



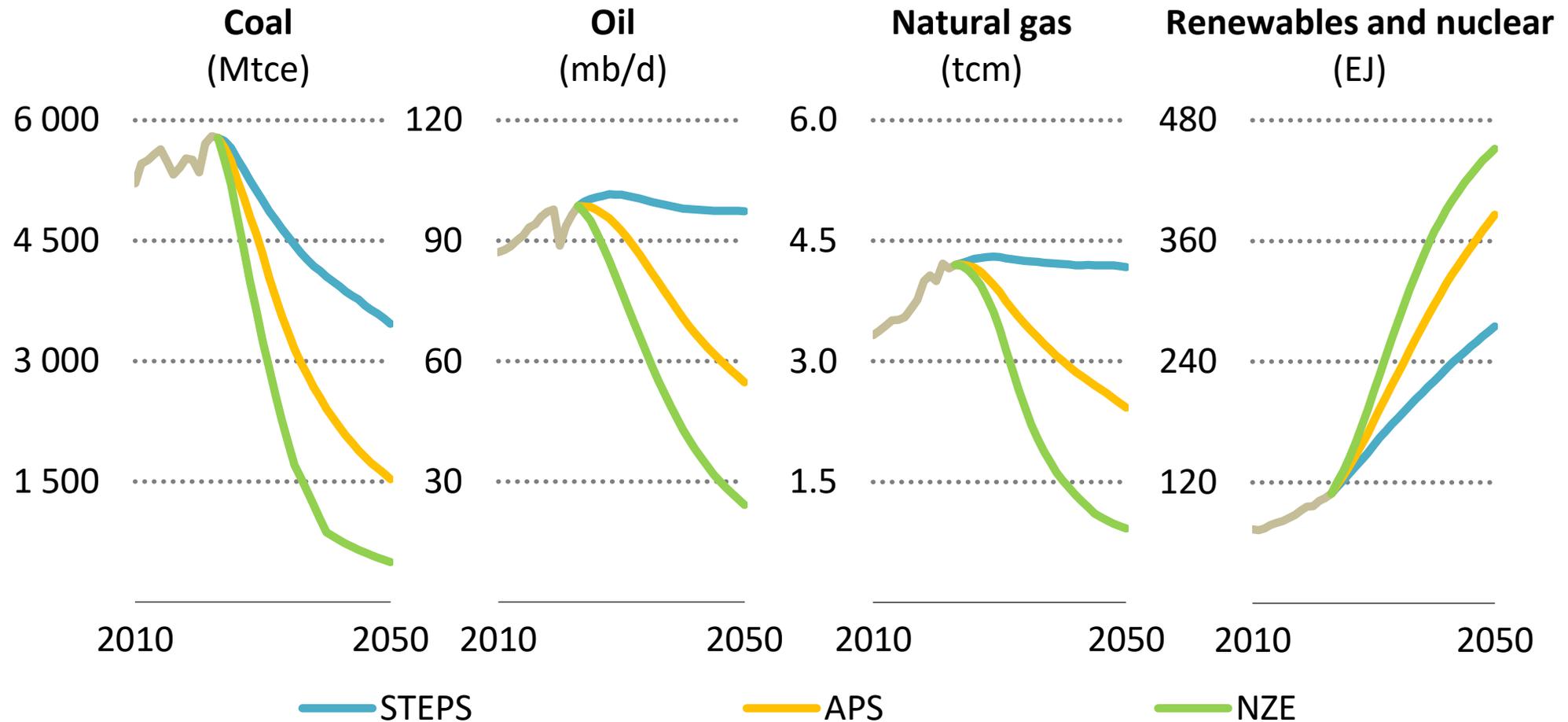
The energy mix to 2050 in IEA scenarios

Keisuke SADAMORI, Director, Energy Markets and Security

Reunion Geopolitique, 11 March, 2024,

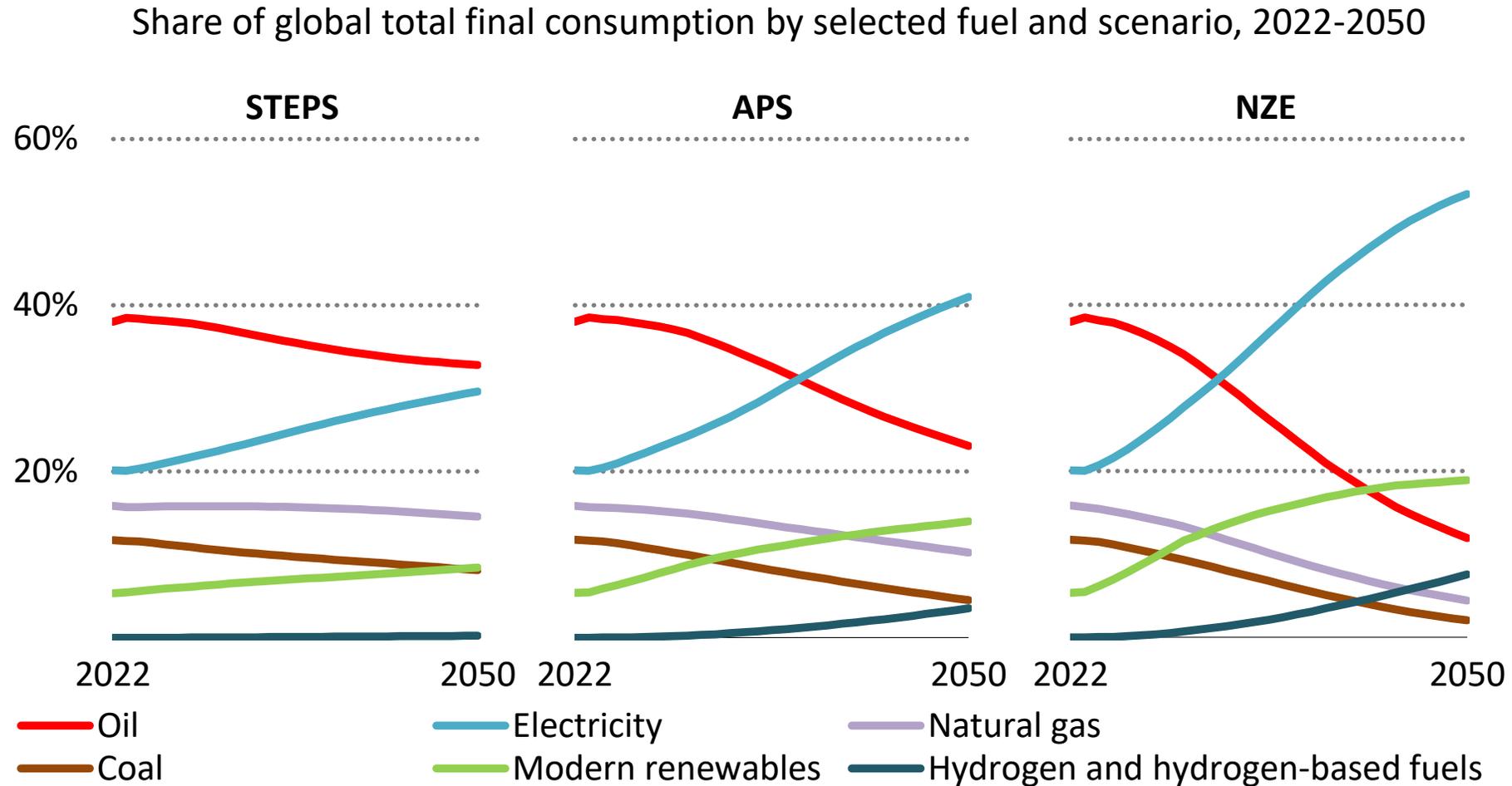
The big picture to 2050

Global total energy demand by fuel and scenario, 2010-2050



Low-emissions sources expand significantly and – for the first time in a scenario based on today’s policy settings – all fossil fuels peak and start to decline before 2030 in the Stated Policies Scenario (STEPS)

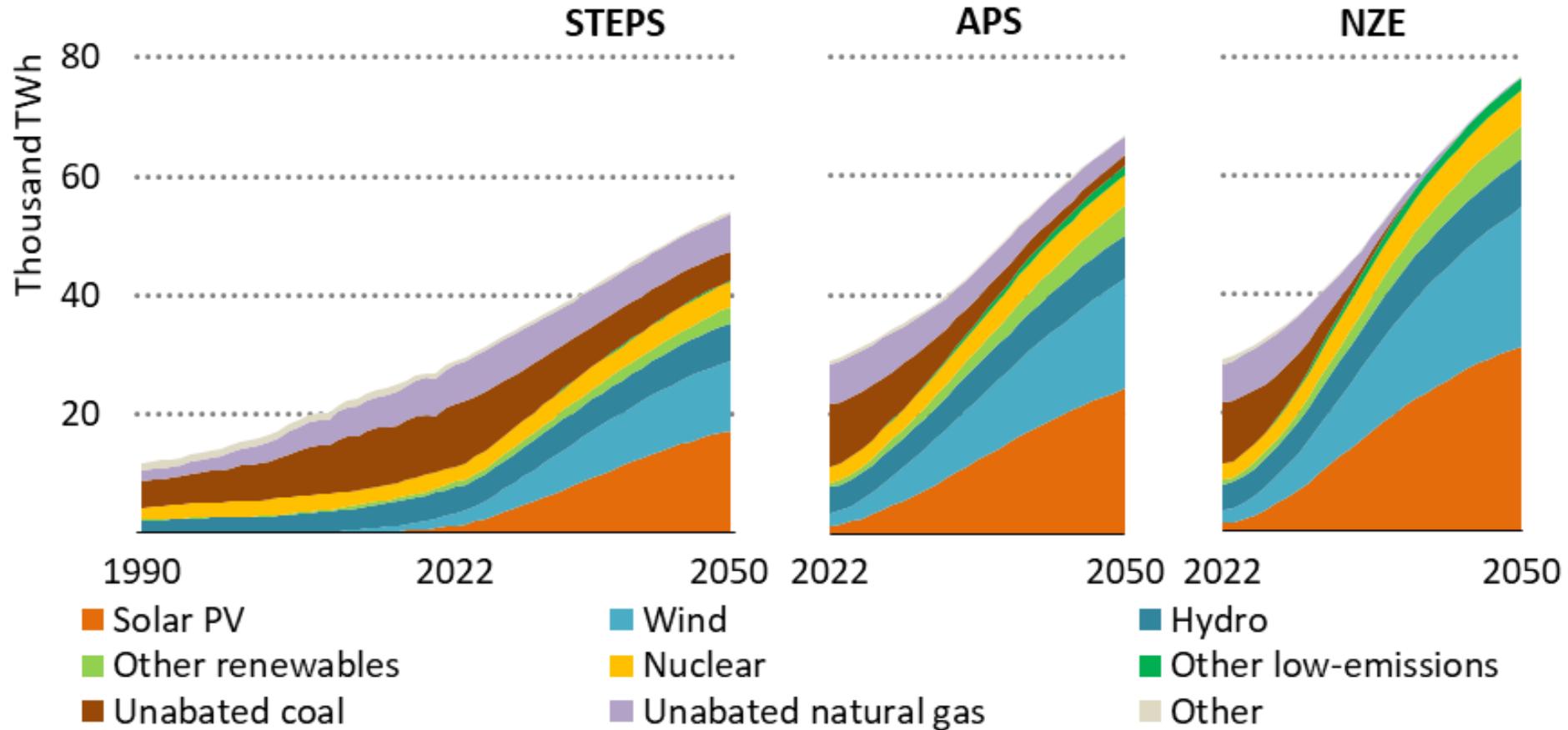
The future is electrifying...



The faster the pace of change towards a net-zero emissions system, the higher the share of electricity in final energy consumption. Every scenario retains a strong role for fuels – including a rising share of biofuels and hydrogen

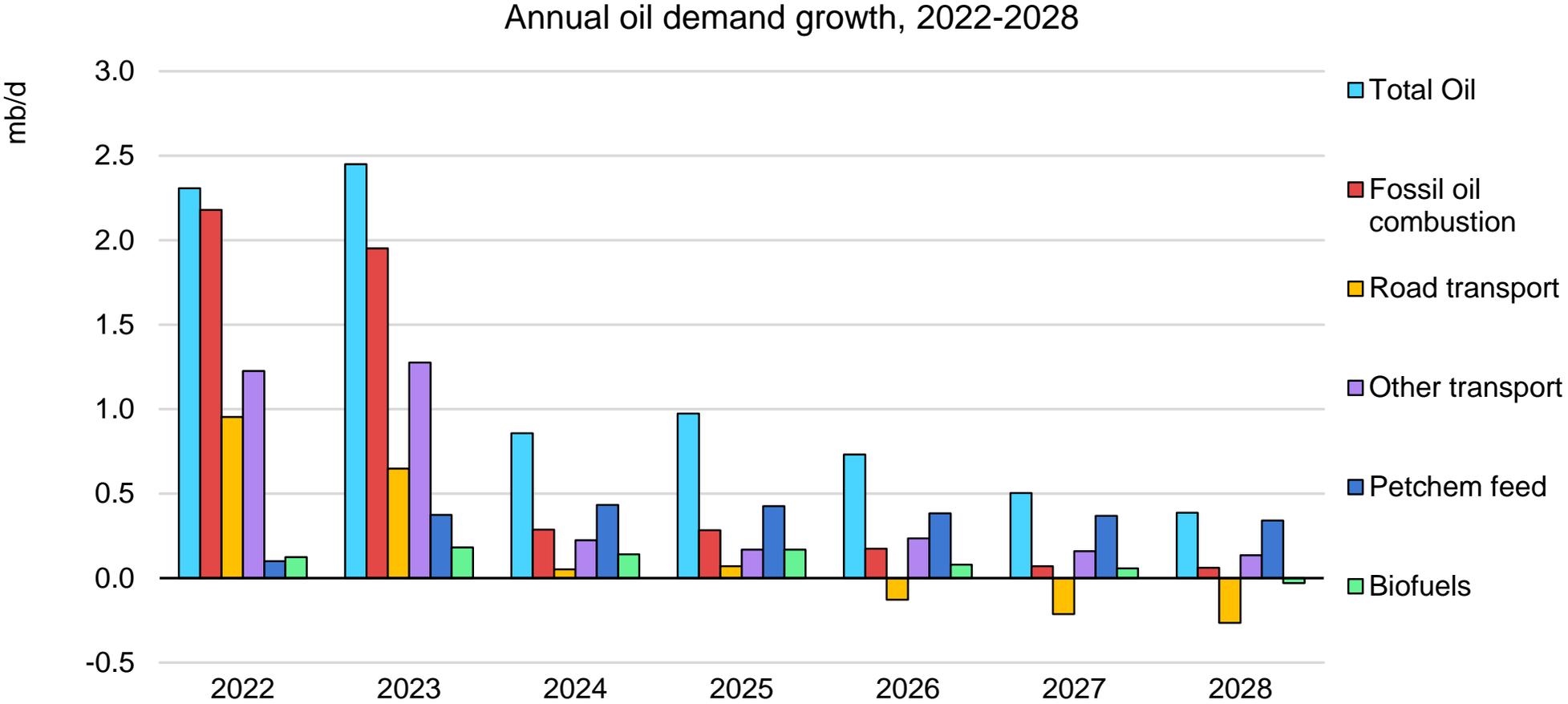
...with increasingly low-emissions power

Global electricity generation by source and scenario, 1990-2050



Renewables are set to contribute 80% of new power capacity to 2030 in the STEPS, with solar PV alone accounting for more than half. However, this uses only a fraction of the world's potential.

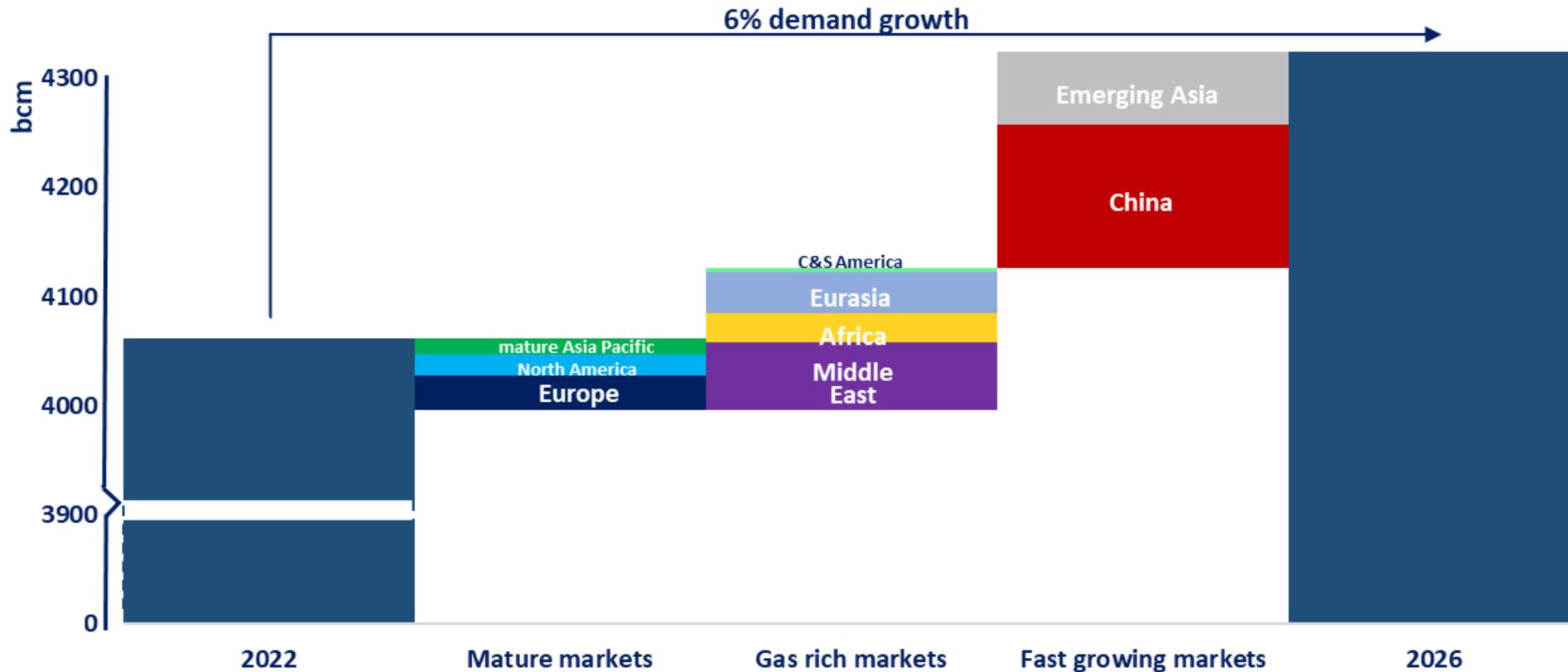
Global energy crisis accelerates transition away from oil



Growth in oil demand will slow from 2.3 mb/d in 2023 to 400 kb/d in 2028. Fossil fuel combustion peaks in 2028 on rising efficiencies and EV sales. Petrochemical feedstocks continue to increase.

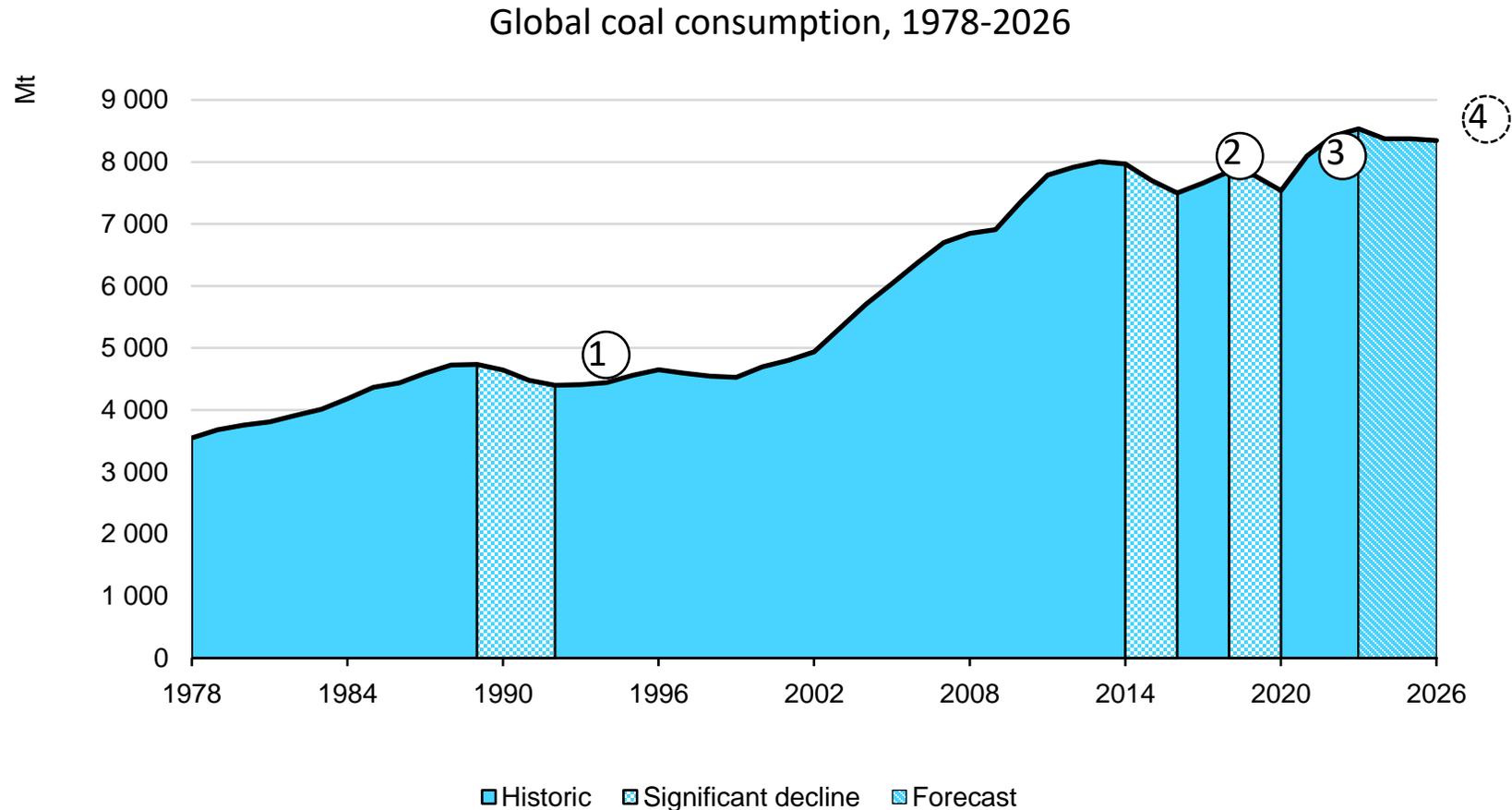
After a peak in mature markets, gas demand growth slows by a third

Forecasted change in natural gas demand by key regions, 2022 – 2026



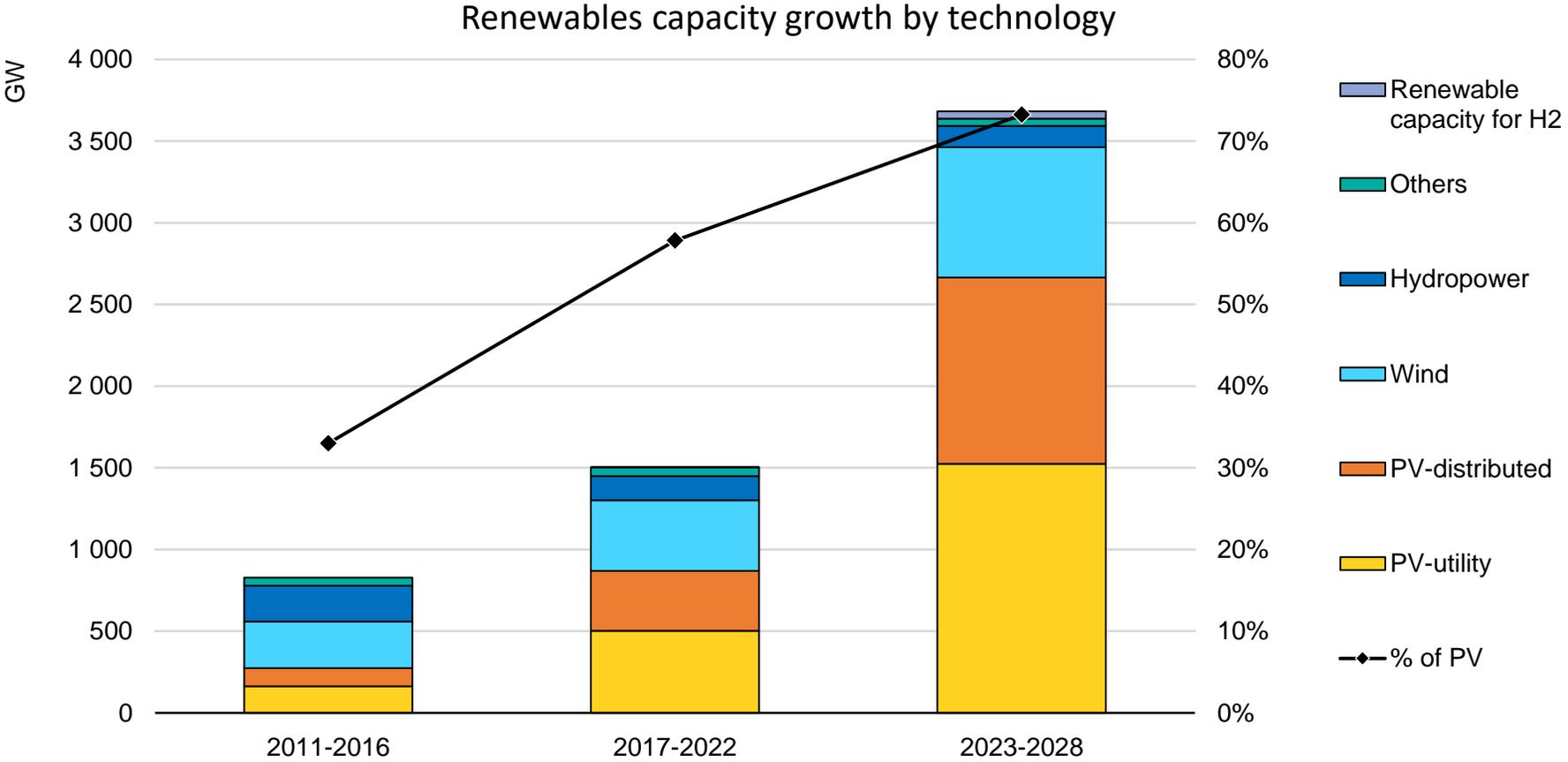
Following its 2021 peak in mature markets, gas demand growth slows down by a third and is increasingly concentrated in the Asia Pacific region and the gas-rich countries of Africa and Middle East.

A new decline in coal demand



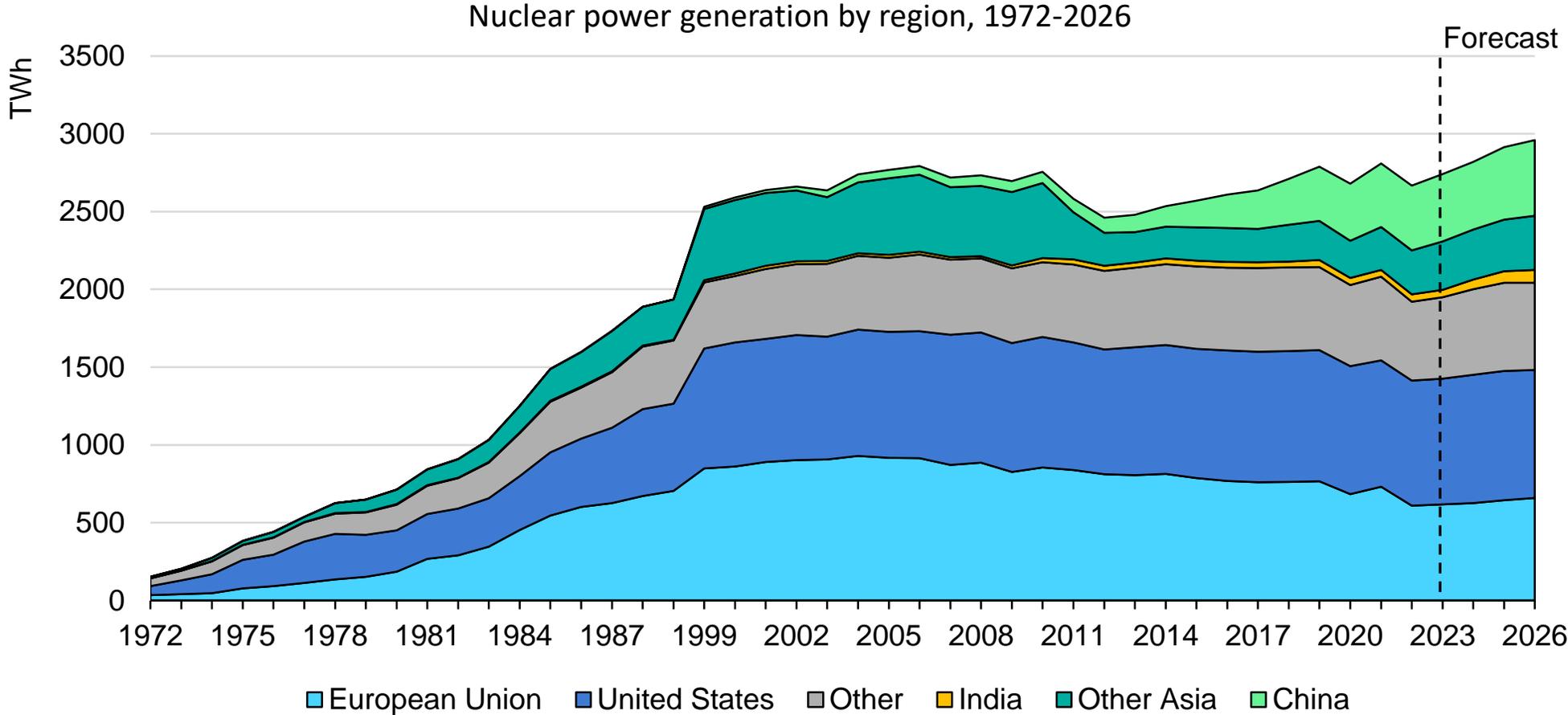
Global coal consumption saw three significant declines since 1960, which were driven by exceptional events. The forecasted fourth decline – led by the rise in renewables – looks more structural

Unprecedented expansion of renewables driven by solar PV



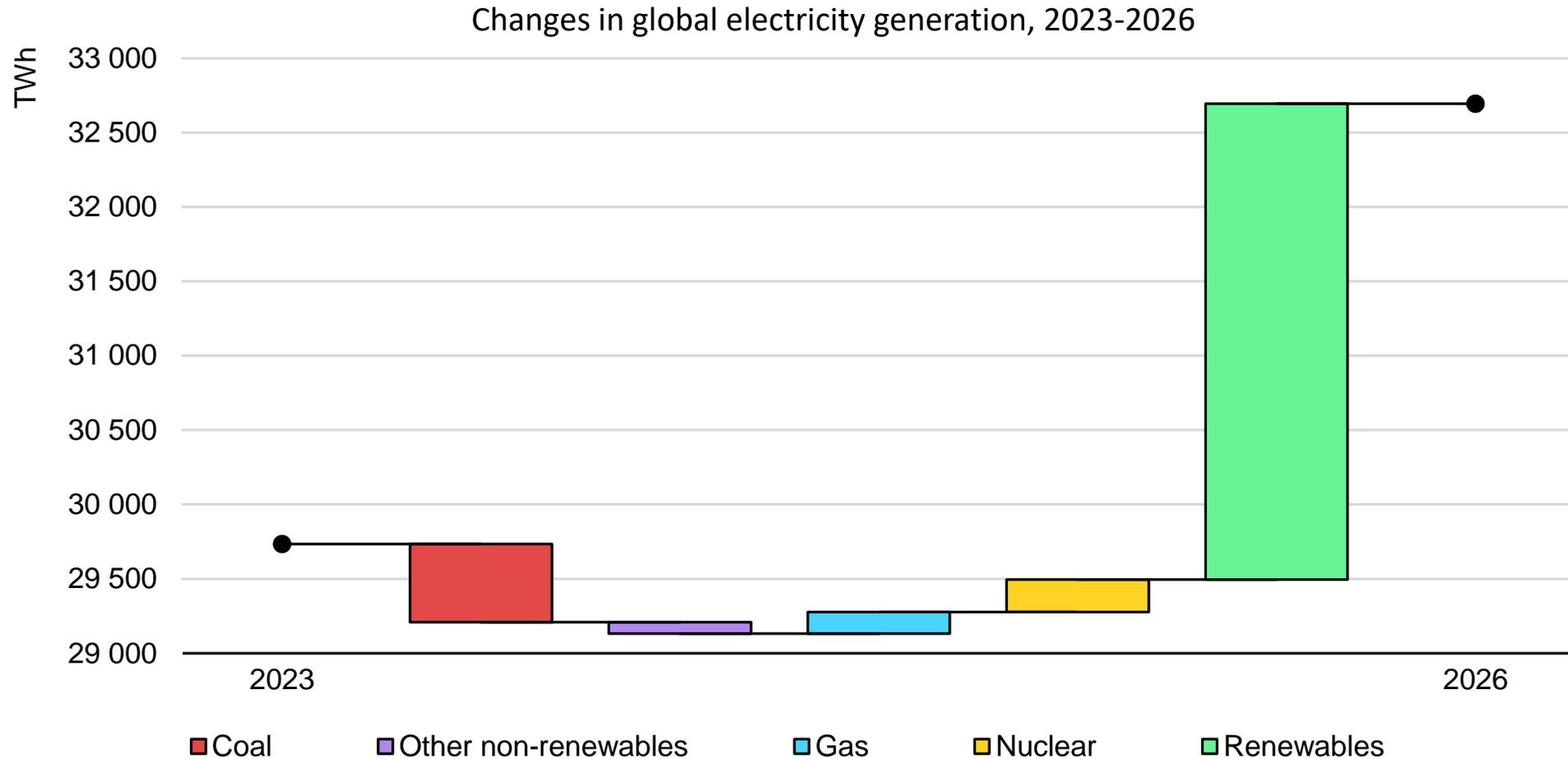
Declining prices and faster adaption of rooftop systems push PV forecast up. Wind forecast outside of China is less optimistic due to higher costs and slow permitting. RE capacity for hydrogen growth only account for 7% of announced projects

Global nuclear generation will reach a new record high in 2025



By 2025, global nuclear generation will have exceeded its previous record level from 2021, driven by French nuclear fleet recovering, restarts in Japan and new plants becoming operational in various regions.

Clean electricity supply set to meet all additional growth to 2026



Low-carbon sources are forecast to account for almost half of the world's electricity generation by 2026. Renewable generation set to overtake coal as the largest source of electricity in 2025.