

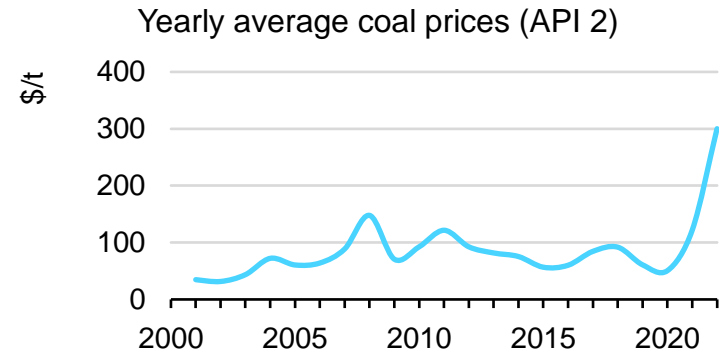
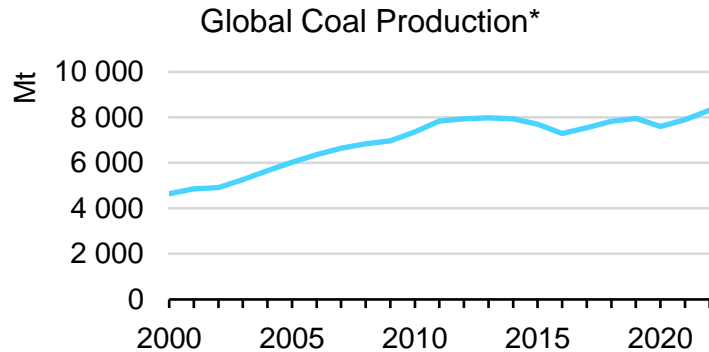
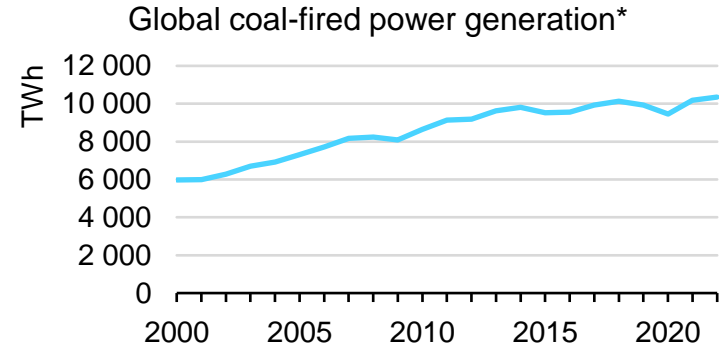
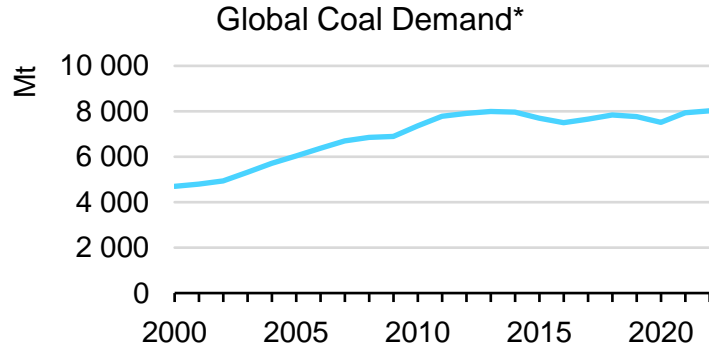


# Coal Report 2022 & Coal in Net Zero Transitions

Carlos Fernández Alvarez, (Acting) Head of Gas, Coal and Power Markets Division

Brussels, 23 January 2023

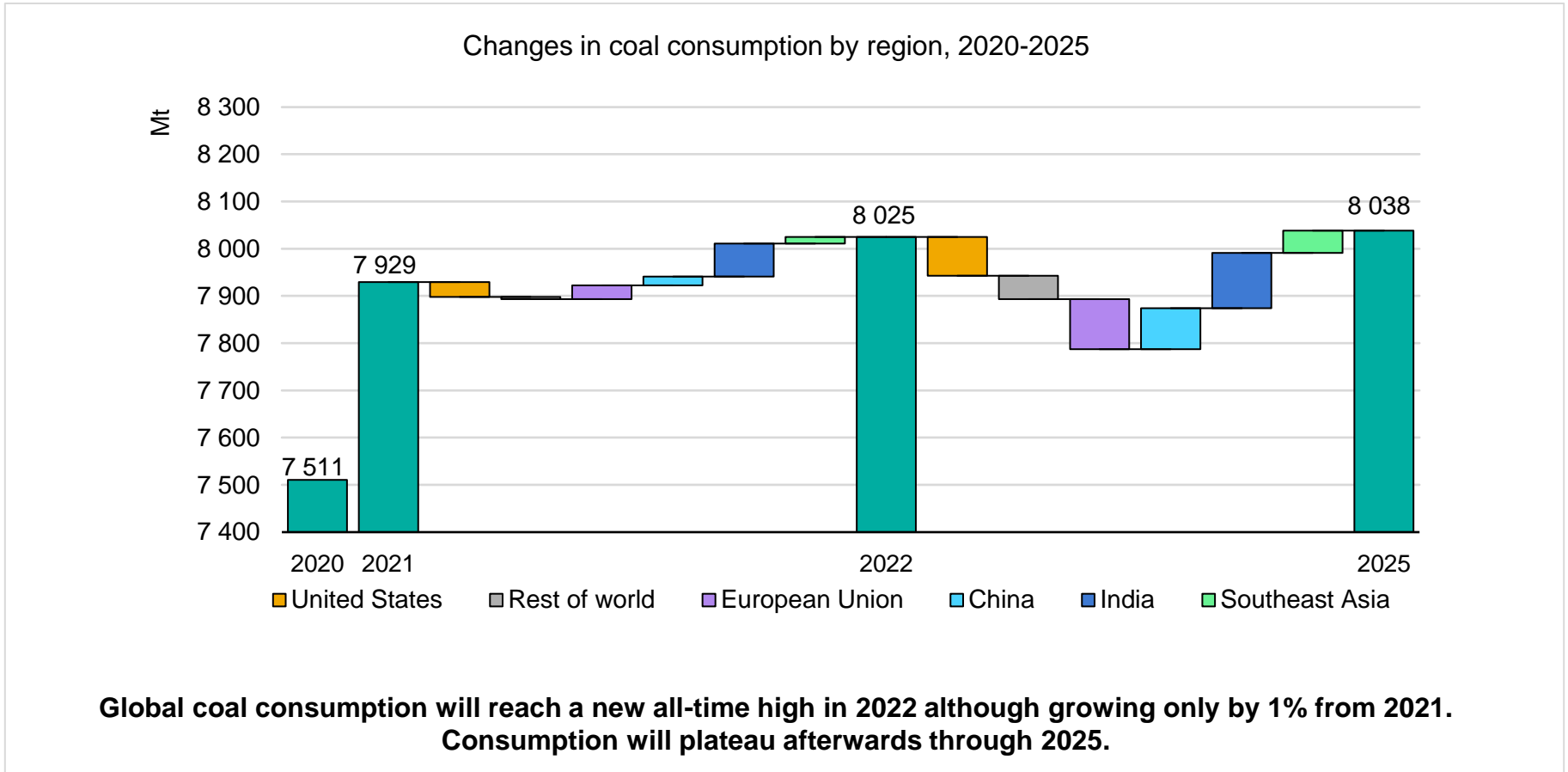
# A year of records



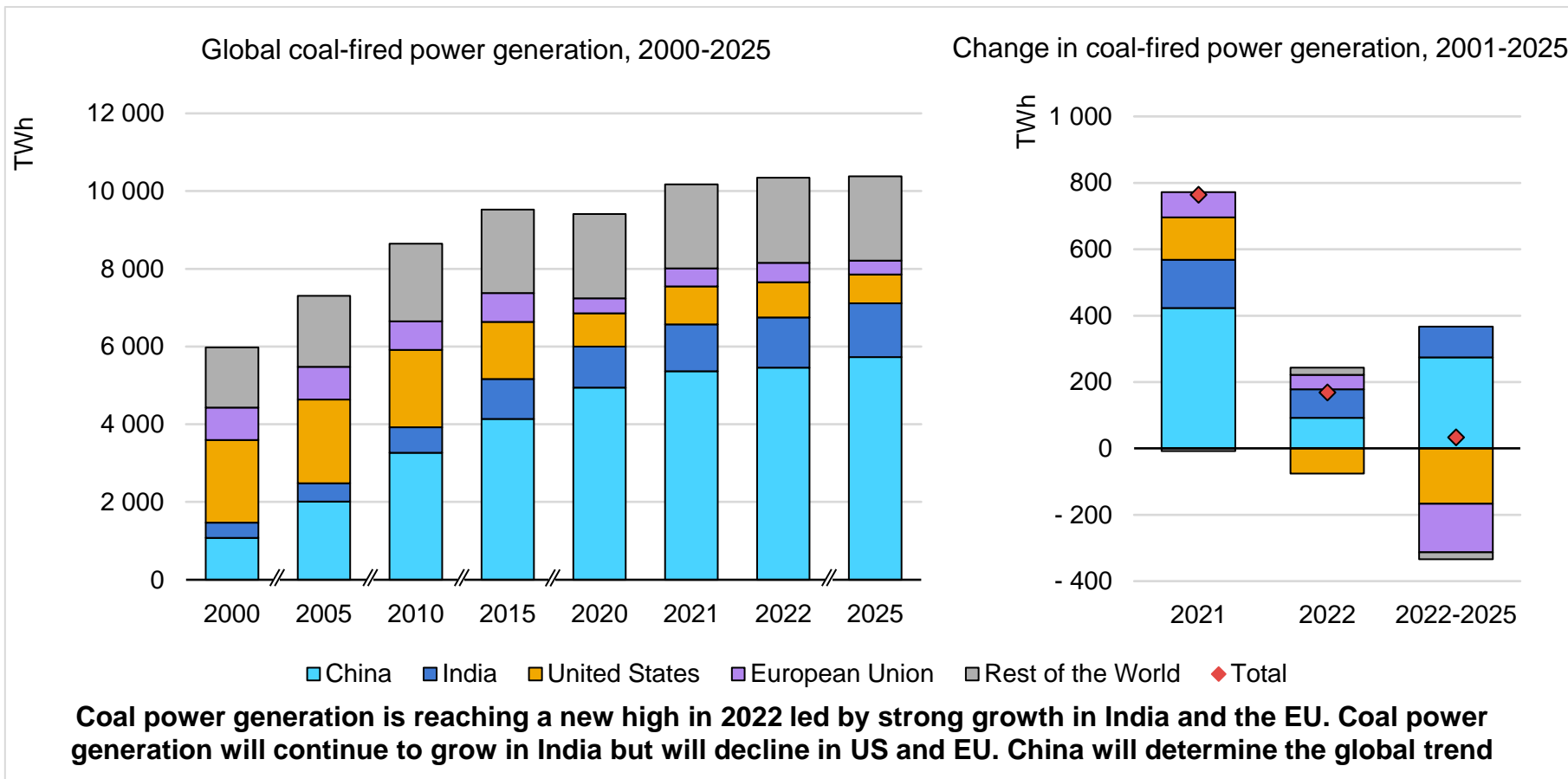
**In 2022, coal figures are set to reach all-time highs in demand, power generation, production and prices.**

\* Historical data until 2020, estimates for 2021, forecast for 2022

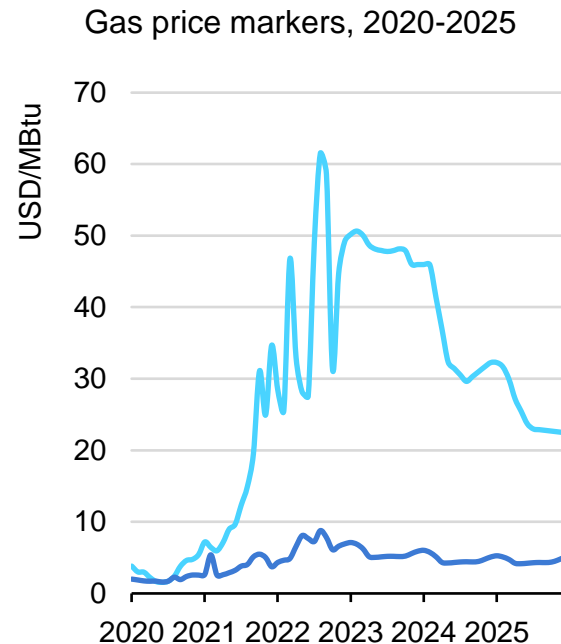
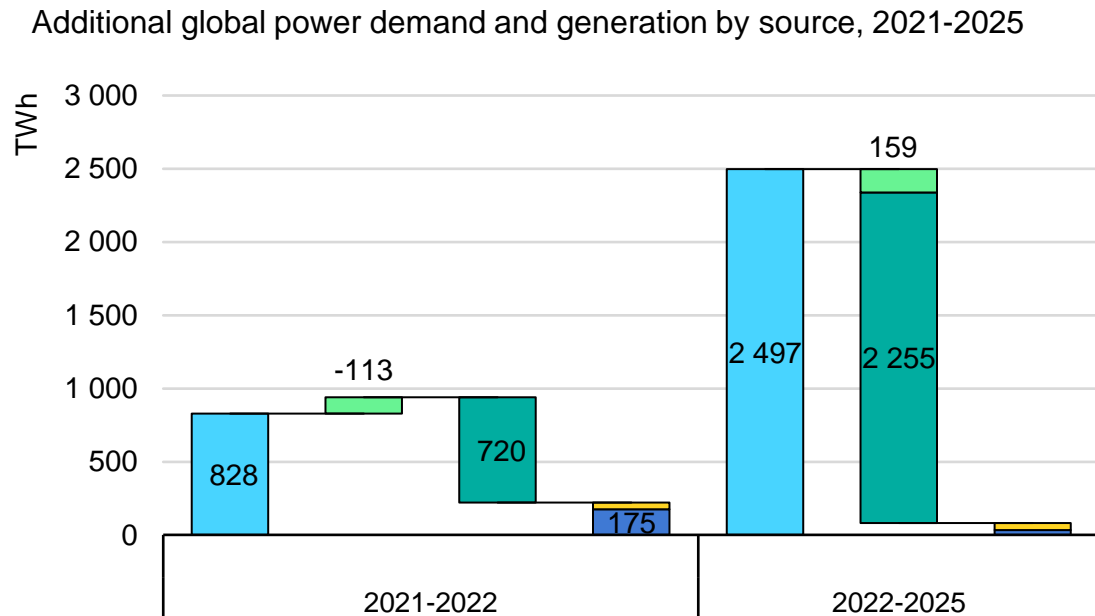
# Coal demand is likely to reach a new all-time global high in 2022



# Record coal demand is pushed by record coal power generation



# Coal and gas power generation still needs to cover residual load

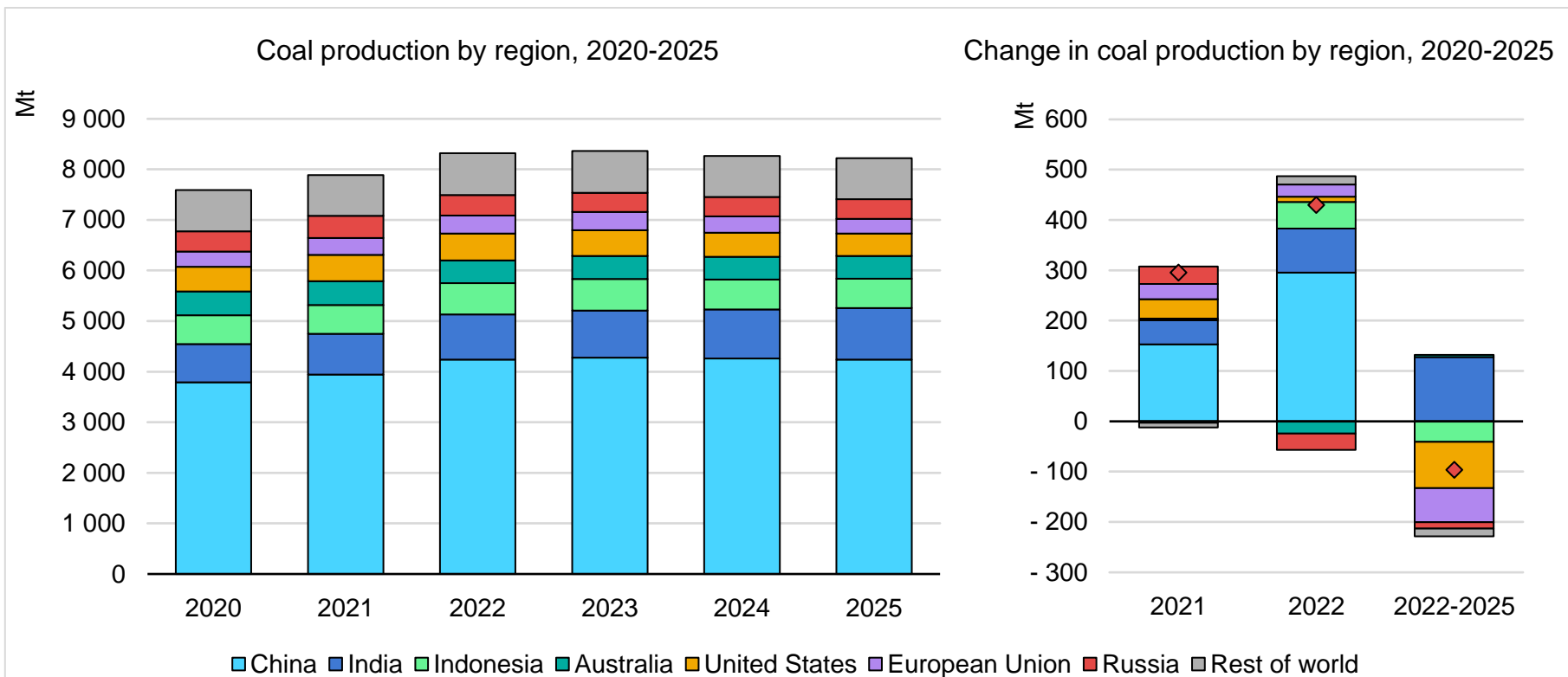


■ Additional power demand ■ Renewables ■ Nuclear and others ■ Coal ■ Gas

— TTF — Henry Hub

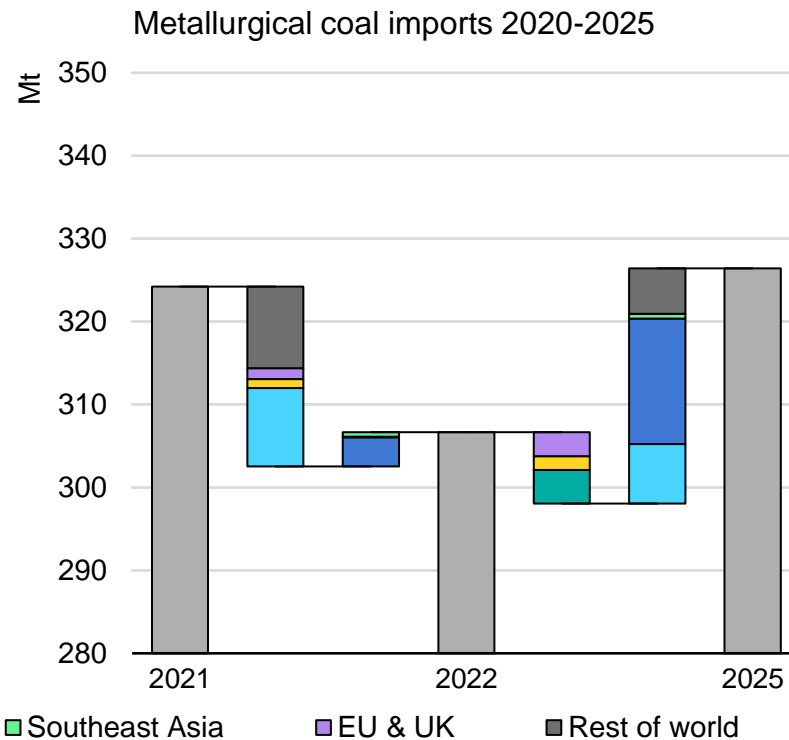
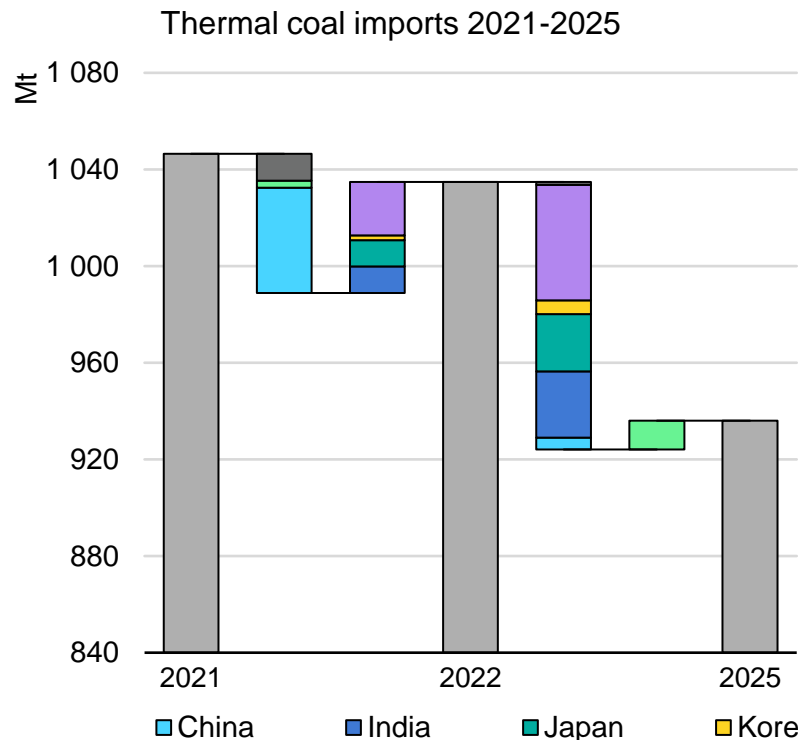
**Weak nuclear and high gas prices pushed up coal power generation in 2022. Renewables cover the majority of additional electricity demand but leave some limited room for coal and gas growth.**

# 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.**

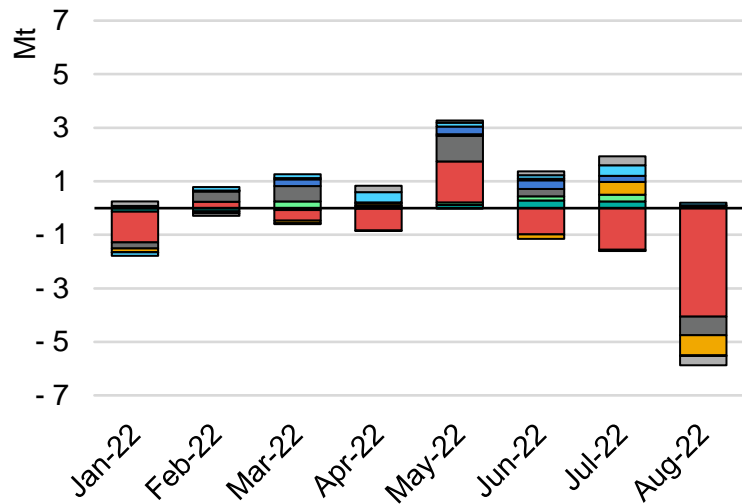
# Coal imports by China and India are the key



**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.**

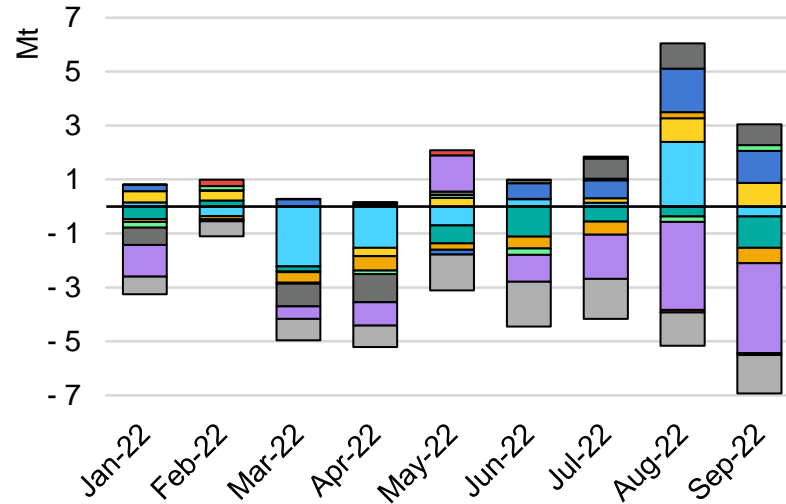
# Global supply chains reoriented in 2022

Monthly y-o-y change of thermal coal imports of EU & UK, 2022



- Australia
- Indonesia
- Russia
- Colombia
- United States
- South Africa
- Kazakhstan
- Other

Monthly y-o-y change of thermal coal imports from Russia by destination, 2022

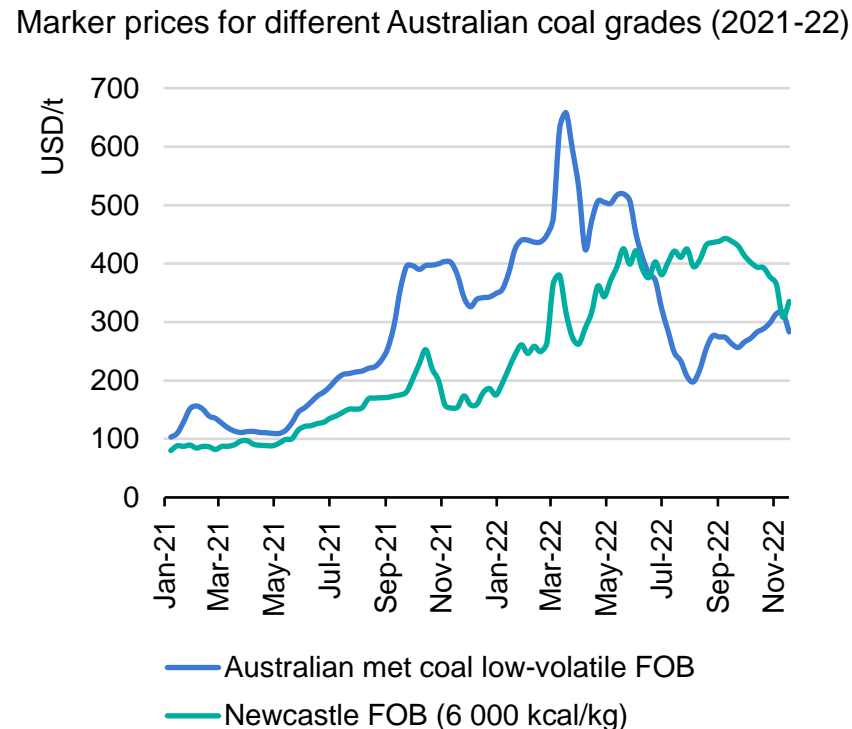
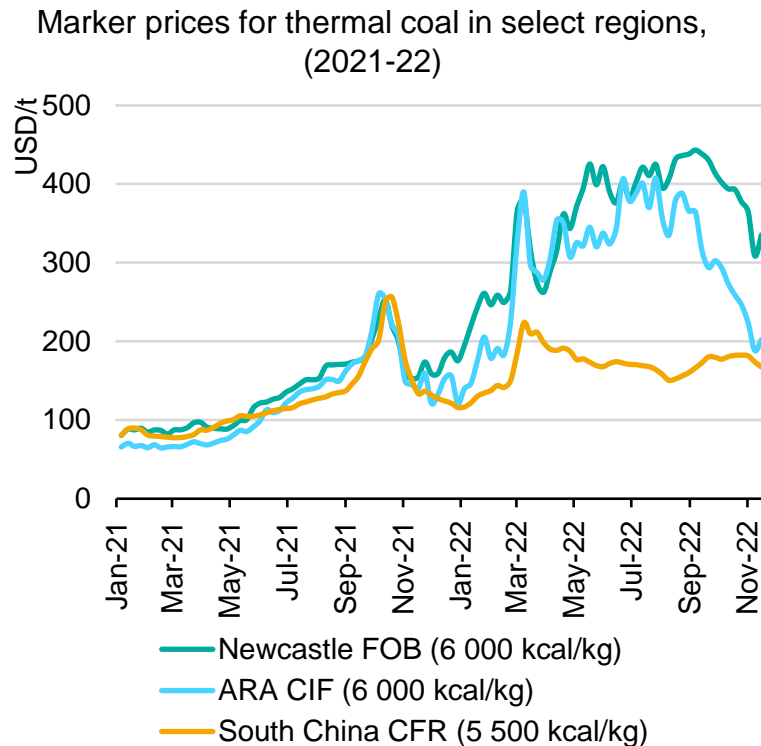


- China
- Japan
- Korea
- Chinese Taipei
- India
- Southeast Asia
- Türkiye
- European Union
- United Kingdom
- Other

**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

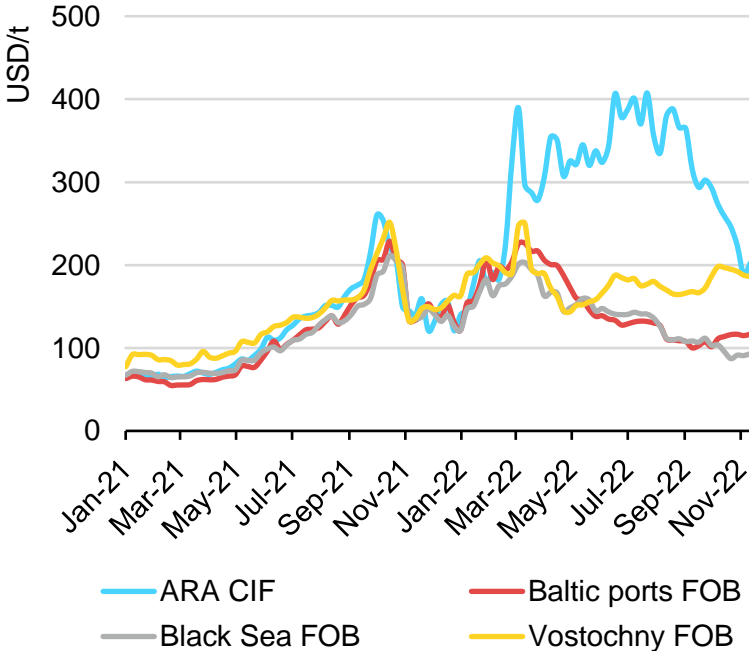


**Supported by high gas prices, firm coal demand and supply issues, coal prices reached an unprecedented high in most regions and most coal grades in 2022. Thermal coal was traded above metallurgical coal for months.**

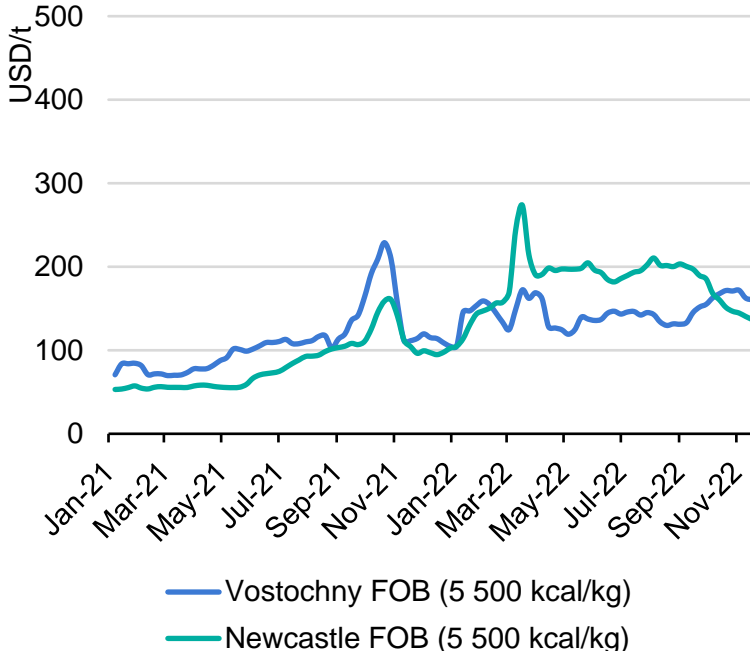
# Russian coal was traded at a substantial discount most of 2022



High CV thermal coal price markers, (EU, Russia, 2021-22)



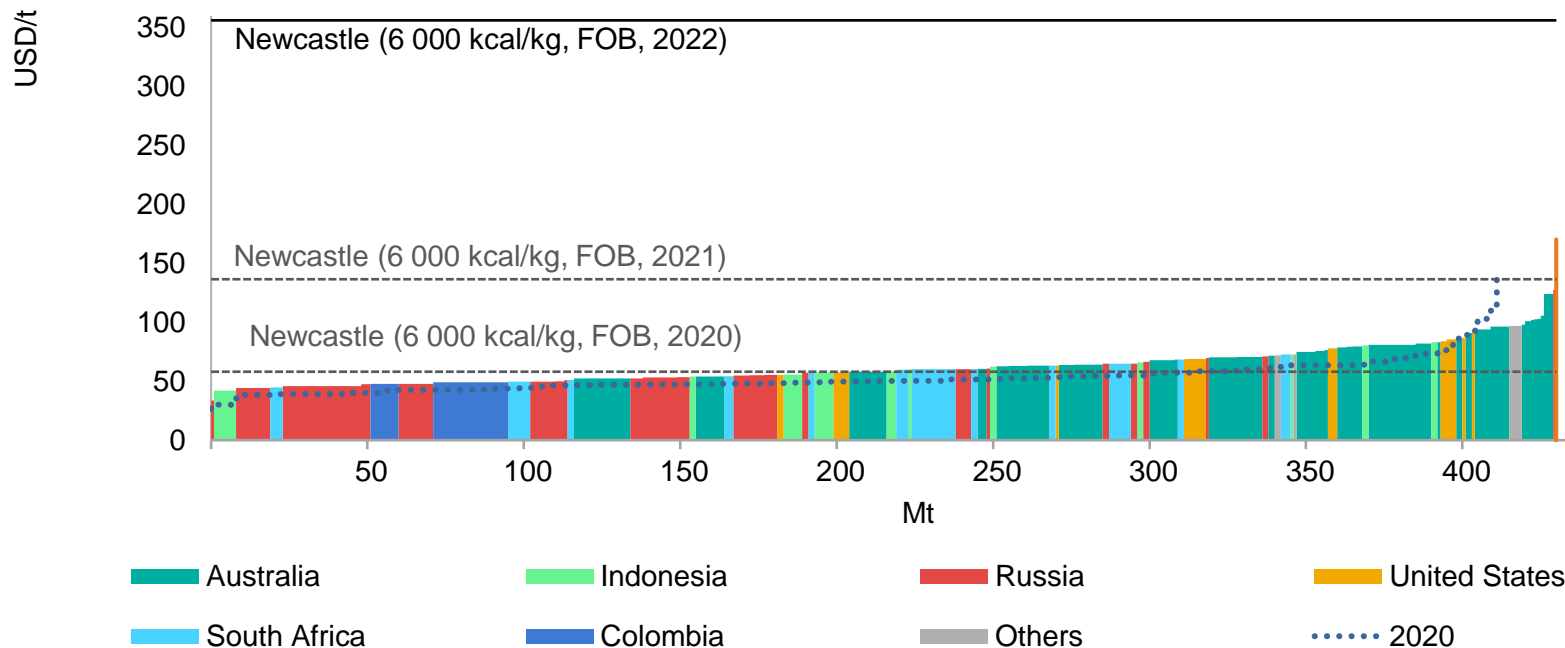
Marker prices for different origins (low CV-coal, 2021-22)



**Russian coal was traded at a discount most of 2022 except for mid-CV coal in high demand.**

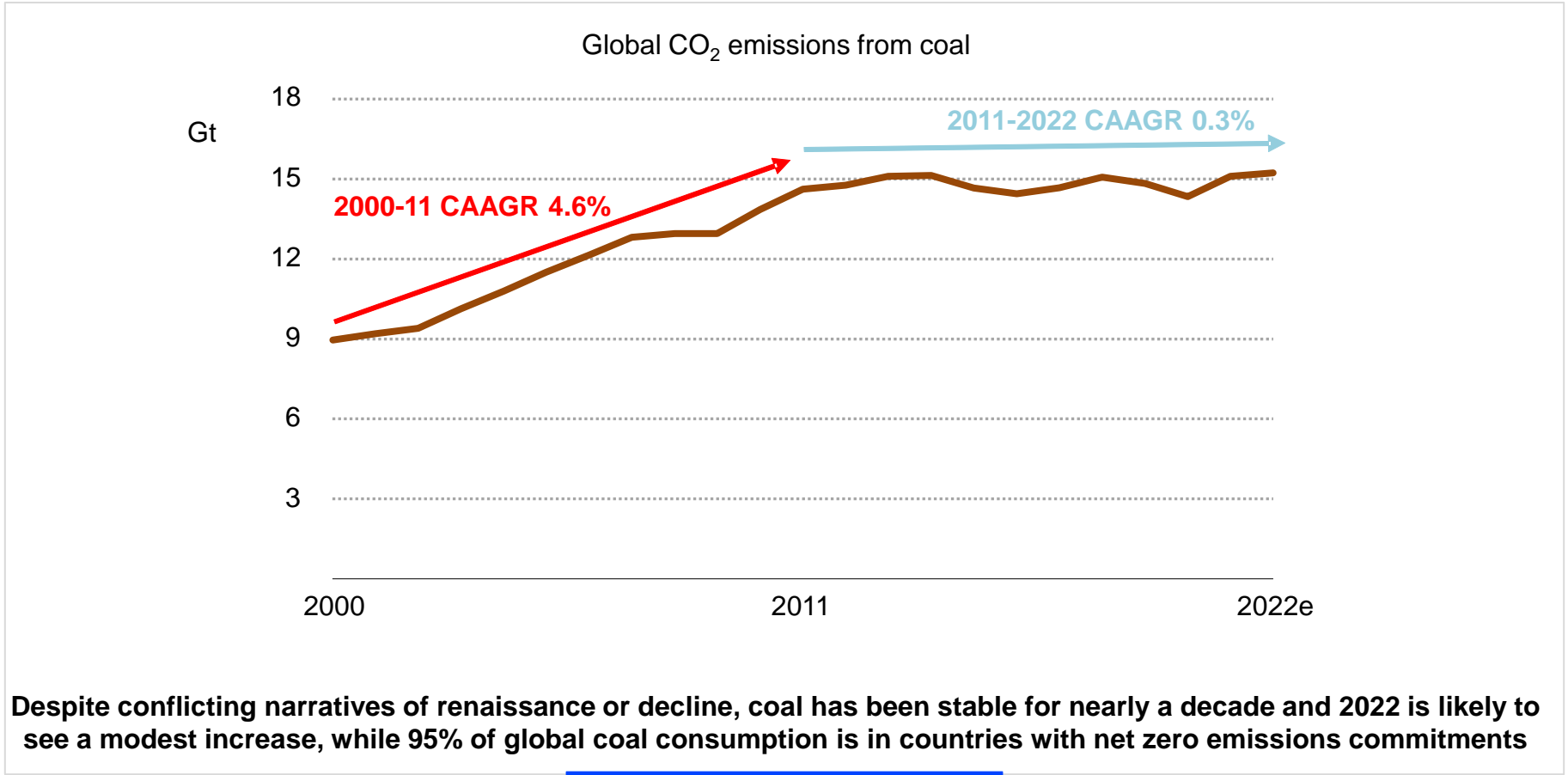
# Higher prices mean higher margins for producers

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



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

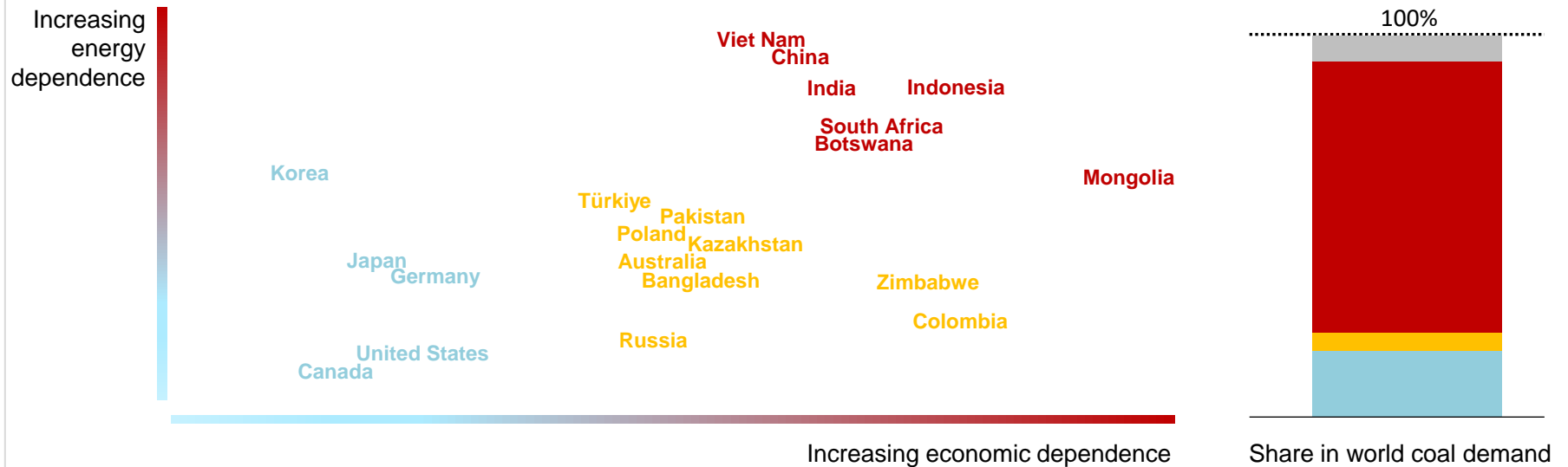
# Global coal emissions have been essentially stable for a decade



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

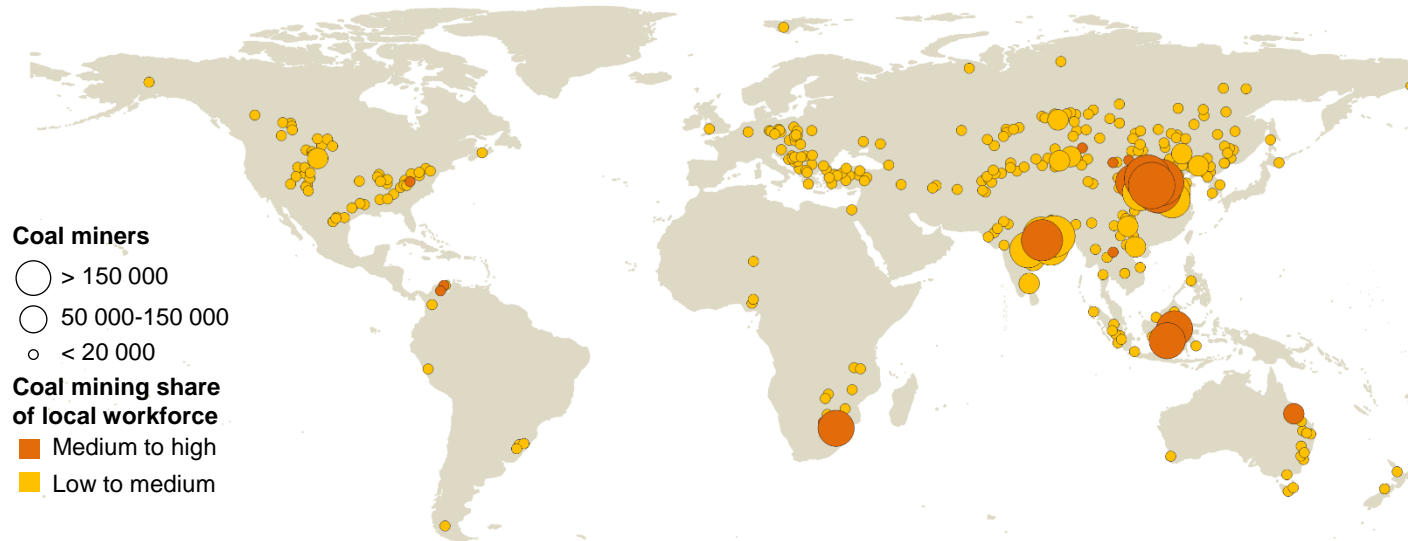
Country scores on the IEA's Coal Transitions Exposure Index and total energy supply from coal



**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**

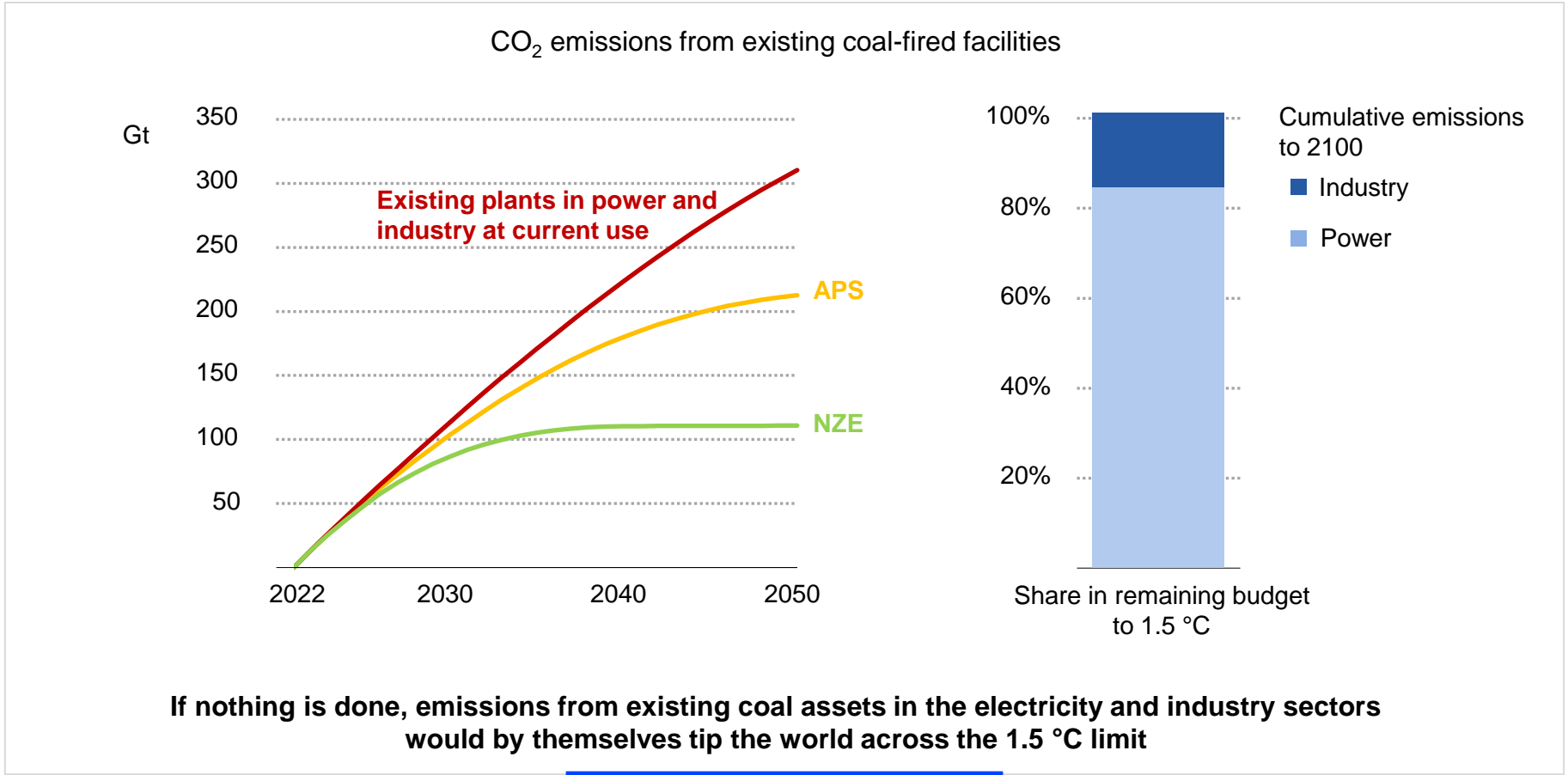
# Coal transitions require dedicated just transition policies

Distribution of coal miners globally and coal miner shares of local employment



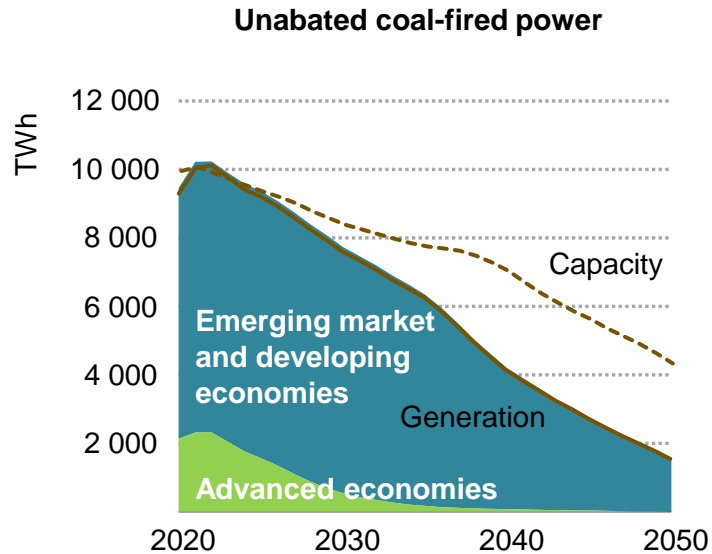
**Local communities in major producing countries can be highly dependent on coal mining, but countries accounting for just 4% of global coal workers have comprehensive just transition policies in place**

# The world's young coal assets pose a major climate risk

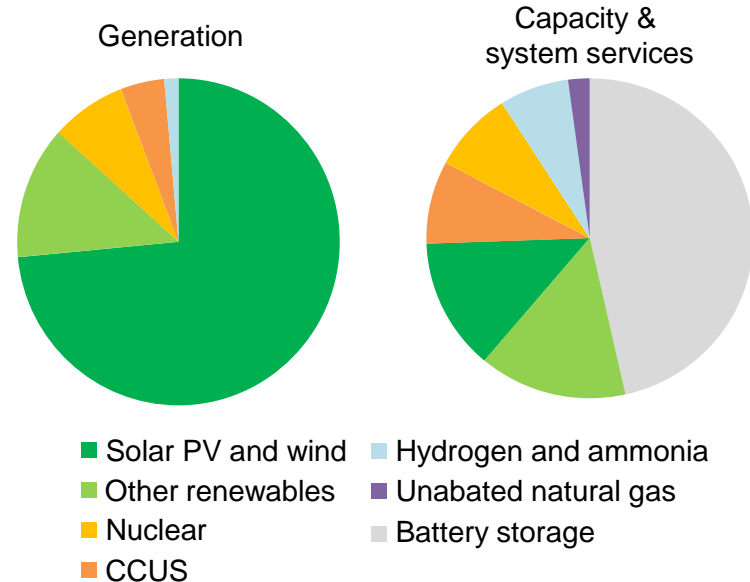


# Scaling up renewables is critical to net-zero transitions

Replacing unabated coal in the Announced Pledged Scenario



### Replacements

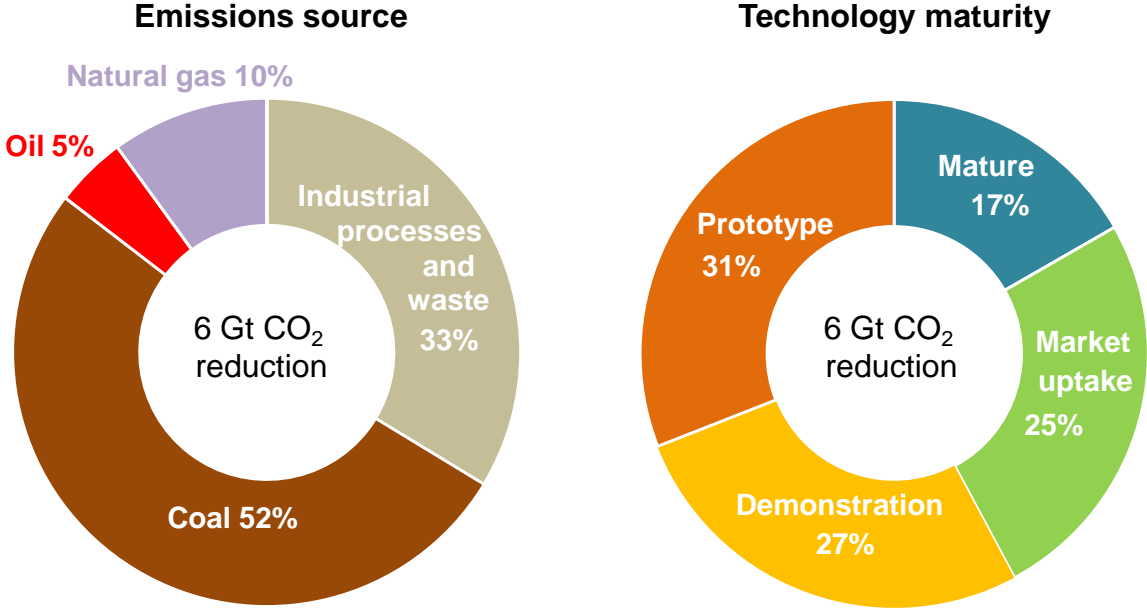


**Transitioning away from unabated coal-fired power requires alternative sources of electricity to be scaled up rapidly, replacing electricity generation as well as capacity and system services**



# Emissions reduction in industry depends on innovation

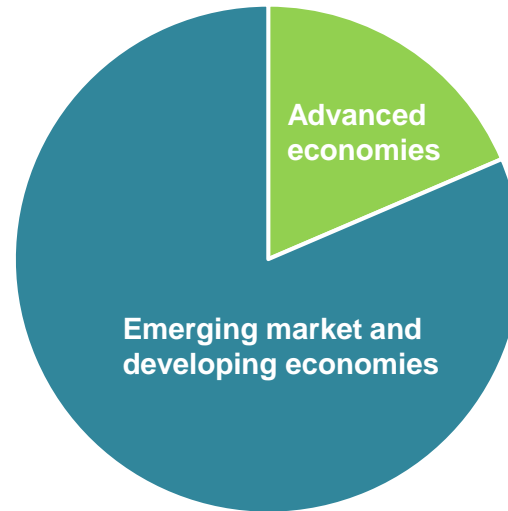
Reductions in CO<sub>2</sub> emissions from heavy industries in the NZE Scenario, 2021-2050



**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**

Coal plants with remaining capital to recover

1 Trillion USD

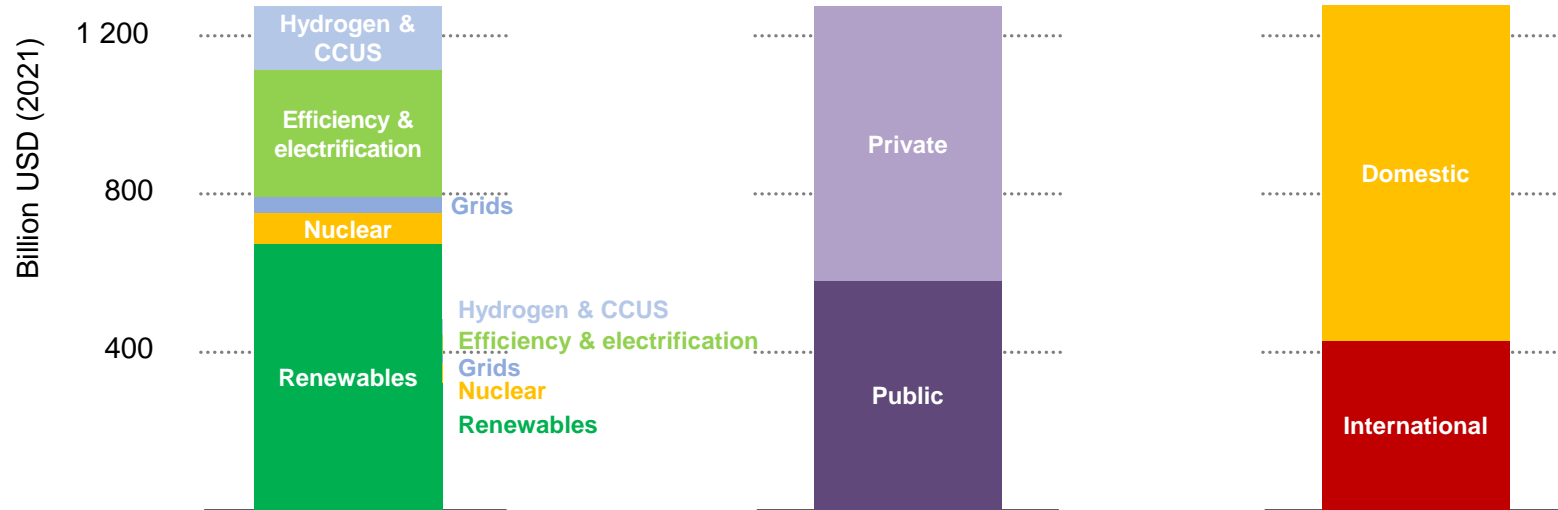


**There is over USD 1 trillion worth of capital yet to recover from today's coal plants**

# International and public financial support for coal transitions is vital

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

Net Zero Emissions by 2050 Scenario



**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**

- 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 CO<sub>2</sub>. 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

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