Coal Report 2022 & Coal in Net Zero Transitions

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A year of records

In 2022, coal figures are set to reach all-time highs in demand, power generation, production and prices.

* Historical data until 2020, estimates for 2021, forecast for 2022
Coal demand is likely to reach a new all-time global high in 2022.

Global coal consumption will reach a new all-time high in 2022 although growing only by 1% from 2021. Consumption will plateau afterwards through 2025.
Record coal demand is pushed by record coal power generation

Coal power generation is reaching a new high in 2022 led by strong growth in India and the EU. Coal power generation will continue to grow in India but will decline in US and EU. China will determine the global trend.
Coal and gas power generation still needs to cover residual load

Weak nuclear and high gas prices pushed up coal power generation in 2022. Renewables cover the majority of additional electricity demand but leave some limited room for coal and gas growth.

Additional global power demand and generation by source, 2021-2025

Gas price markers, 2020-2025
Coal production reaches a new all-time high and might peak in 2023

Security of supply concerns pushes coal production, mainly in China and India, to a new all-time high in 2022. Global coal production is forecast to peak in 2023. China remains stable afterwards, India continues to grow.
Coal imports by China and India are the key

The growth of EU imports will be temporary. Thermal coal trade will shrink if China and India increase production. India will increase met coal imports due to limited domestic resources.
Bans on Russian coal especially by EU fully effective in August 2022 has led to a major shift in global trade pattern.
Coal prices reached unprecedented levels in 2022

Supported by high gas prices, firm coal demand and supply issues, coal prices reached an unprecedented high in most regions and most coal grades in 2022. Thermal coal was traded above metallurgical coal for months.
Russian coal was traded at a substantial discount most of 2022 except for mid-CV coal in high demand.
Higher prices mean higher margins for producers

Despite higher costs, coal producer’s export margins skyrocketed in all major coal producing regions.

Indicative high calorific thermal coal FOB supply curve 2021 and average FOB marker prices

USD/t

Mt

Australia
Indonesia
Russia
United States
South Africa
Colombia
Others

Newcastle (6 000 kcal/kg, FOB, 2022)
Newcastle (6 000 kcal/kg, FOB, 2021)
Newcastle (6 000 kcal/kg, FOB, 2020)

Despite higher costs, coal producer’s export margins skyrocketed in all major coal producing regions.
Global coal emissions have been essentially stable for a decade. Despite conflicting narratives of renaissance or decline, coal has been stable for nearly a decade and 2022 is likely to see a modest increase, while 95% of global coal consumption is in countries with net zero emissions commitments.
Coal use is concentrated and its dependency multifaceted

Country scores on the IEA’s Coal Transitions Exposure Index and total energy supply from coal

Coal plays important roles in the economies, local development, and energy systems of a number of countries, with Indonesia, Mongolia, China, Viet Nam, India, South Africa and Botswana standing out.
Local communities in major producing countries can be highly dependent on coal mining, but countries accounting for just 4% of global coal workers have comprehensive just transition policies in place.
The world’s young coal assets pose a major climate risk

If nothing is done, emissions from existing coal assets in the electricity and industry sectors would by themselves tip the world across the 1.5 °C limit.
Scaling up renewables is critical to net-zero transitions

Transitioning away from unabated coal-fired power requires alternative sources of electricity to be scaled up rapidly, replacing electricity generation as well as capacity and system services.
Emissions reduction in industry depends on innovation

Reductions in CO₂ emissions from heavy industries in the NZE Scenario, 2021-2050

More than half of emissions reductions depend on technologies currently at prototype and demonstration phase. Advanced economies are at the forefront of their development but most of the deployment is in emerging economies.
Innovative financial approaches can accelerate coal transitions

There is over USD 1 trillion worth of capital yet to recover from today’s coal plants
International and public financial support for coal transitions is vital

Cumulative investment in coal transitions in emerging and developing economies outside China (2022-2030)

Billion USD (2021)

Integrated and ambitious national transition strategies, including the Just Energy Transition Partnerships, help to identify the necessary policy and investment priorities, and mobilise much-needed international financial support.
Key findings

• Global coal demand is in a plateau for a decade, at the highest historical levels

• 2022 was a record year for coal. Estimates suggest that global demand, global power generation, production and prices have reached all-time high

• In the current state of things, the plateau will continue through 2025, to decline afterwards.

• Coal is the largest source of CO2. A steep decline in coal emissions is critical to our climate goals: if nothing is done, emissions from existing coal assets – on their own – would tip the world over the 1.5 °C limit

• Coal transitions are not just about coal: they are about deploying the clean alternatives and infrastructure that can provide the same energy services affordably and securely

• Different aspects of coal emissions need different solutions: faster deployment of renewables is needed for the power sector, while faster innovation is needed for industry, especially steel and cement