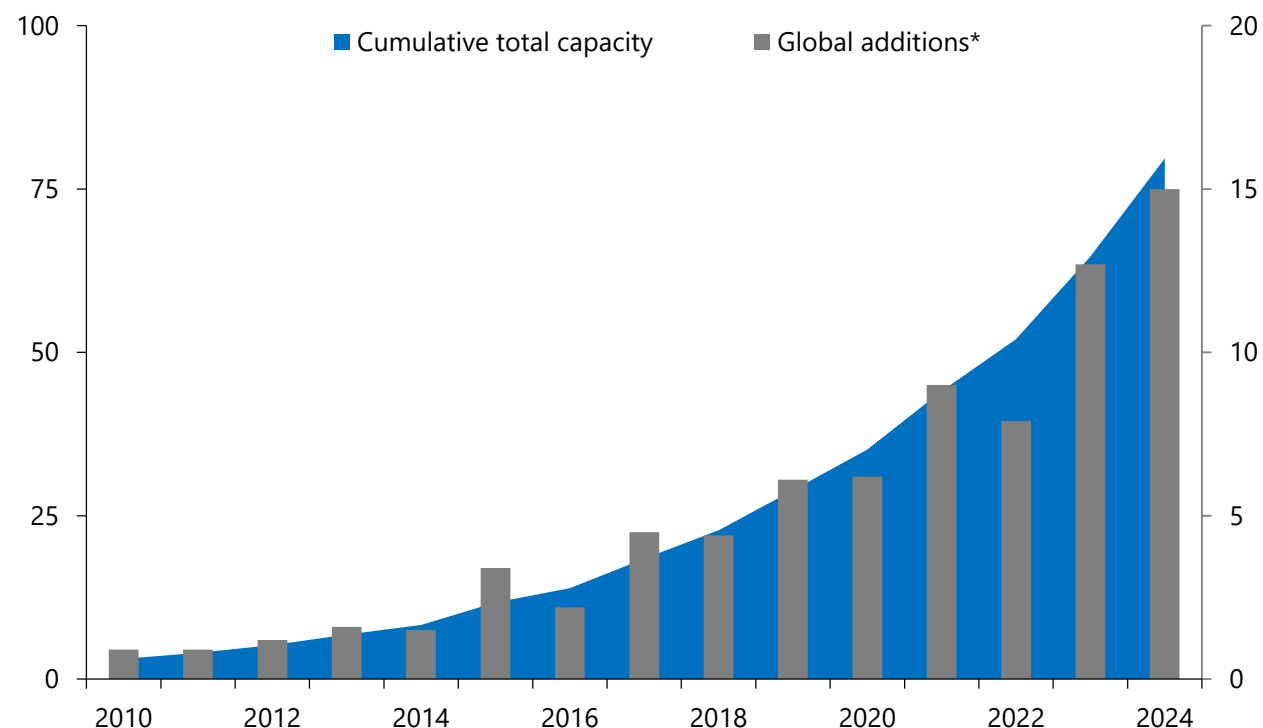


- EV sales are forecast to decline by 6pc in 2020, from 2.26mn units sold in 2019 to 2.13mn in 2020, with BEV sales falling 9pc and PHEV sales only decreasing 1pc primarily due to relatively strong European demand
- Argus forecasts total EV sales of 7.2mn in 2025, which includes 5.7mn BEVs and 1.5mn PHEVs
- In 2030, Argus forecasts 23mn EVs sold, 19mn of which are BEVs and the remaining 4mn PHEVs
- 82pc of EVs sold globally in 2030 will be BEVs and 18pc PHEVs, increasing the average battery size per EV

Green Energy

27pc growth in 2019 – a record year

Global offshore windpower, 2010-24 (GW)



* right-hand axis

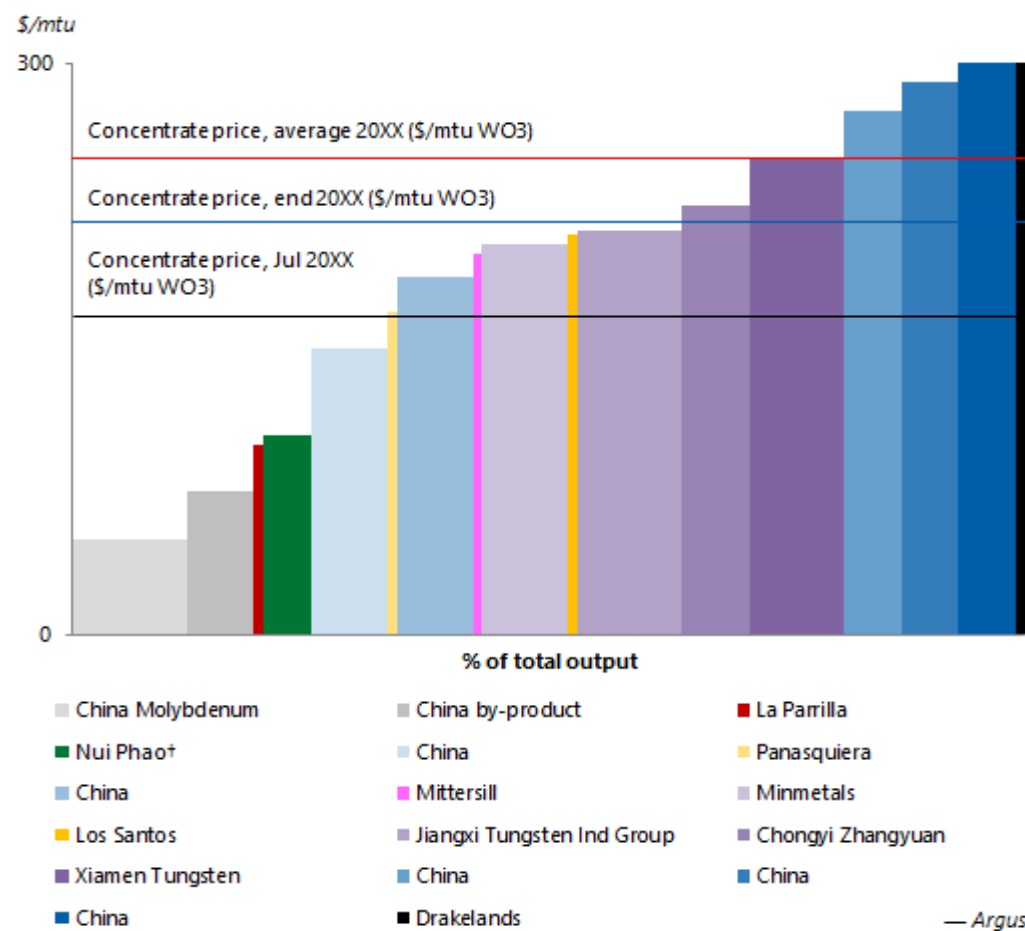
— GWEC Global Wind Report 2019

- Global offshore wind installations reached 28.9 GW by the end of 2019
- 6.1GW of offshore wind capacity went into operation in 2019 (27pc growth from 2018 - a record year)
- Largest offshore wind markets in 2019:

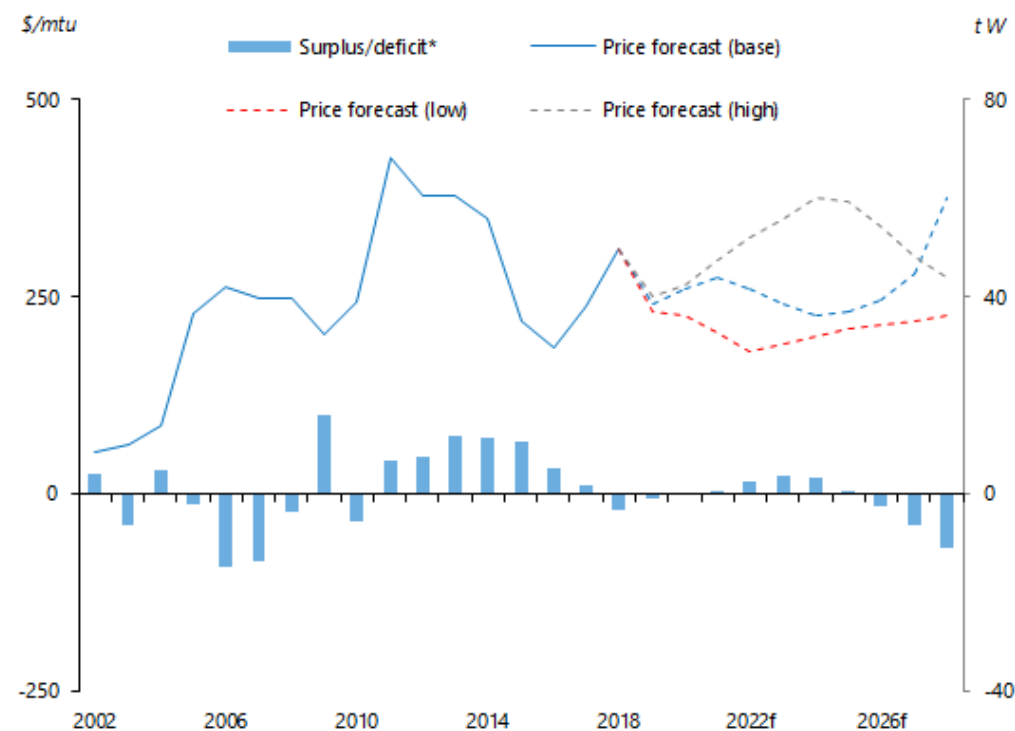
| | |
|---------|-------|
| UK | 9.7GW |
| Germany | 7.5GW |
| China | 4.9GW |
- China leads the way with a total capacity of 3.7GW currently under construction, followed by the Netherlands with 1.5GW

Tungsten charts

Production cost curve



Price forecast





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