

Coal Market Outlook for 2024

- High demand will continue in China and India,
but demand will continue to be weak in developed countries

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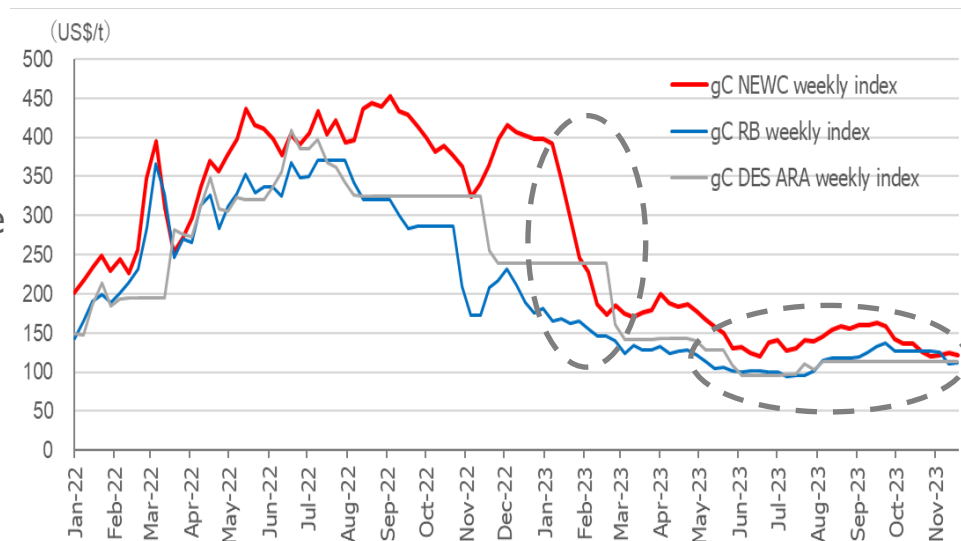
Coal Group, Energy Security Unit

Key points of this report

- ✓ Regarding the thermal coal and metallurgical coal market prices, in 2022, the prices soared after the invasion of Ukraine and reached over 400 dollars per ton, but they dropped into 2023. The Australian thermal coal export price (annual average) is about 170 dollars, and the Australian metallurgical coal export price (annual average) is about 250 dollars. In 2024, the forecast is about 130 dollars for the Australian thermal coal export price (annual average) and about 250 dollars for the Australian metallurgical coal export price (annual average).
 - ➔ Even this level is a high level over the past ten years before 2022.
- ✓ The coal import trade volume in 2023 is expected 1.47 billion tons, an increase of about 100 million tons from 1.37 billion tons in 2022. In 2024, continuing from the previous year, China and India will increase their domestic coal production as a response production to accommodate strong coal demand while the imported coal demand will remain high to supplement their domestic production. On the other hand, it is predicted that in developed countries (Japan, South Korea, and the EU) thermal coal demand, especially for power generation, is expected to remain weak, so the coal import trade volume in 2024 is forecast to increase slightly to 1.49 billion tons from 2023.
- ✓ In recent years, a couple of the coal company is re-evaluating the coal assets through the transaction of coal interests and business restructuring, and we expect this trend to continue in 2024. We expect that the impact on production will be minimal in the short term, but it is necessary for us to look at supply capabilities from a medium- to long-term viewpoint. Also, we need more attention to policy shifts in exporting country government that could affect the coal supply in the future.

Thermal coal price trends

- At the beginning of 2023, the price was high due to the price spiked previous year, but the SPOT FOB price for Australian thermal coal exports reached a level below 200 dollars/ton at the end of the first quarter due to the warm winter globally, the high coal inventories on the demand side caused by the easing of natural gas supply and demand, and other factors.
- Subsequently, over the second and third quarters, in addition to the above excess inventories, electricity consumption also stagnated due to the economic downturn, so the market prices trended at a level of about 150 dollars/ton.
- In the short term the forecast is for a warm winter, so the downward pressure on the price will grow even further and the price will fall to the 120 dollars/ton range in November. Although there is likely to be an upturn in demand as India's government has instructed an increase in imported coal by June next year amid concerns that its domestic coal supply will not meet its rising electricity demand, demand will be weak globally and production will recover on the supply side, so the sense that prices will be cheaper in the future is spreading.



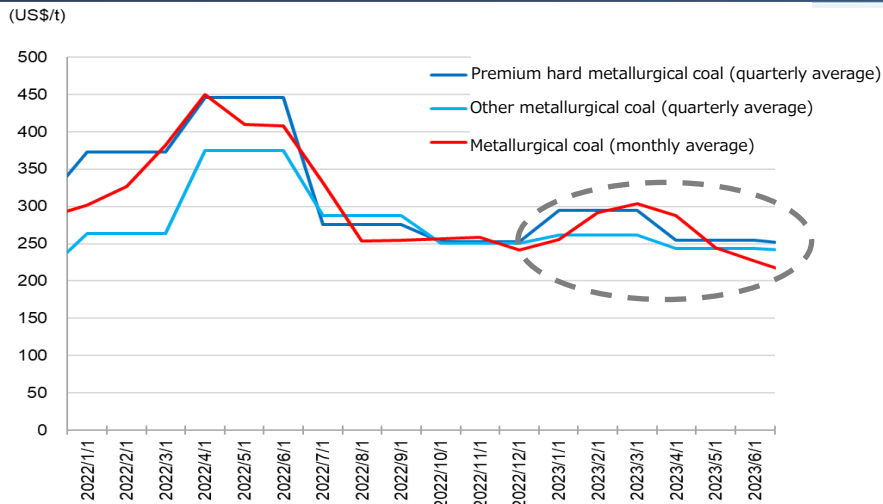
Source: globalCOAL (a division of Global Commodities Holdings Limited)

| FOB price for Australian thermal coal exports (average) | |
|---|-----------------|
| 2022 (result*) | 262 dollars/ton |
| 2023 (estimated*) | 170 |
| 2024 (forecast) | About 130 |

*1: Resources and Energy Quarterly | The data released by the Department of Industry, Science and Resources (DISR) is converted to US dollars

➡ The figure for 2024 is a forecast by the IEEJ.

Metallurgical coal price trends (Australian export prices)



FOB price for Australian metallurgical coal exports (average)

| | |
|-------------------|-----------------|
| 2022 (result*) | 322 dollars/ton |
| 2023 (estimated*) | 270 |
| 2024 (forecast) | About 250 |

*1: Resources and Energy Quarterly | The data released by the Department of Industry, Science and Resources (DISR) is converted to US dollars.

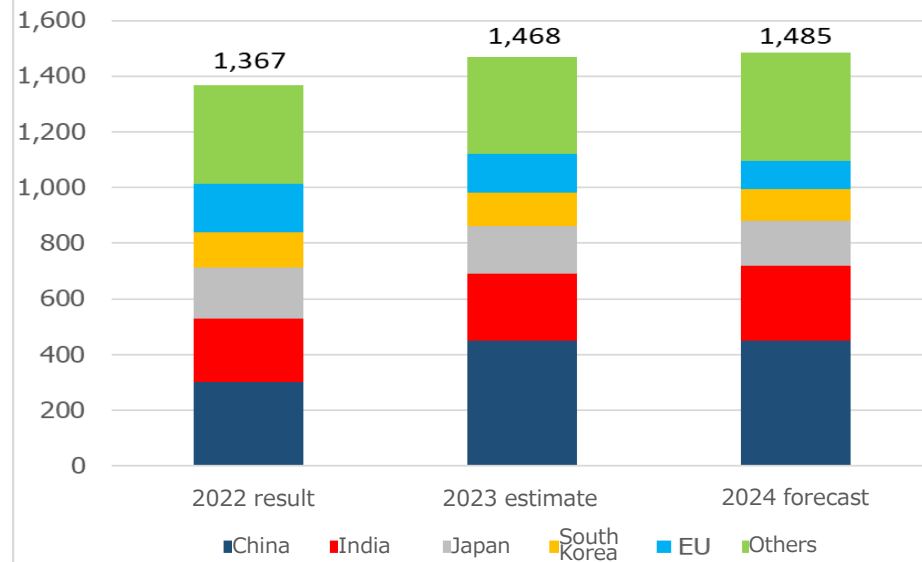
➡ The figure for 2024 is a forecast by the IEEJ.

Source: Department of Industry, Science and Resources (DISR), Australia Government, "Resources and Energy Quarterly – September 2023"

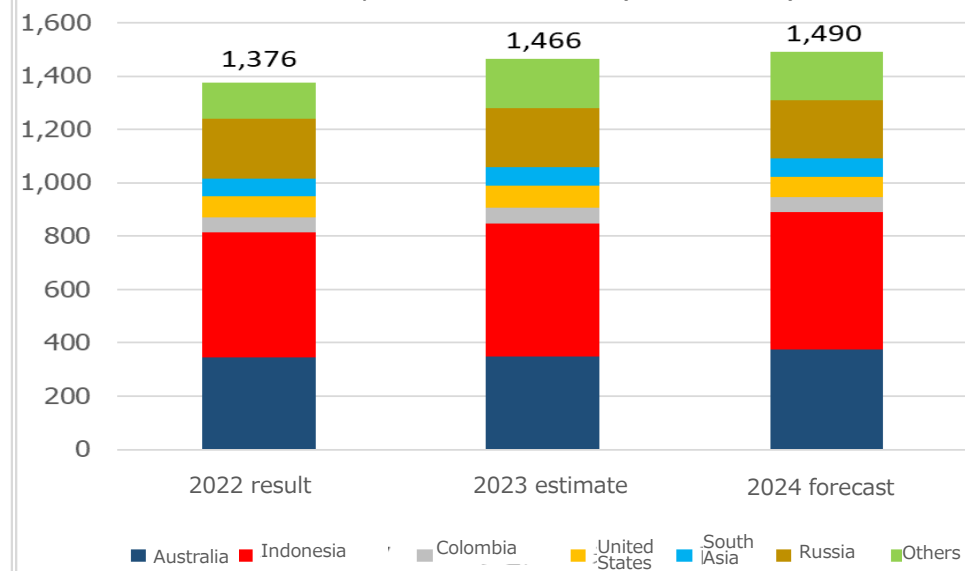
- The metallurgical coal supply eased in 2023 as the production of each mine recovered from the impact of the weather conditions in Australia, which had been one factor behind the rise in market prices in 2022.
- Global crude steel production was flat compared to the previous year at a cumulative 1,567 million tons until October 2023. India was +12% compared to the same period in the previous year, driving up this overall total. Other countries recorded flat or negative growth.
- For this reason, the metallurgical coal market price has been revised downward due to a decline in demand after last year's rise in the market price as a result of the tight supply.
- Against this background, Australian metallurgical coal export FOB prices hovered around US\$300/ton in January-March 2023, but declined to the US\$200/ton range in April-June.
- The dropped price triggered India's SPOT procurement. Then, the price has rebounded. The price recovered to a level over US\$300/ton in September and has remained at the same level since then.
- China has lifted its embargo on Australian coal import in the beginning of 2023 but the recovery of imports from Australia is slow. China's crude steel production is also in an adjusted trend.

World coal trade

Coal import trade volume (million tons)



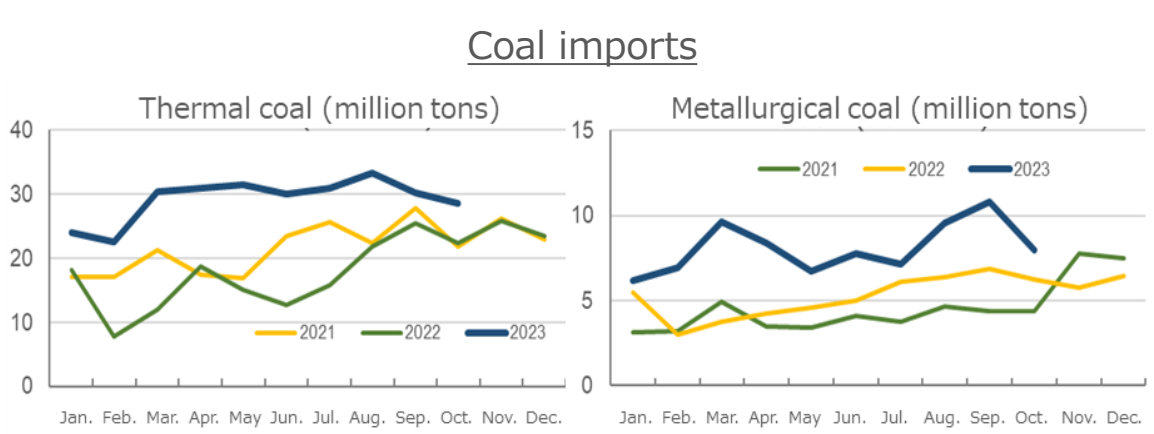
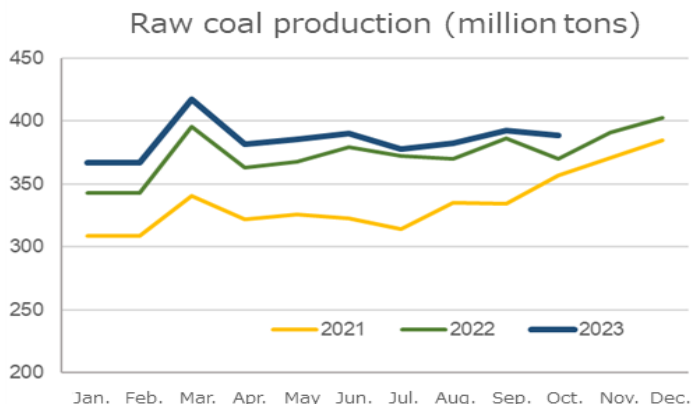
Coal export trade volume (million tons)



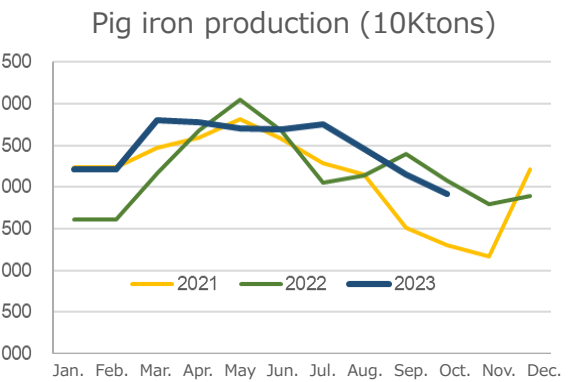
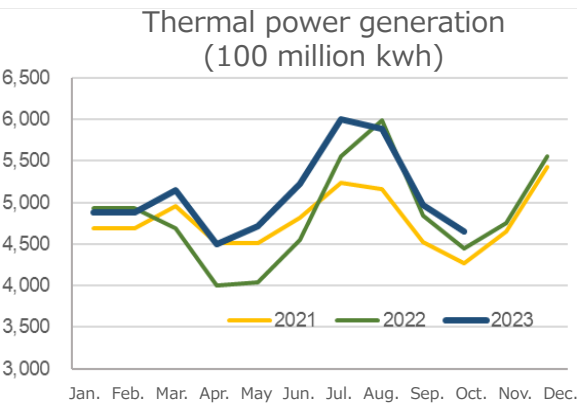
Source: Estimated by the IEEJ based on IEA Coal 2023, Coal Market Update July 2023, and the customs data of each country

- Imports of the developed countries (Japan, South Korea, and the EU) decreased but imports were boosted overall by the increase of the imports of China and India. It is forecast that the decrease and increase will be balanced in 2024 and subsequently imports will decrease.
- Total exports were driven up by Indonesia. In Australia, production has recovered after the impact of the heavy rains in 2022 but supply plateaued due to the decrease in demand from Japan and South Korea. In 2024 these two countries will continue to be the main suppliers of exports.

Status of demand countries (China)



- Raw coal production
(Jan-Oct: year-on-year change)
3,850.0(+157.7) million tons
- Imports
(Jan-Oct: year-on-year change)
Thermal coal:
292.3 (+123.0) million tons
Metallurgical coal:
81.1 (+29.5) million tons

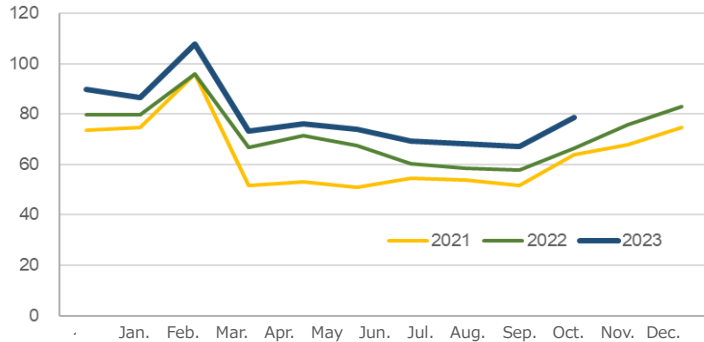


Source: National Bureau of Statistics of China, Monthly Statistics

- Domestic demand / Supply
Domestic demand was strong, primarily for power generation. From September onward, cumulative pig iron production was lower compared to the previous year.
Domestic coal supply partially decreased due to the coal mine accident. This was supplemented by imported coal.

Status of demand countries (India)

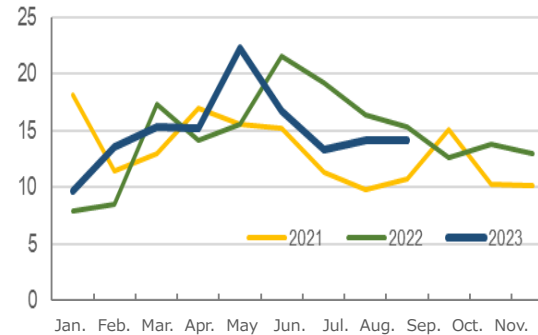
Raw coal production (million tons)



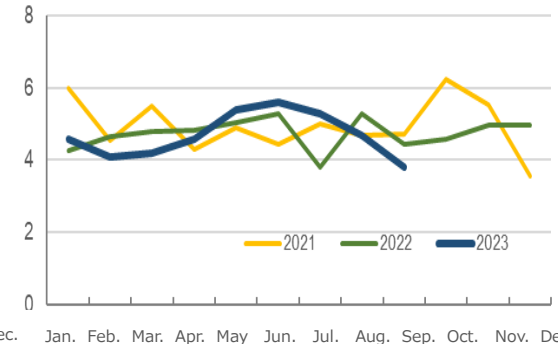
Source: Ministry of Coal. Monthly Statistics Report

Coal imports

Thermal coal (million tons)



Metallurgical coal (million tons)

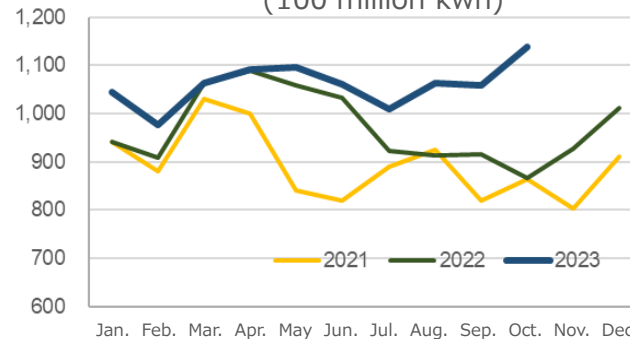


Source: Ministry of Coal. Monthly Statistics Report

- Raw coal production (million tons, Jan-Oct year-on-year change) 791.2(+87.7)

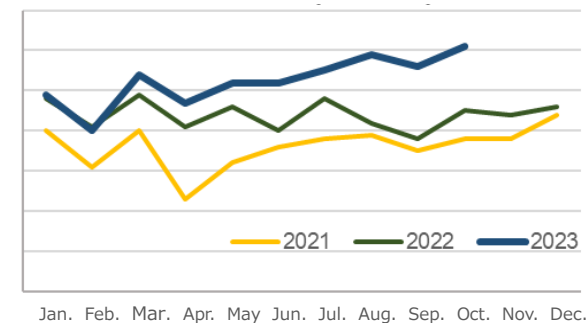
- Imports (million tons, Jan-Sep year-on-year change)
 - Thermal coal: 136.0(-1.4)
 - Metallurgical coal: 42.2(-0.2)

Coal-fired power generation (100 million kwh)



Note: The figures for October 2023 are preliminary figures
Source: CEA, Executive Summary on Power Sector

Crude steel production (10k tons)



Source: World Steel Association

- Domestic demand

Thermal coal: Increased mainly driven by thermal power generation.

Metallurgical coal: Crude steel production increased led by higher domestic demand for the products.

Status of demand countries (Japan, South Korea)

- Japan (Jan-Oct, year-on-year change, million tons)

Thermal coal: 83.5(-12.6)

Metallurgical coal: 52.2(+0.1)

- The import volume of thermal coal has declined significantly as a result of lower procurement due to high inventory levels and a decrease in coal-fired power plant operation as nuclear power plants resume operations.

- Steel production is down from the previous year, however, the impact on import volume has not been significant.

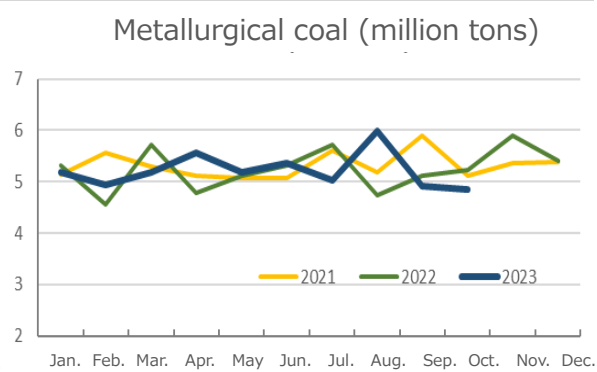
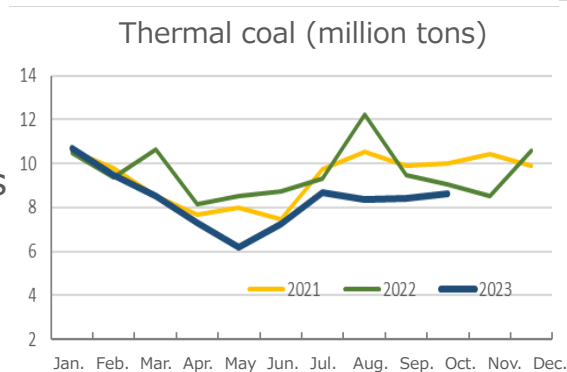
- South Korea (Jan-Oct, year-on-year changes, million tons)

Thermal coal: 70.2 (-4.7)

Metallurgical coal: 25.6(+1.3)

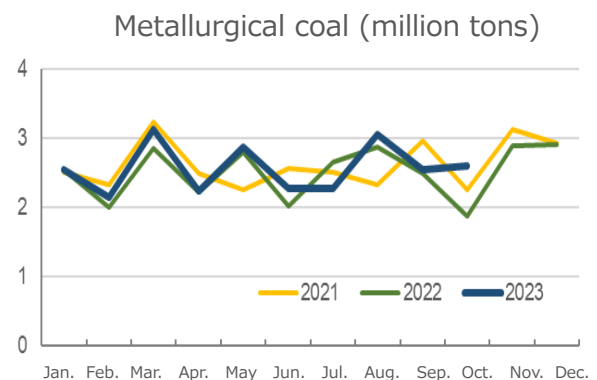
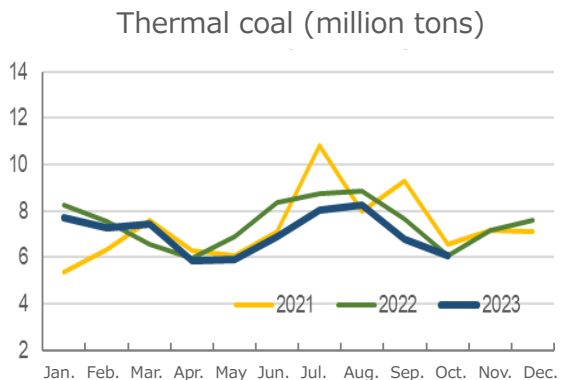
- Electricity demand was sluggish.
- Just as in Japan, steel production decreased compared to the previous year, but there was no impact on imports.

Japan's coal imports



Source: Trade Statistics of Japan

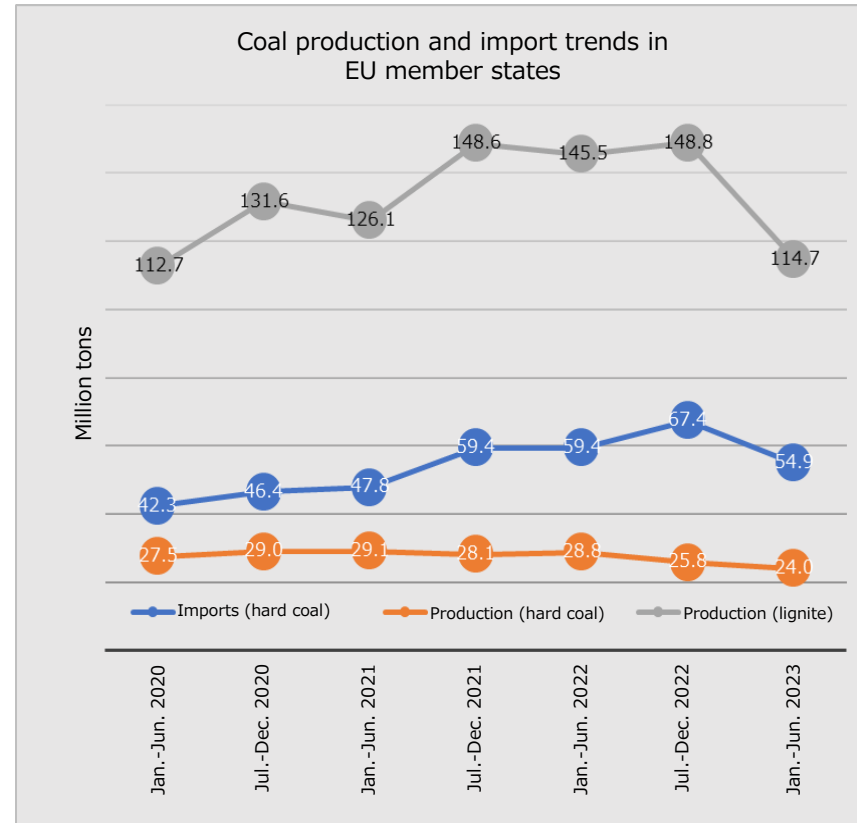
South Korea's coal imports



Source: The TEX Report, Coal Monthly Statistics

Status of demand countries (EU)

- Currently nine EU member countries have produced lignite, with production in the first half of 2023 totaling 114.7 mtpa (-21.2% year-on-year).
 - ✓ In Germany, the production volume is expected to decrease significantly to 53 million tons (-17.8% year-on-year) because of the impact of lower energy demand among energy-intensive industries.
- In the first half of 2023, the bituminous coal imported 54.9 mt (-7.5% year-on-year) and the bituminous coal produced 24.0 mt (-16.6% year-on-year).
 - ✓ The energy markets in each EU country have been chaotic due to Covid-19 and its after-effects and they have been unstable with large fluctuations in recent years because they are responding to the conflicts in Ukraine and the Middle East.
 - ✓ The Coal demand as a fuel for thermal generation has briefly increased due to concerns over gas supply caused by the invasion of Ukraine.
- At present, the dependence on coal has dropped because of the enlarged supply of LNG. In addition, the warm winter of 2022-23 and weak economic activity in 2023 have led to a decline in electricity demand and reduced coal use (see table below), and we expect this downward trend to continue.



Source: EURACOAL, "EURACOAL Market Report"

coal supply to coal-fired power generation by EU member states

| Unit: million tons | Jan.-Jun. 2022 | Jan.-Jun. 2023 | Change | |
|--------------------|----------------|----------------|--------|--------|
| Lignite | 133.0 | 102.6 | -30.4 | -22.9% |
| Bituminous coal | 41.6 | 34.2 | -7.4 | -17.8% |

Status of supply countries (Australia, Indonesia)

Australia (Jan-Oct: year-on-year changes)

Newcastle exports 116.9 (+3.6) million tons

QLD total exports 163.2(+4.5) million tons

- For Newcastle products, the shipment of thermal coal was sluggish. Although the production recovered, demand for coal in major countries (Japan and South Korea) was weak, so growth was slow.
➔ export volume was significantly lower than 2021.

- Export at NQET of thermal coal from newly developed mine is growing, primarily export to India and China.

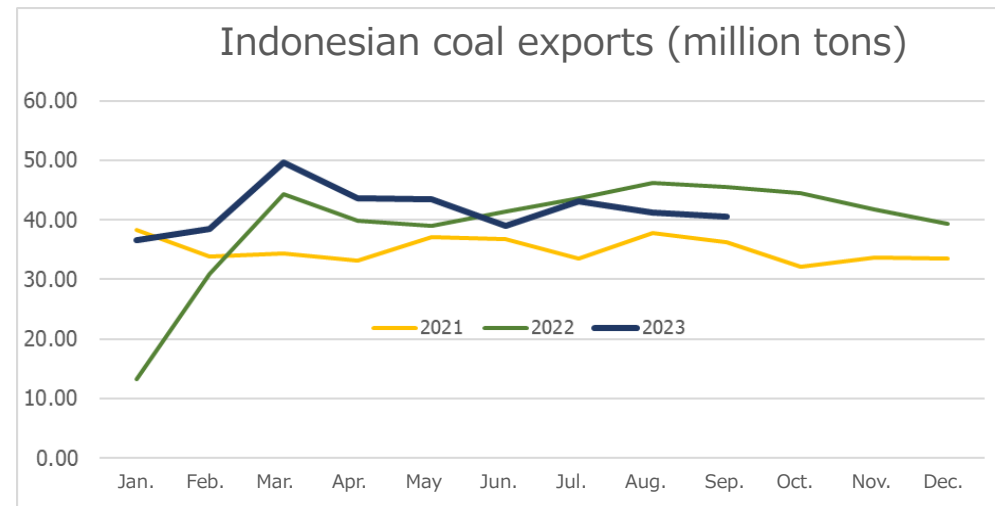
Indonesia (Jan-Sep: year-on-year change)

Total exports 375.4 (+31.3) million tons

- In 2023 exports increased significantly compared to the previous year, partly because 2022 exports were sluggish at the beginning of the year due to the suspension of export permits and weather factors.
- In particular shipments to China and India were strong.

Australian coal export trends (January-October)

| Shipping ports | Million tons | CY2021 | CY2022 | CY2023 | CY2023/ CY2022 change |
|----------------|--------------|--------|--------|--------|-----------------------------|
| Newcastle | | 131.5 | 113.3 | 116.9 | 3.6 |
| NQET | | 24.1 | 25.5 | 28.5 | 3.0 |
| Hay Point | | 38.4 | 37.6 | 32.8 | -4.8 |
| Dalrimple Bay | | 45.1 | 42.8 | 48.6 | 5.9 |
| Gladstone | | 57.3 | 51.1 | 51.3 | 0.1 |
| Brisbane | | 3.1 | 1.7 | 1.9 | 0.2 |
| QLD total | | 168.0 | 158.7 | 163.2 | 4.5 |



Note: Exports from Australia exclude Port Kembla
 Source: Australia: North Queensland Bulk Terminal, Newcastle Port, Gladstone Port, Brisbane port websites
 Indonesia: BPS (Statistics Indonesia)

Impacts in the short and medium term

1. China and India

- They are a major producer and consumer of coal. Currently, demand > production, with imports adjustment of the coal supply gap. In 2023, there was no significant impact on the trade market, helped by an increase in the receipt of Russian coal. We expect demand growth to continue for a while, however, there is a concern that the supply-demand balance in the coal trade may tighten due to increased procurement of imported coal resulting from a shortage of domestic coal supply.
- ➔ The market forecast is based on a balance between increased demand and increased domestic coal production, as it has been previously.

2. Australia

- Equity Transfers....sale of coal mining equity and restructuring by resource companies (coal mining spin-off)
- Twisting of environmental policy and coal industry policy/tax revenues by the Australian political system
 - ✓Federal: Environmental Policy Strengthening (Safeguard Mechanism)
 - ✓Development approval for off-shore gas by Federal vs Coal by State (NSW/QLD)
 - ✓How impact for the energy development with differences between Federal and State Governments?
- In addition, States care about “employment, industry development, increase royalty”... how important the coal industry for the state economy.➔Now, Royalty issue is a major concern in NSW/QLD.
- ➔ Little impact for a few years, but careful to watch for potential medium-term impact on coal supply capability by policies to achieve net-zero in 2050.

3. Indonesia

- Be careful to note the policies after the February 2024 presidential election, such as the operational trends of the domestic market obligation (DMO) giving priority to domestic supply.
- ➔ 2024 thermal coal exports are forecast to be +15 million tons compared to the previous year.