

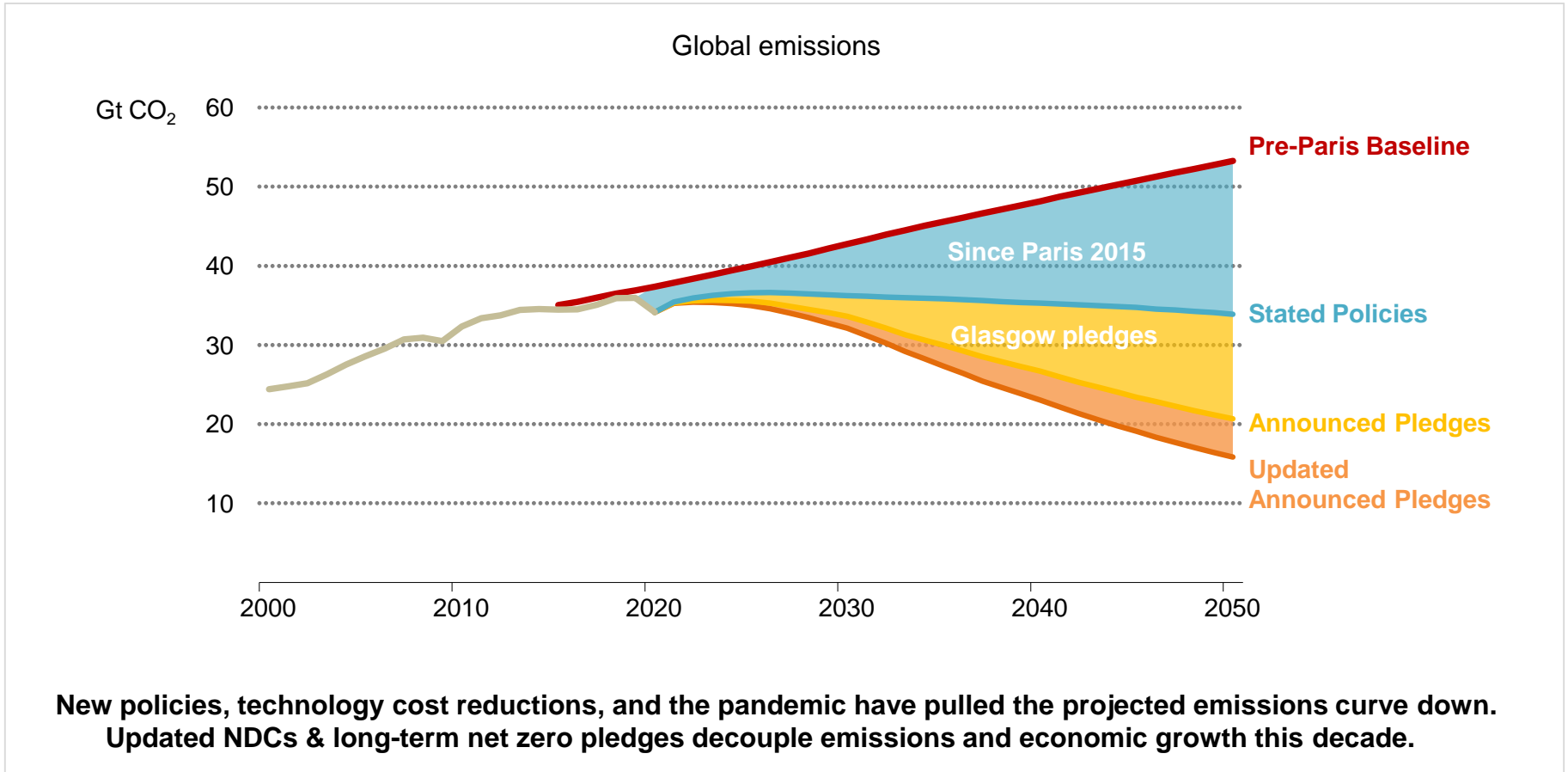


# World Energy Outlook 2021

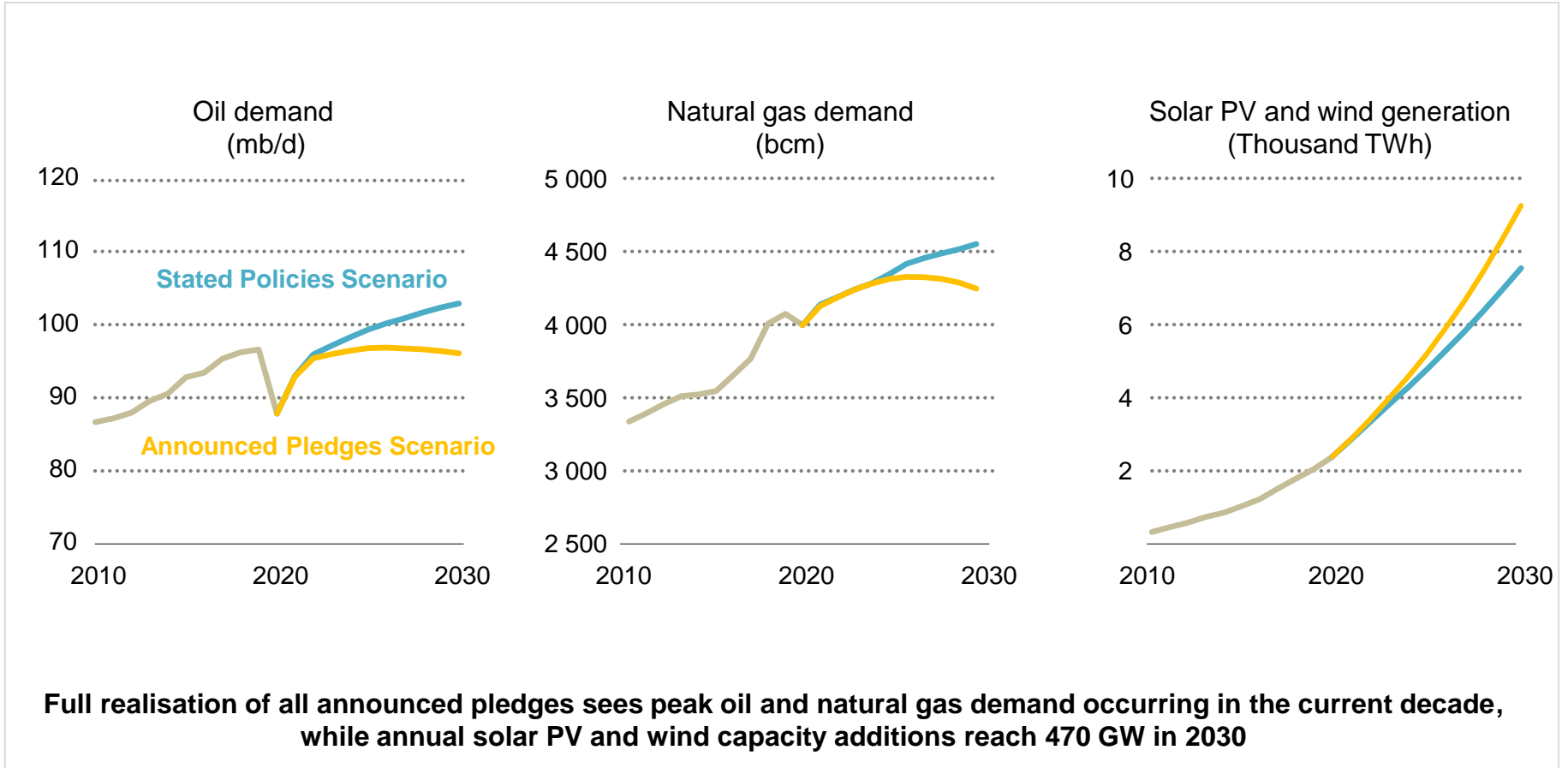
OERC Symposium, 17-11-2021

Thomas Spencer, Energy Modelling Office, IEA

# The world is starting to bend the emissions curve

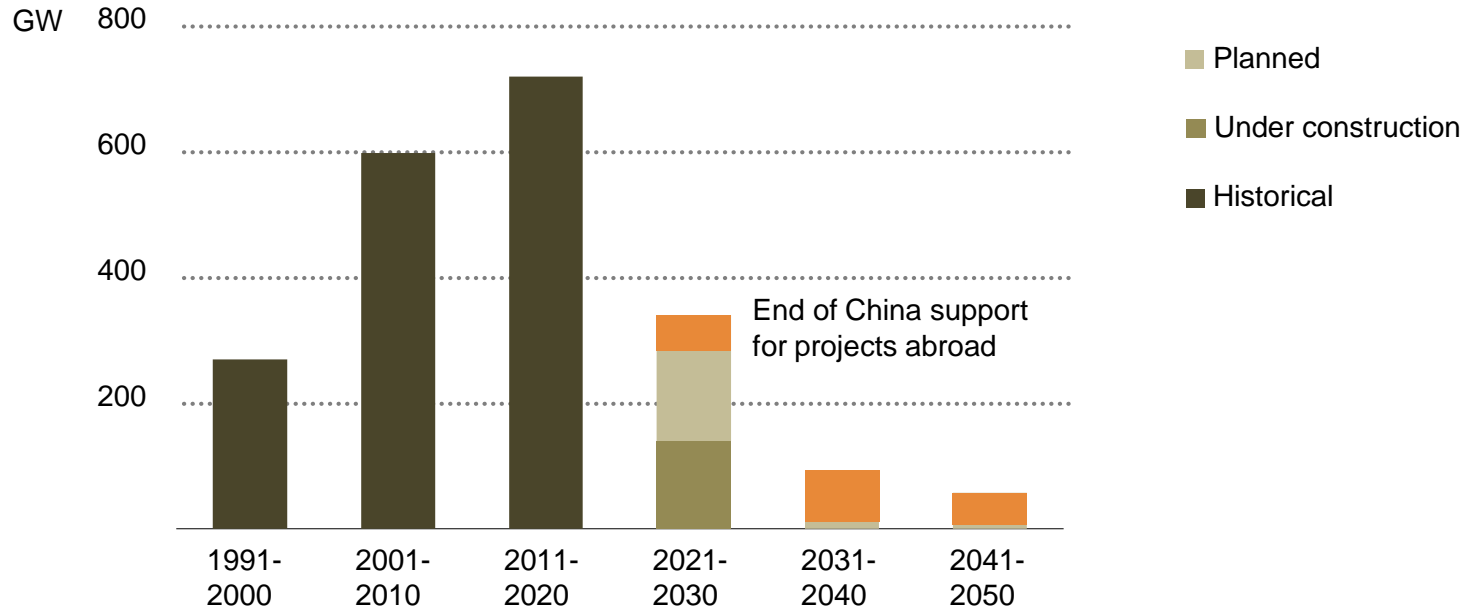


# And announced pledges re-shape global energy markets



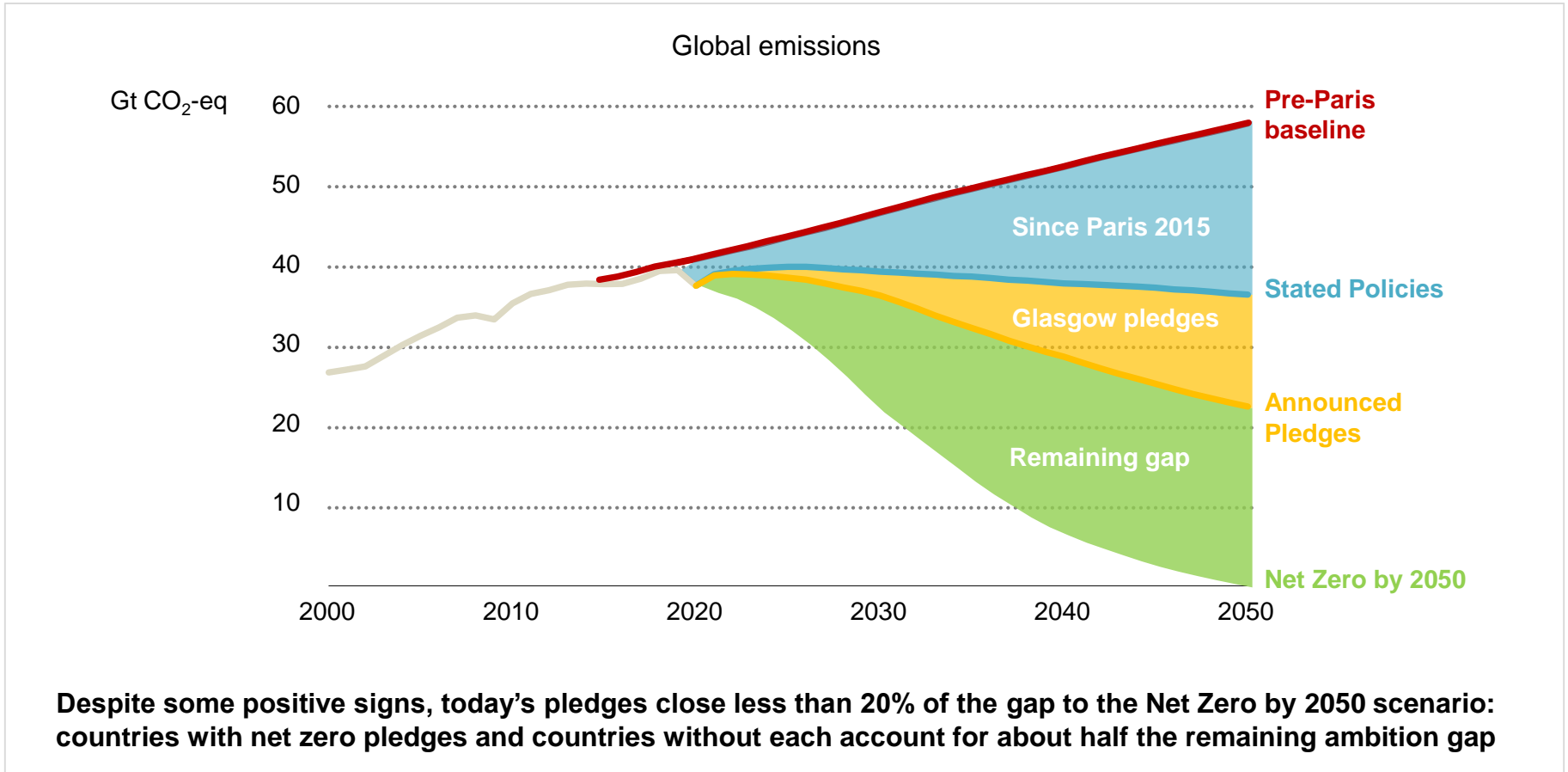
# New coal power is on its way out

Coal-fired capacity additions in the Announced Pledges Scenario

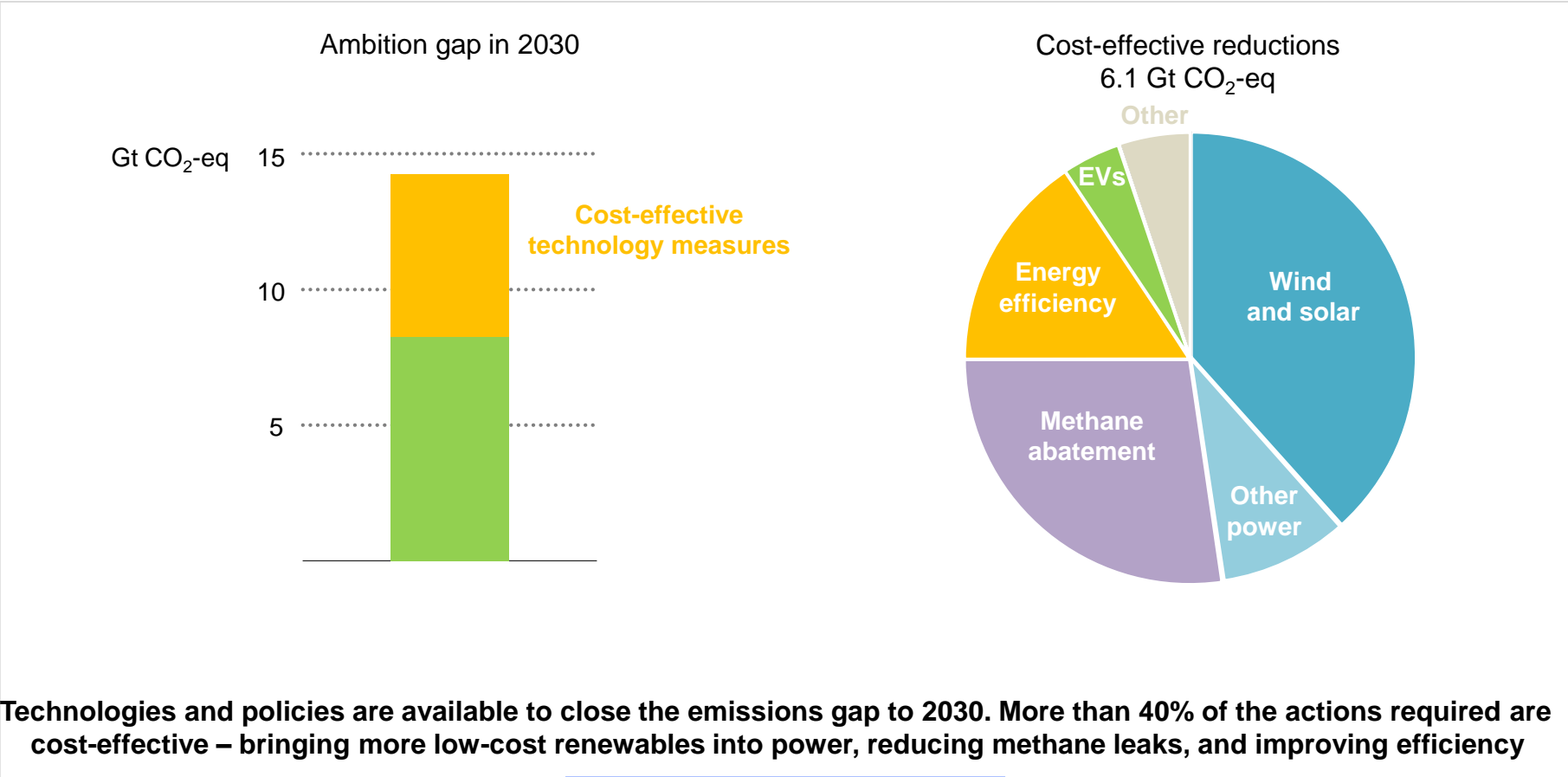


**After decades of growth, construction of unabated coal power plants sharply declines under announced pledges, and cancellations could cut 20 Gt of emissions to 2050, comparable to savings from the EU reaching net zero by 2050**

# A large ambition gap remains in 2030



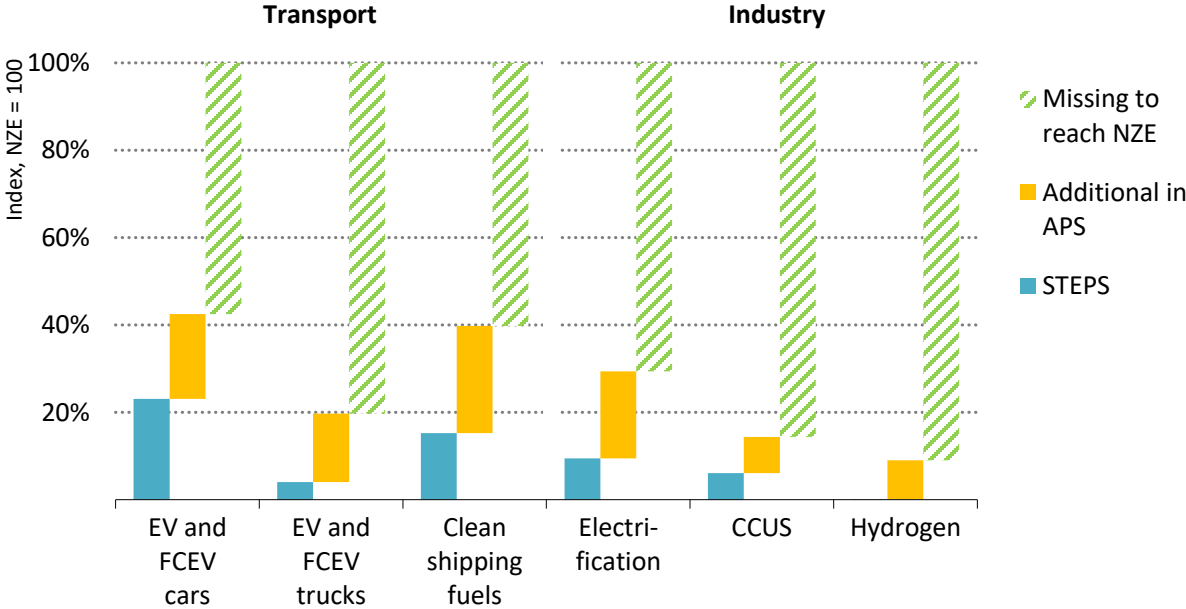
# But we have cost-effective ways to close the gap



**Technologies and policies are available to close the emissions gap to 2030. More than 40% of the actions required are cost-effective – bringing more low-cost renewables into power, reducing methane leaks, and improving efficiency**

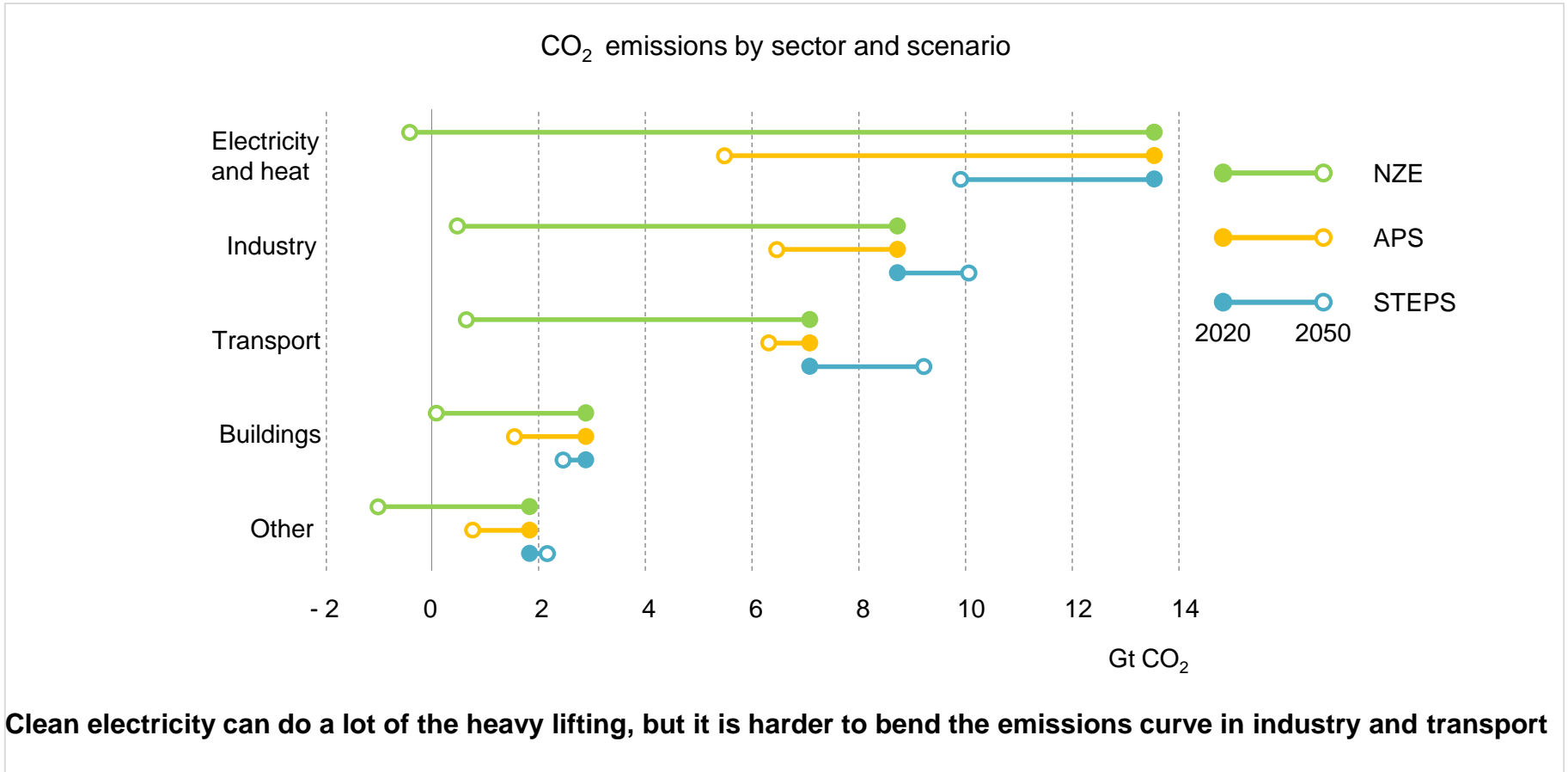
# Key milestones lag behind the net zero pathway

Percent achievement of key milestones in 2030 relative to the NZE



**Key milestones related to CCUS, hydrogen-based fuels and electrification lag behind in the APS, and while this has relatively little impact on 2030 emissions, it risks the long-term feasibility of the NZE pathway**

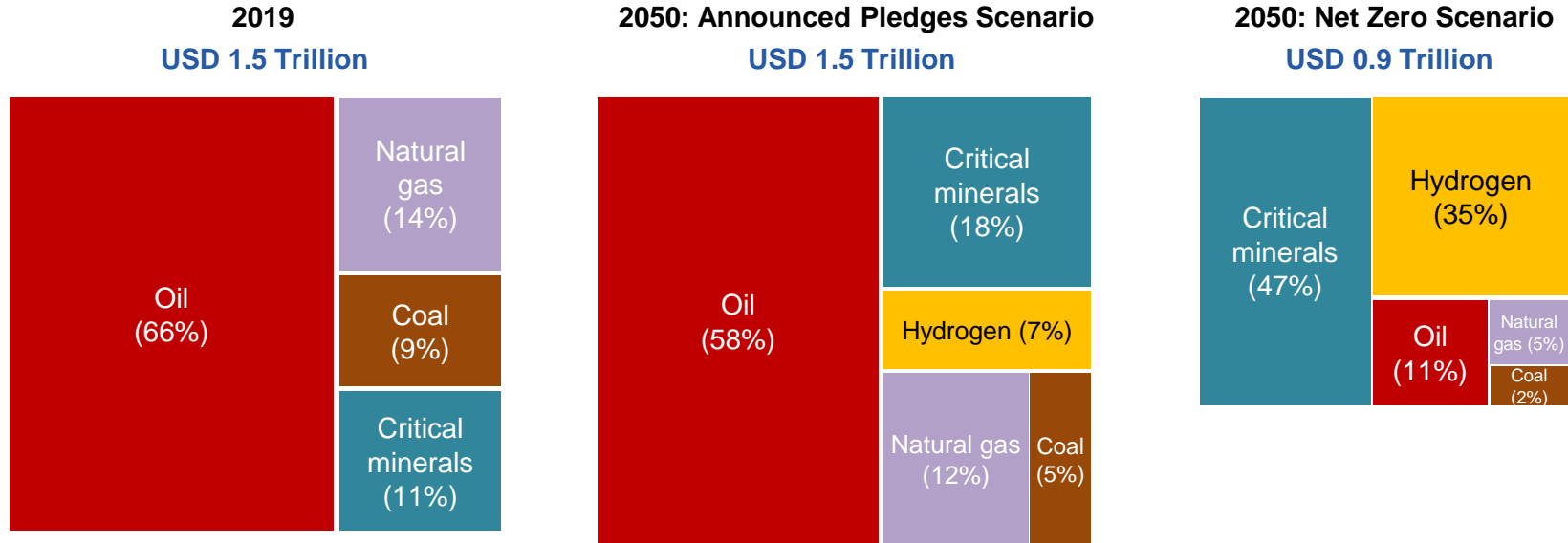
# A momentous change ahead for all sectors





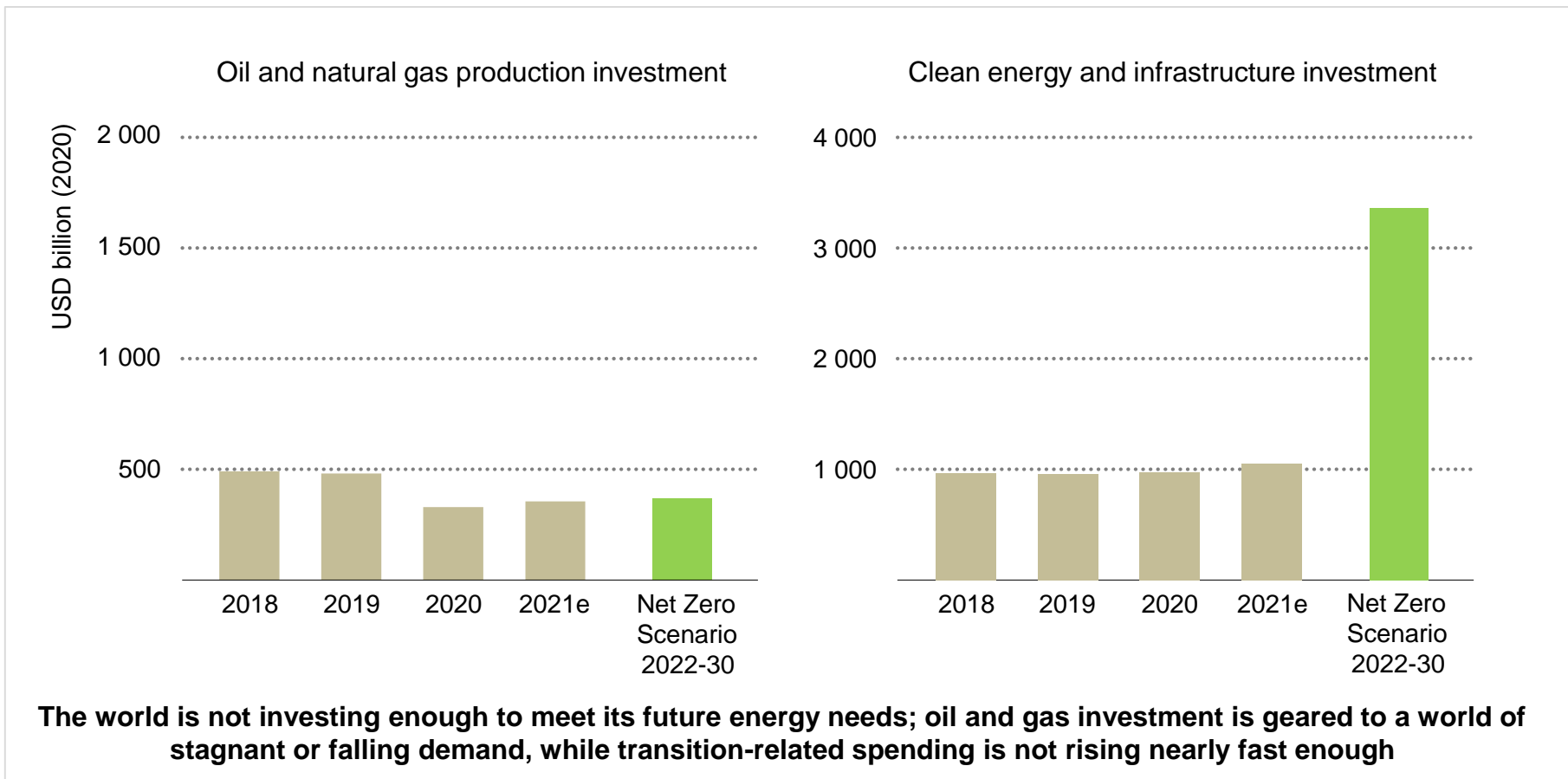
# The rise of new energy-related commodities

Value of international energy-related resource trade



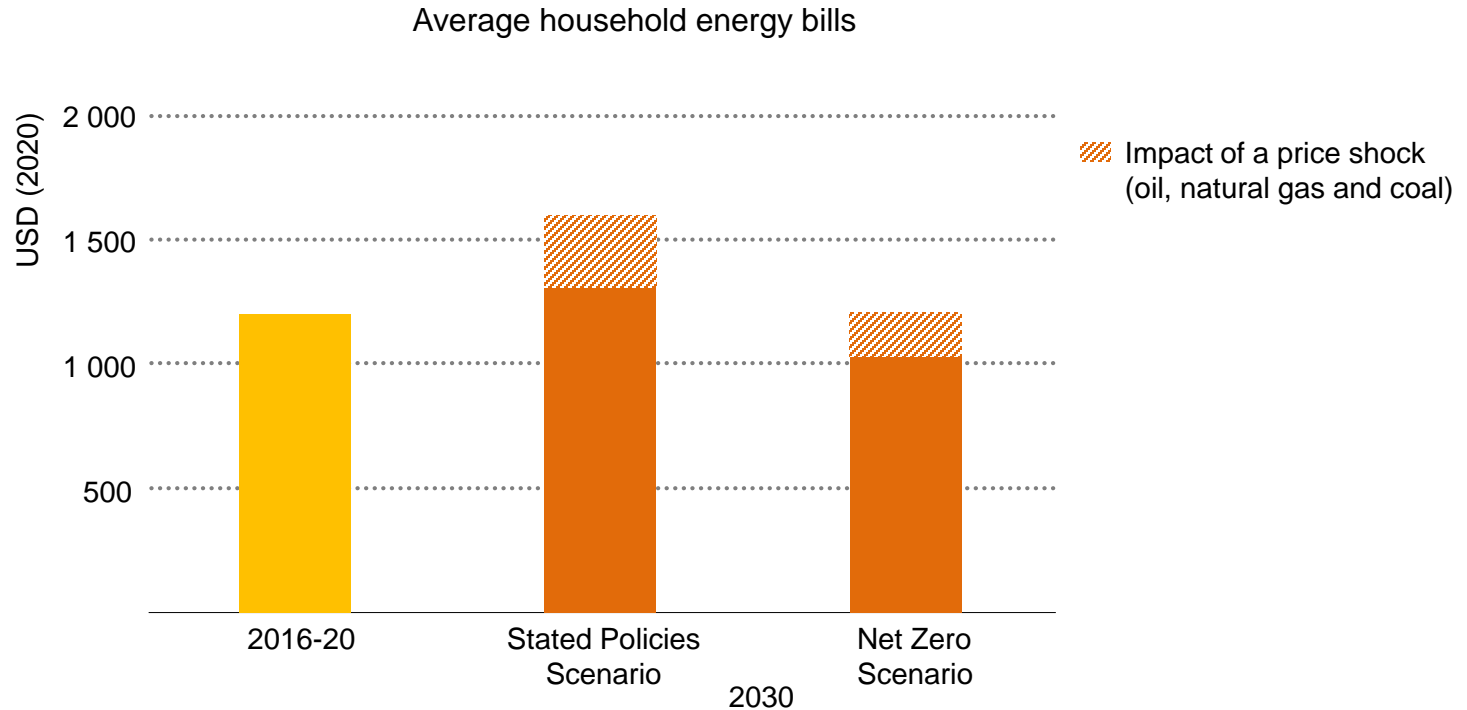
**Under announced pledges, a growing share of oil and gas trade flows towards developing economies in Asia. In all scenarios, but especially in the net zero pathway, critical minerals and hydrogen-based fuels are on the rise**

# Looming risk of more turbulence ahead for energy markets



**The world is not investing enough to meet its future energy needs; oil and gas investment is geared to a world of stagnant or falling demand, while transition-related spending is not rising nearly fast enough**

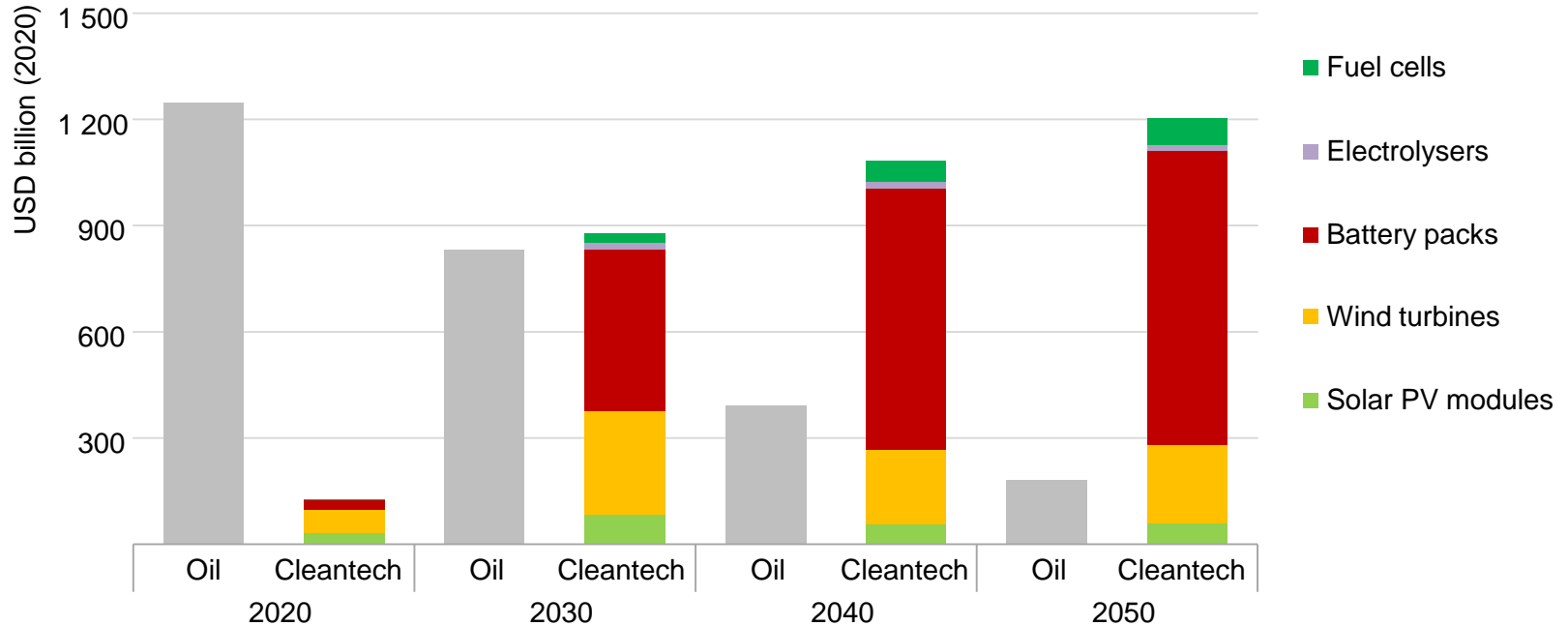
# Well-managed transitions offer shelter from price volatility



**Clean energy transitions can cushion consumers from the shock of price spikes for oil and gas, if households can get help to manage the upfront costs of energy efficiency improvements & electrification**

# A new global energy economy is emerging

Estimated market sizes of oil and selected clean energy technology equipment in the Net Zero Scenario



**Explosive growth in clean energy deployment over the next decades could create a market opportunity for manufacturers of key equipment worth a cumulative USD 27 trillion through to 2050**

- The transition to a sustainable energy system is the solution to the turbulence that we are seeing in gas, coal and electricity markets today – not the cause
- A laser-like focus on clean electrification, energy efficiency, methane abatement & innovation can close the near-term gap with a 1.5°C future; cost-effective solutions are available & every country needs to step up
- The longer today's mismatch in energy investment persists, the greater the risks to energy security & price volatility. A massive policy-driven surge in clean energy transitions is the way forward
- A new global energy economy is emerging, one that will be more electrified, efficient, digitalised & clean – offering enormous potential for growth and employment
- Governments have unrivalled capacity to transform the energy sector: a wave of investment in a net zero future must be driven by an unmistakable signal from Glasgow

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