

## APERC COAL REPORT 2023

### Introduction

This coal report is part of the APERC fossil fuel reports series, published annually to provide materials for discussion at the APEC Expert Group on Clean Fossil Energy in particular and the APEC Energy Working Group as a whole.

The APERC Coal Report 2023 covers significant aspects of the coal sector: coal consumption, production, trade, prices, and coal-related policies amid turbulent years in the global coal market. This report introduces greenhouse gas emissions from the whole coal value chain for the first time. Furthermore, this year's report examines the potential for technologies to assist in decarbonising coal-based power and industrial plants, such as thermal efficiency improvement, cofiring biomass/ammonia and coal, coal gasification, and carbon capture, utilisation and storage (CCUS).

### Outline

The report includes six chapters. Chapter 1 highlights recent coal policy developments in APEC member economies and potential measures and technologies to decarbonise coal-based plants. Chapter 2 outlines recent trends in coal consumption in APEC economies, particularly in the large coal consumption economies, such as China, the United States, Japan, Russia, and Indonesia. Chapter 3 describes the recent trends in coal production in the APEC region, where there are the world's largest thermal and metallurgical coal producers. Chapter 4 outlines the recent changes in coal imports and exports, while Chapter 5 describes the recent coal spot prices. The final chapter (Chapter 6) shows the data on greenhouse gas emissions from APEC economies for the whole coal value chain, including methane and carbon dioxide emissions.

### Key findings

#### **APEC economies are increasingly committed to decarbonising their power sector.**

- Fifteen APEC economies are committed to achieving net-zero emissions or carbon neutrality targets by 2050, and China, Indonesia and Russia have pledged to attain the climate goal by 2060. Thailand is committed to reaching net zero emissions by 2065.
- Nine APEC economies signed the Global Coal to Clean Power Transition Statement at COP26, which commits to transitioning away from unabated coal power generation in the 2030s for major economies and in the 2040s globally.
- As of the end of 2023, most APEC economies committed to not building new coal-fired power plants and/or phasing down coal use.

#### **Various decarbonisation technologies could become feasible for coal-based power and industrial plants.**

- Feasible measures for reducing the carbon emissions associated with coal usage include two categories, namely: (1) applying decarbonising technologies such as thermal efficiency improvement, CCUS, and clean coal technology and (2) enacting policies to phasing down coal usage and not building new coal power plants.
- Cofiring biomass or ammonia in existing coal-fired power plants can assist in reducing CO<sub>2</sub> emissions by lowering the amount of coal input. Many APEC economies have considered introducing these measures.
- Coal gasification is an other option to transform coal into synthetic gases which can be used in various sectors. Coal gasification associated with CCUS will be a near-zero CO<sub>2</sub> emissions technology, expected to be the lowest-cost source for large-scale hydrogen production in the near and medium term.
- Depending on the future costs of CCUS technologies, CCUS could potentially reduce the opportunity costs associated with the early retirement of coal-fired power plants. More APEC economies are exploring the feasibility of installing CCUS facilities at coal-fired power plants.

#### **APEC-wide coal consumption rose slightly in 2022 but was not uniform across all economies.**

- Coal consumption in China, the world's largest coal consumer, grew by approximately 1% in 2022. It was the lowest growth in coal consumption since 2018.

- Coal consumption in Indonesia rose sharply in 2022 due to high coal demand after the rebound in economic growth following the COVID-19 pandemic, the commissioning of new coal-fired power plants, and the expansion of the nickel industry.
- In the United States, coal consumption dropped by 6.6% compared to the previous year, returning to the declining trend in coal consumption, which has been seen in the last two decades.
- Coal consumption in Russia, Korea, and Japan declined by 7%, 5.6%, and 0.2%, respectively, in 2022 relative to the previous year.

**APEC coal production rose 7.7% in 2022 compared to 2021, though the rising trend was not uniform across all economies.**

- In China, the world's largest coal producer, coal production increased by 10.5% in 2022, the highest growth among APEC economies in response to the high demand for domestic coal usage.
- Indonesia's coal production rose 10% in 2022, the second-highest growth among APEC economies after China. The increased coal production was both for export and domestic use.
- The United States and Russia showed a slight increase in coal production by 3.9% and 1.1% in 2022, respectively.
- Coal production in Australia dropped by 3.6% in 2022 due to lower metallurgical coal exports.

**Thermal coal exports from Indonesia grew in 2022, but exports from other APEC economies dropped.**

- Indonesia increased coal exports by 37 Mt in 2022, a unique economy among APEC coal export economies with growth in thermal coal exports in 2022.
- Russia showed the largest drop in coal exports in 2022 (-17 Mt) due to international sanctions and coal import bans from Western economies.
- Australia's coal exports declined by 15 Mt in 2022 because of reduced production due to the floods in New South Wales and Queensland.

**Coal prices reached a record-high level in 2022 due to the energy crisis and the Ukraine conflict.**

- Thermal coal spot prices reached a record high in September 2022, reaching approximately USD 450 per tonne, a nine-time higher than in September 2020. In 2023, thermal coal spot prices dropped dramatically from USD 400 per tonne in early 2023 to around USD 130 per tonne in July.
- Metallurgical coal prices surged to an unprecedented level of about USD 630 per tonne in March and then fell to around USD 200 per tonne in June 2022. In 2023, coking coal prices fell during the first quarter and eased further in June as Australian supply picked up. The limited supply of Australian high-quality raw metallurgical coal explains the price increase for coking coal in the third quarter.