

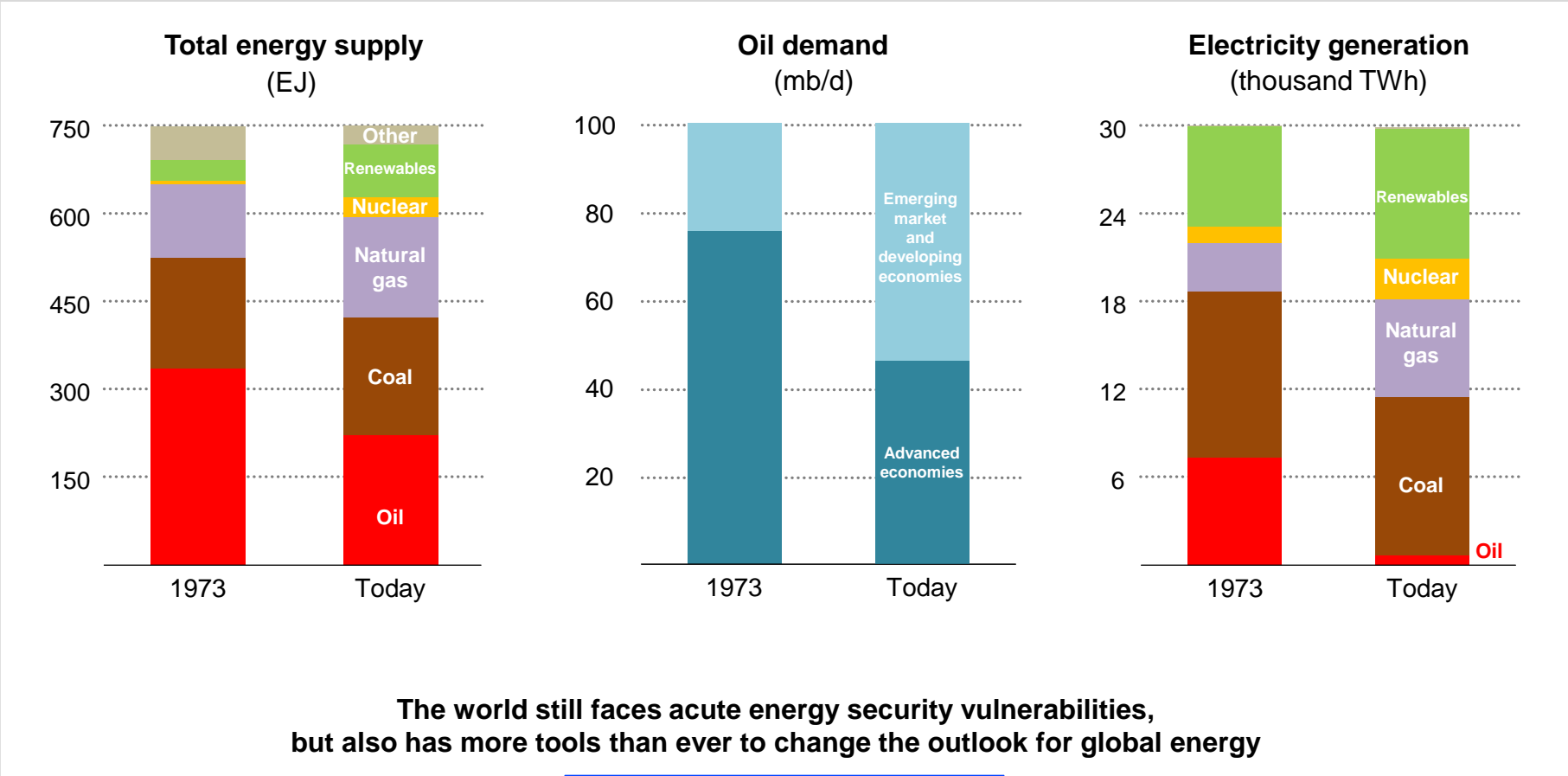


World Energy Outlook 2023

Stéphanie Bouckaert and Peter Zeniewski

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Fifty years on from the first oil shock



Scenario analysis in the World Energy Outlook

The *World Energy Outlook (WEO)* uses the latest available data to analyse energy, emissions and climate trends.

3 core scenarios

Where do existing policies take us?



Stated Policies Scenario

What is the impact of announced net zero and other pledges if they are met in full?

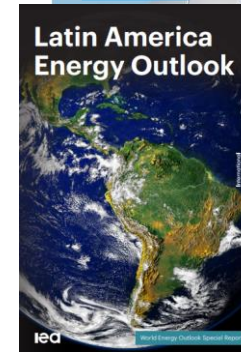
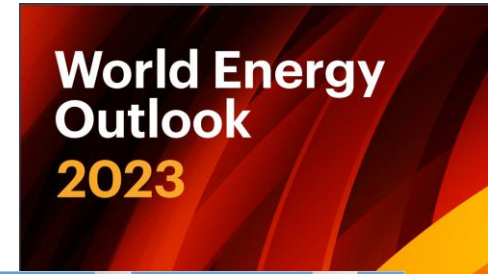


Announced Pledges Scenario

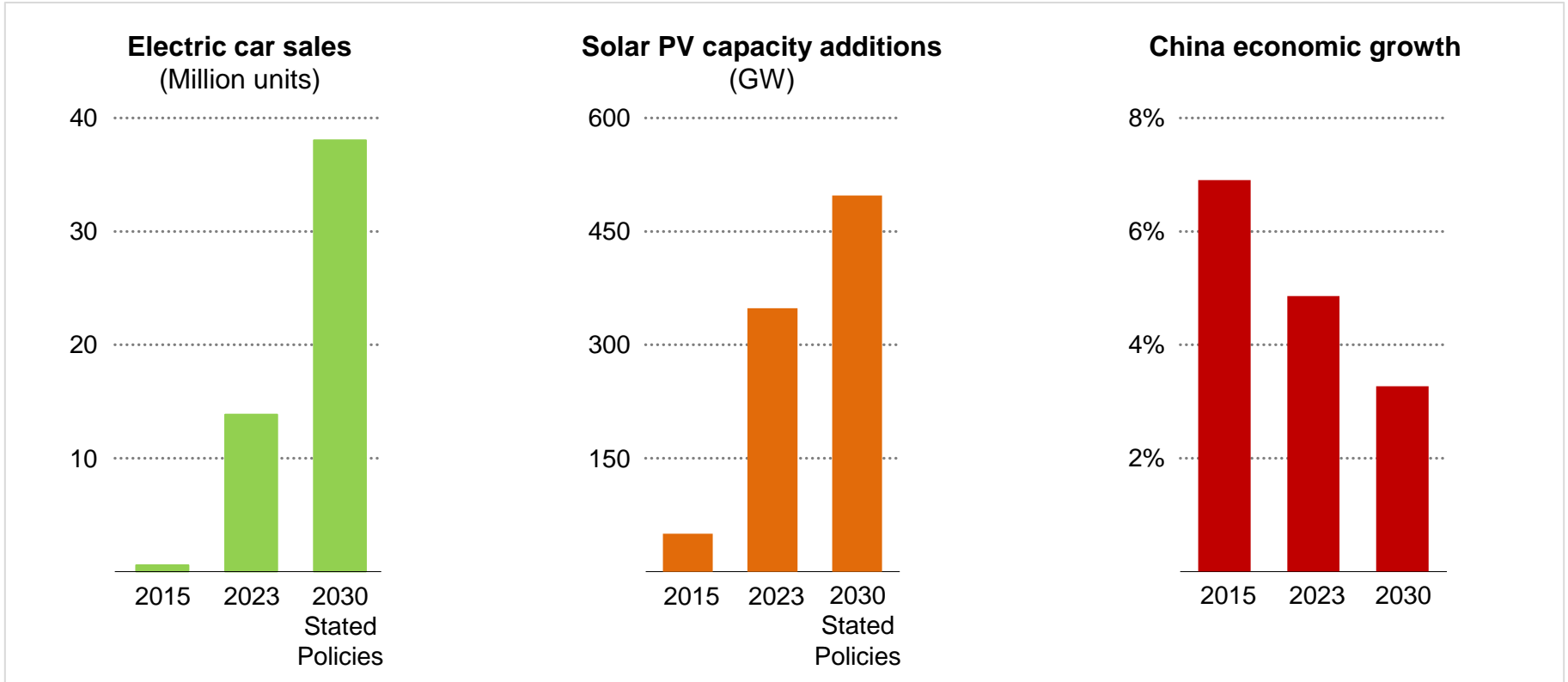
What is required for the energy sector to reach net zero CO₂ emissions by 2050?



Net Zero Emissions by 2050 Scenario

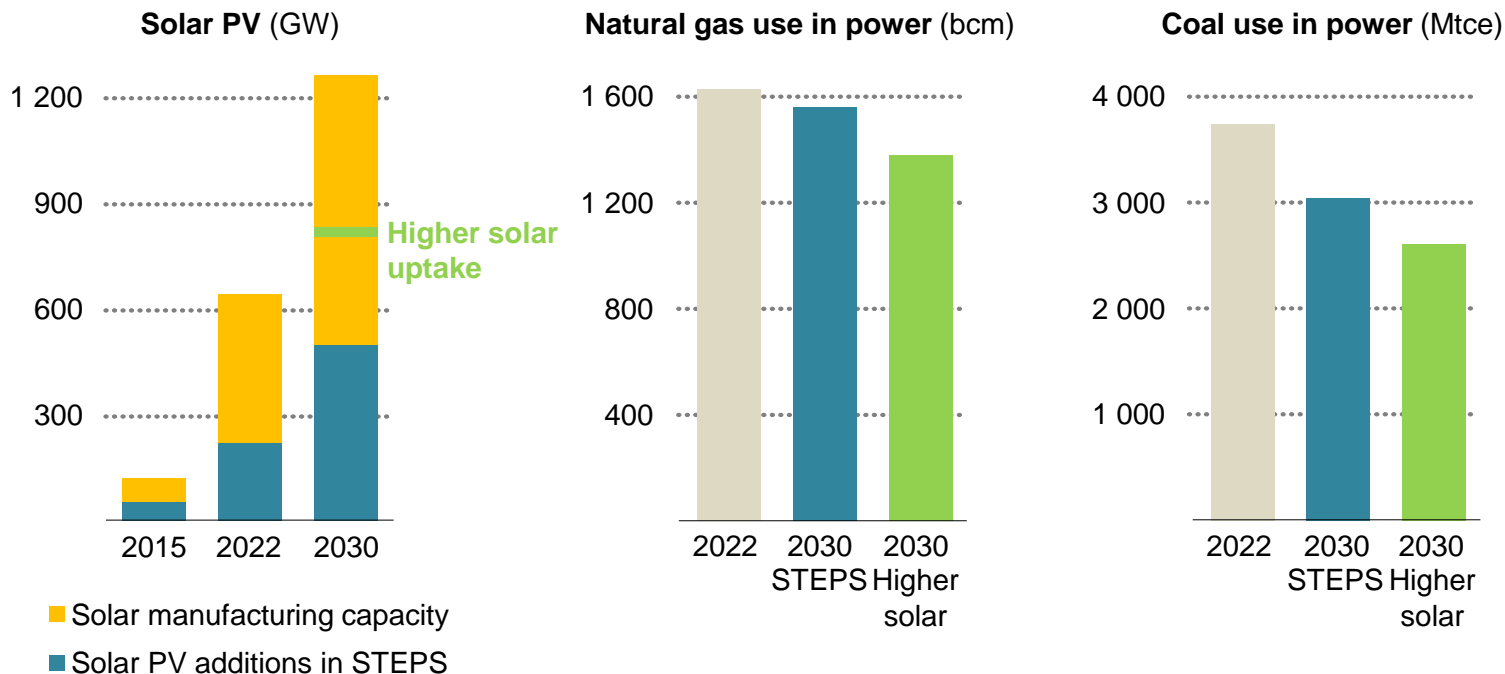


Major structural shifts reshape the new *Outlook*



The huge surge of clean energy technologies such as electric vehicles and solar PV, combined with a rebalancing in China's economy towards a cleaner development model, change the trajectory for the global energy system

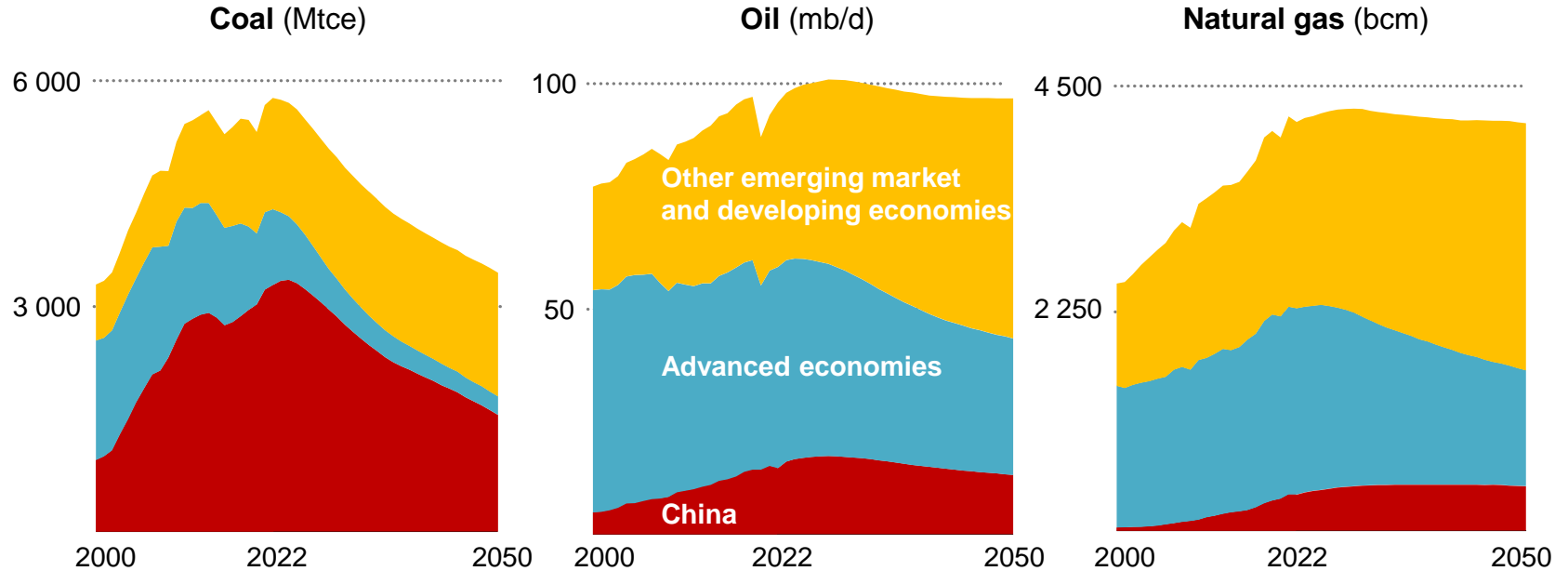
A solar boom could accelerate the shift away from fossil fuels



Ample global manufacturing offers considerable upside for solar. Effectively integrated, this would further cut natural gas and coal use, making the declines steeper.

On track for a peak in all fossil fuels before 2030

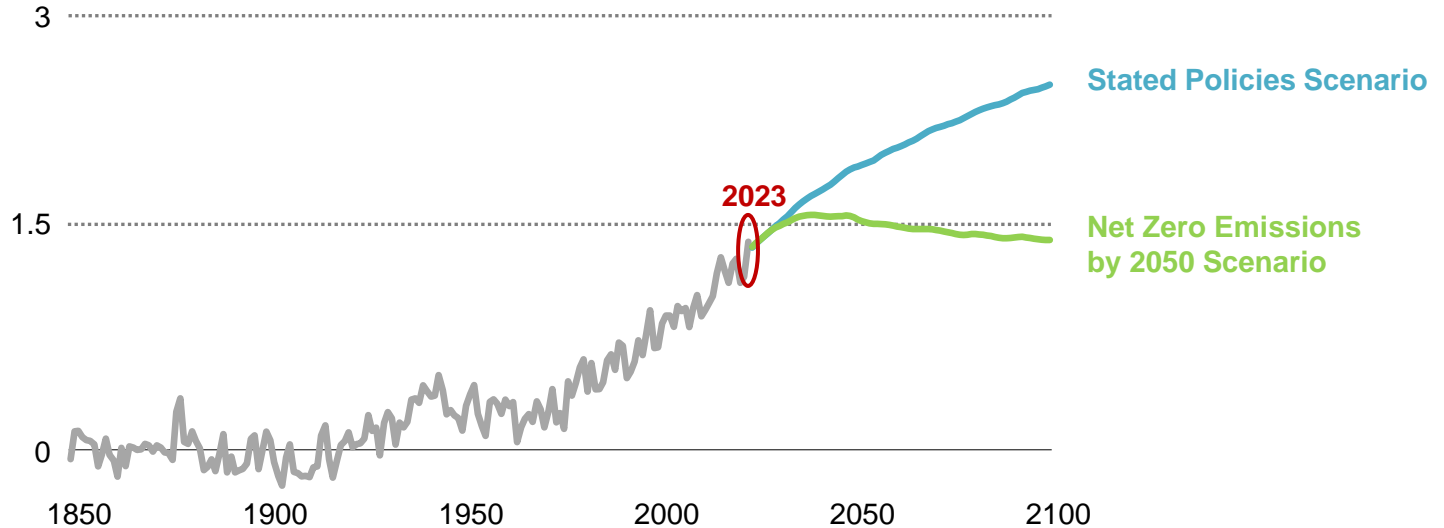
Fossil fuel demand in the Stated Policies Scenario (STEPS)



For the first time, today's policy settings are strong enough to generate peaks for coal, oil and natural gas this decade; the share of fossil fuels starts to edge downwards from 80% today to 73% in 2030

Today's choices will determine future warming

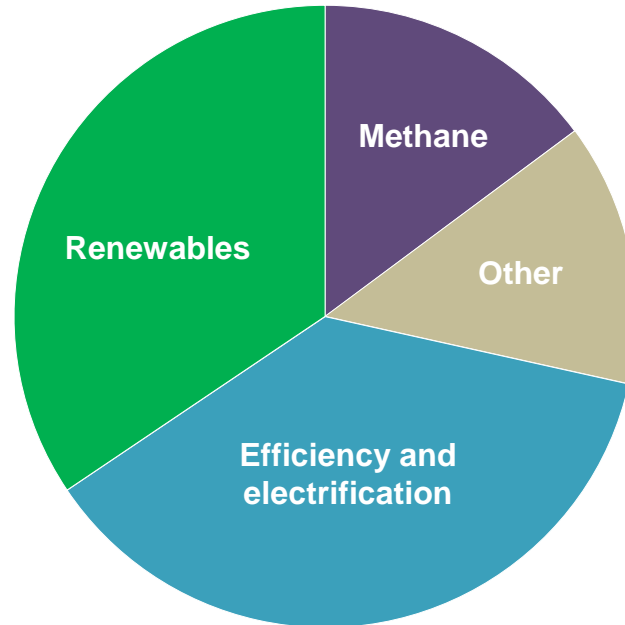
Change in global average surface temperature from pre-industrial levels (°C)



Emissions are set to peak by 2025 under today's policy settings, but temperatures would continue to rise; proven policies and technologies are available to keep the door to 1.5 °C open

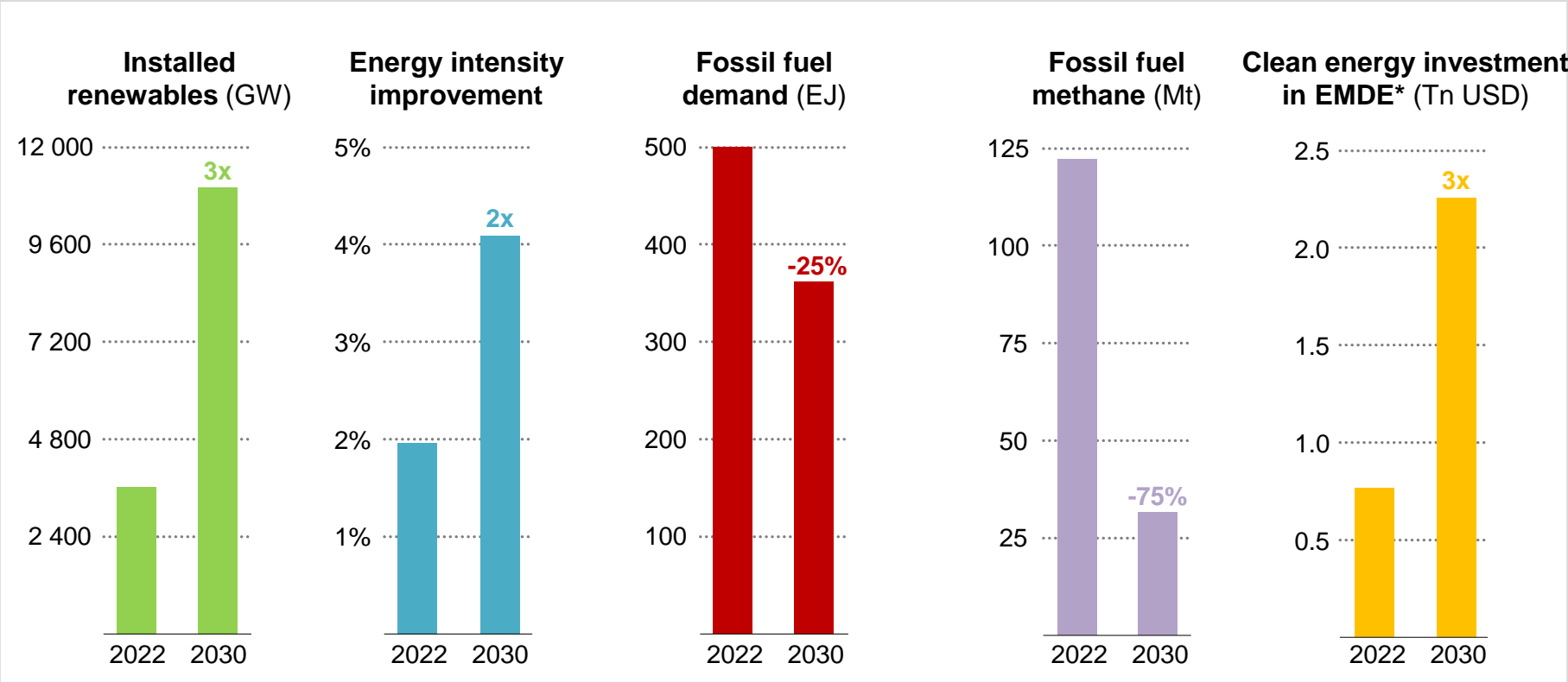
We have the tools to go much faster

Emissions reductions by measure by 2030 in the NZE Scenario



Energy-related greenhouse gas emissions peak by 2025 and decline by nearly 40% from today to 2030. Proven solutions available today deliver over 80% of what is needed this decade.

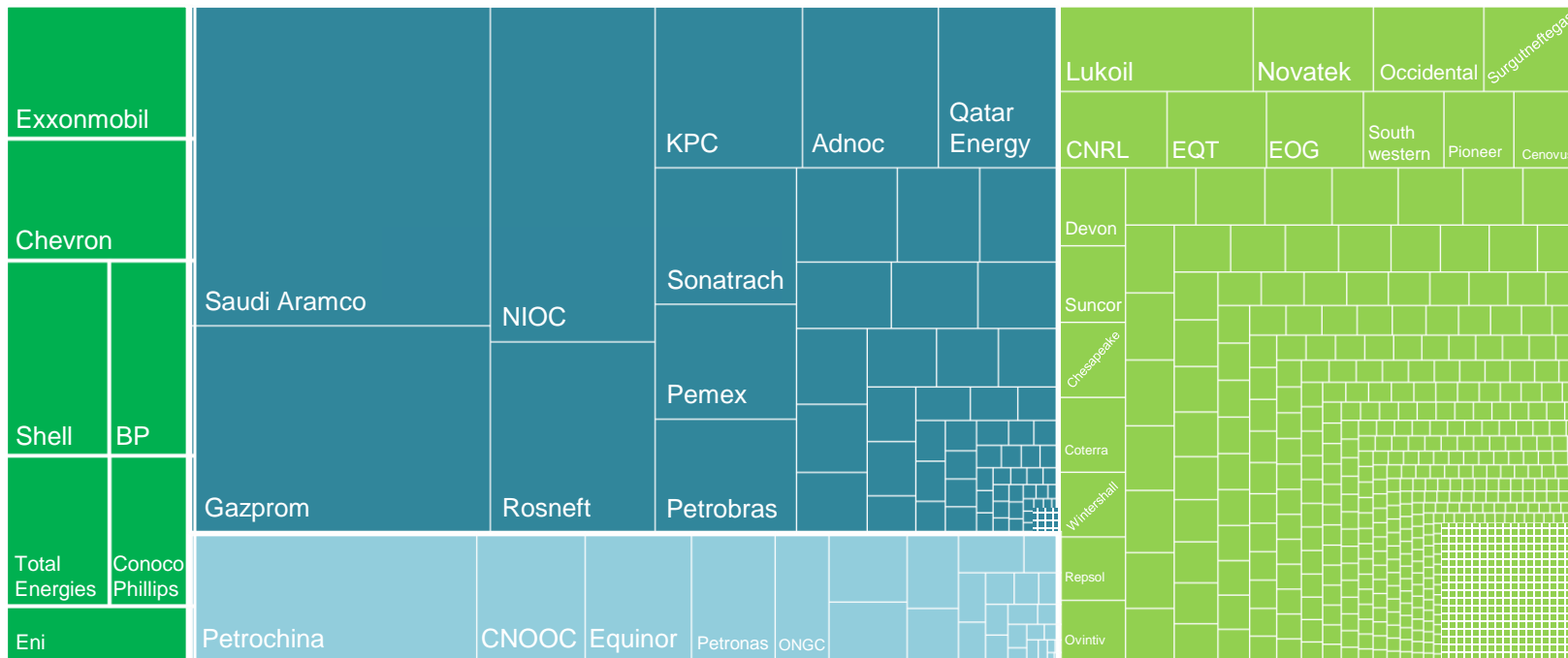
Five pillars to keep 1.5 °C alive



A comprehensive energy package for COP28 needs to drive the growth in clean energy, support emerging and developing economies in the transition, and recognise the need to reduce fossil fuel demand

The oil and gas industry landscape

Global oil and gas production in 2022



Attention often focuses on the majors, but they hold less than 13% of global oil and gas production & reserves. National Oil Companies account for more than half of global output and close to 60% of oil and gas reserves

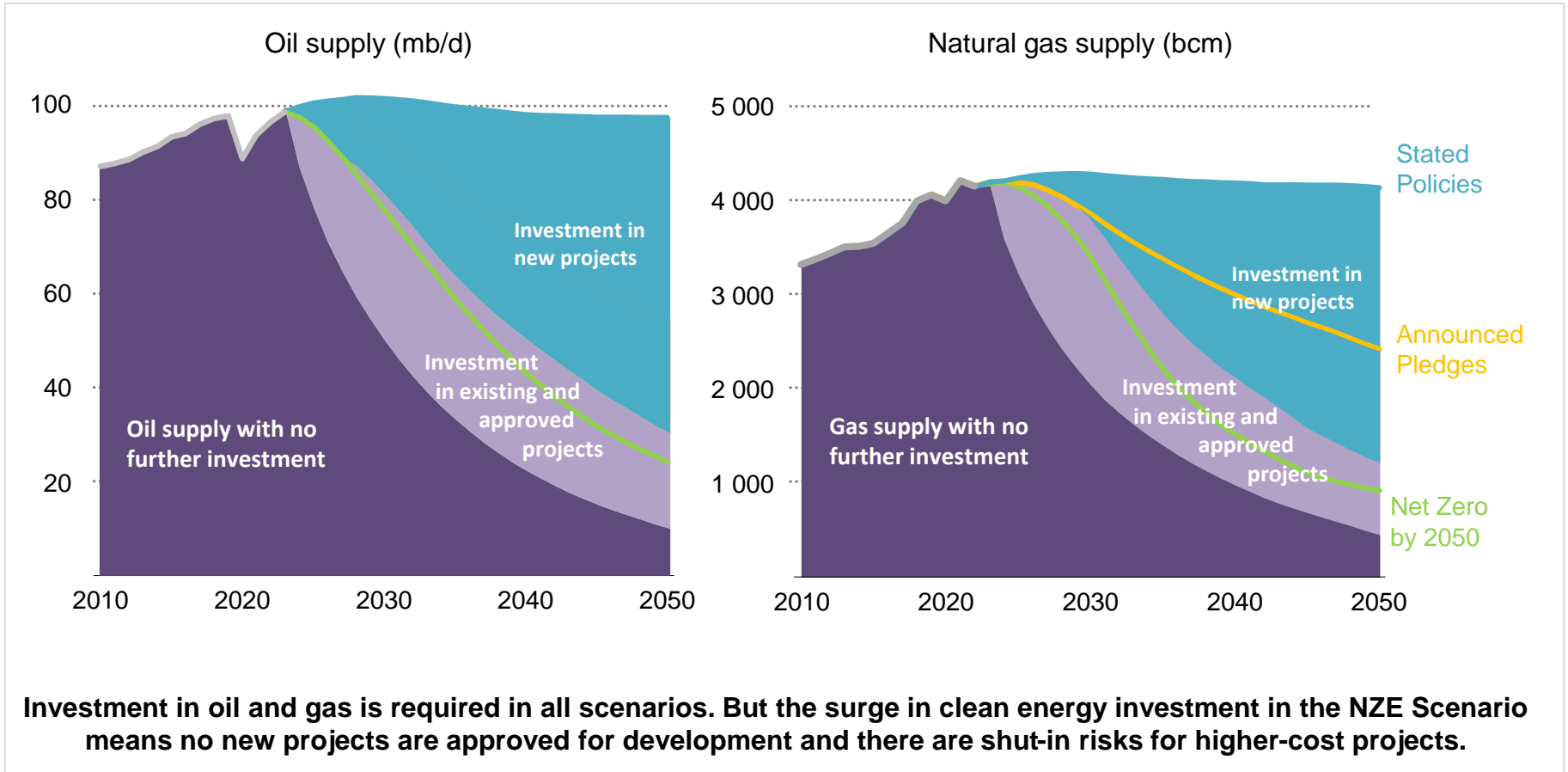
Where does the money go?

Revenue from oil and gas sales in 2022

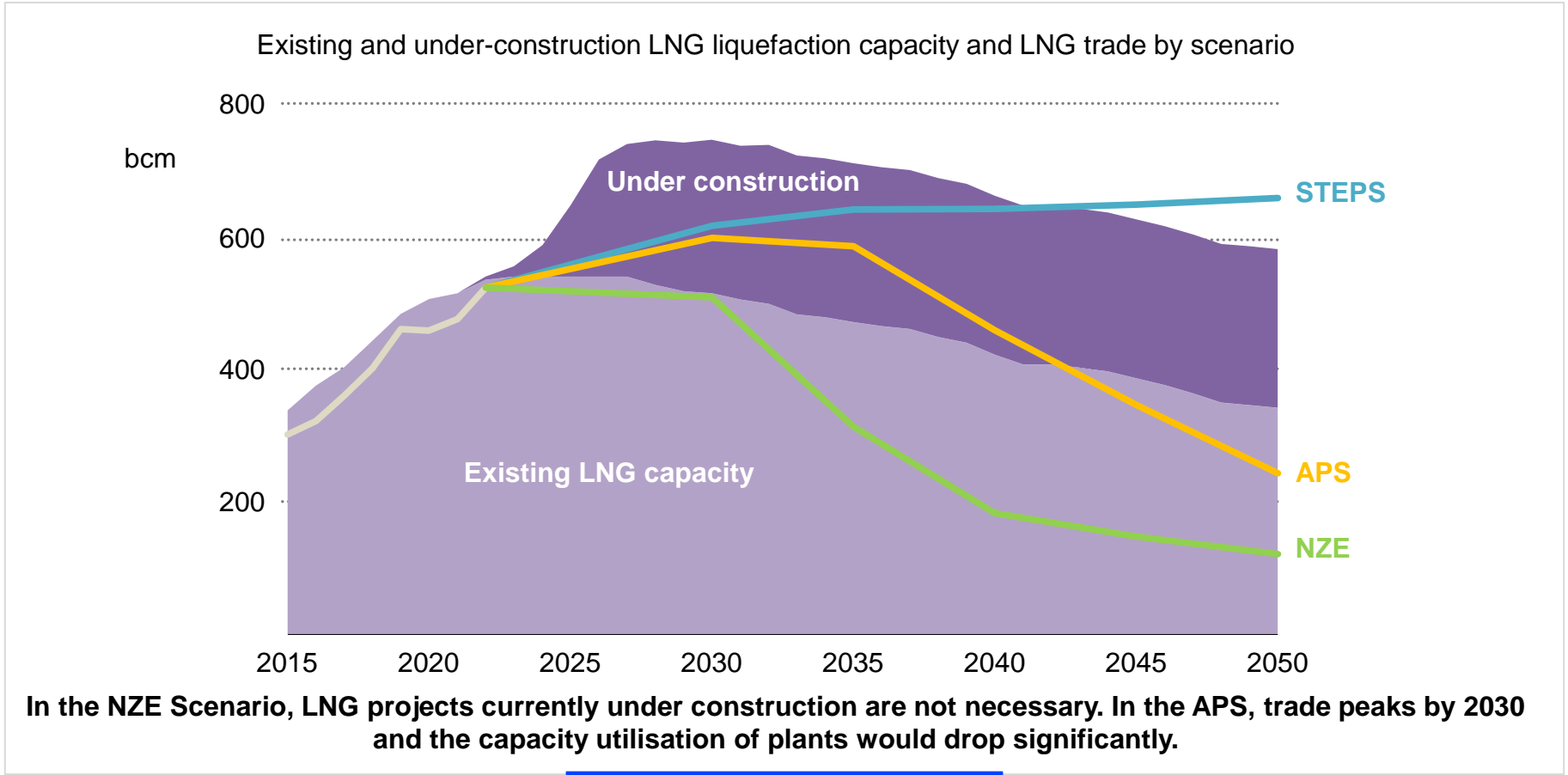


Oil and gas companies have generated around USD 3.5 trillion each year on average in recent years. The largest share goes to governments: only a tiny proportion goes directly to the clean energy economy

The investment dilemma

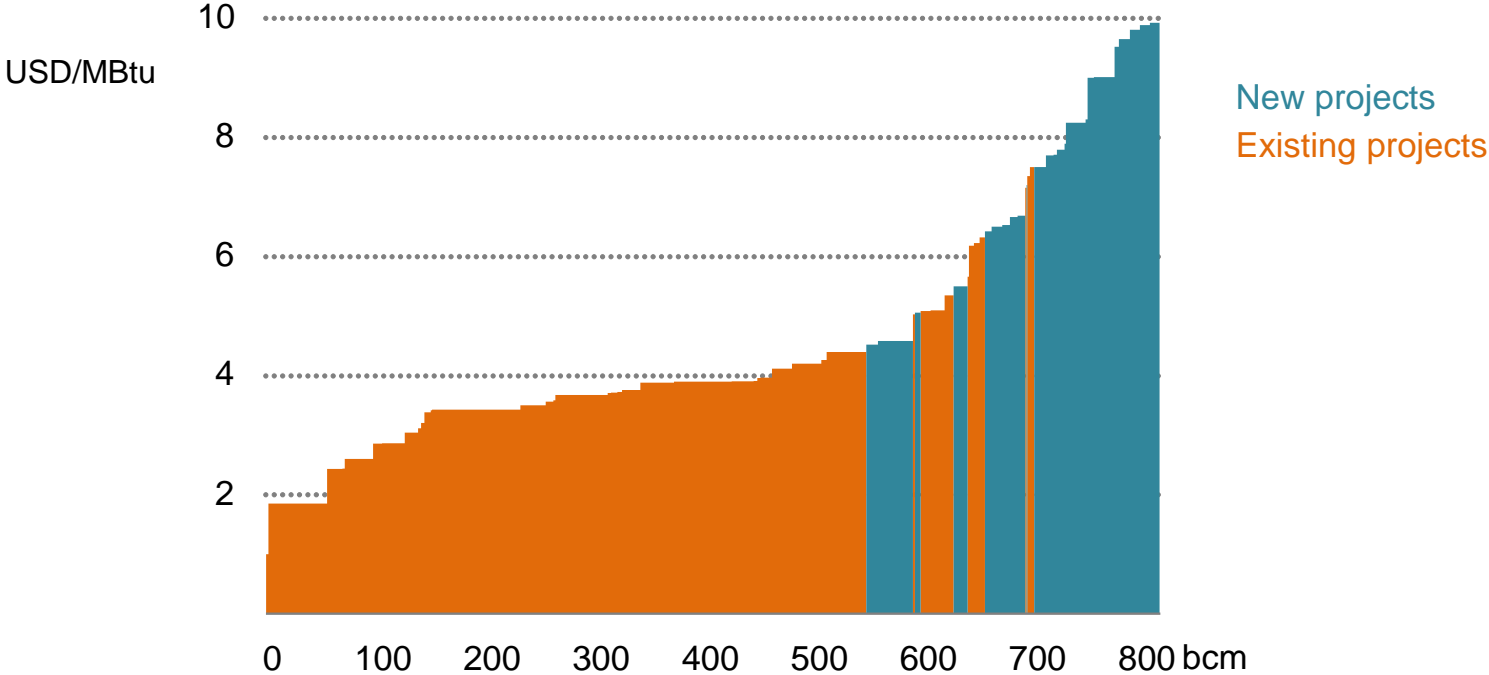


Another wave of LNG is coming... but how much is needed?



LNG projects under construction face risks in transitions

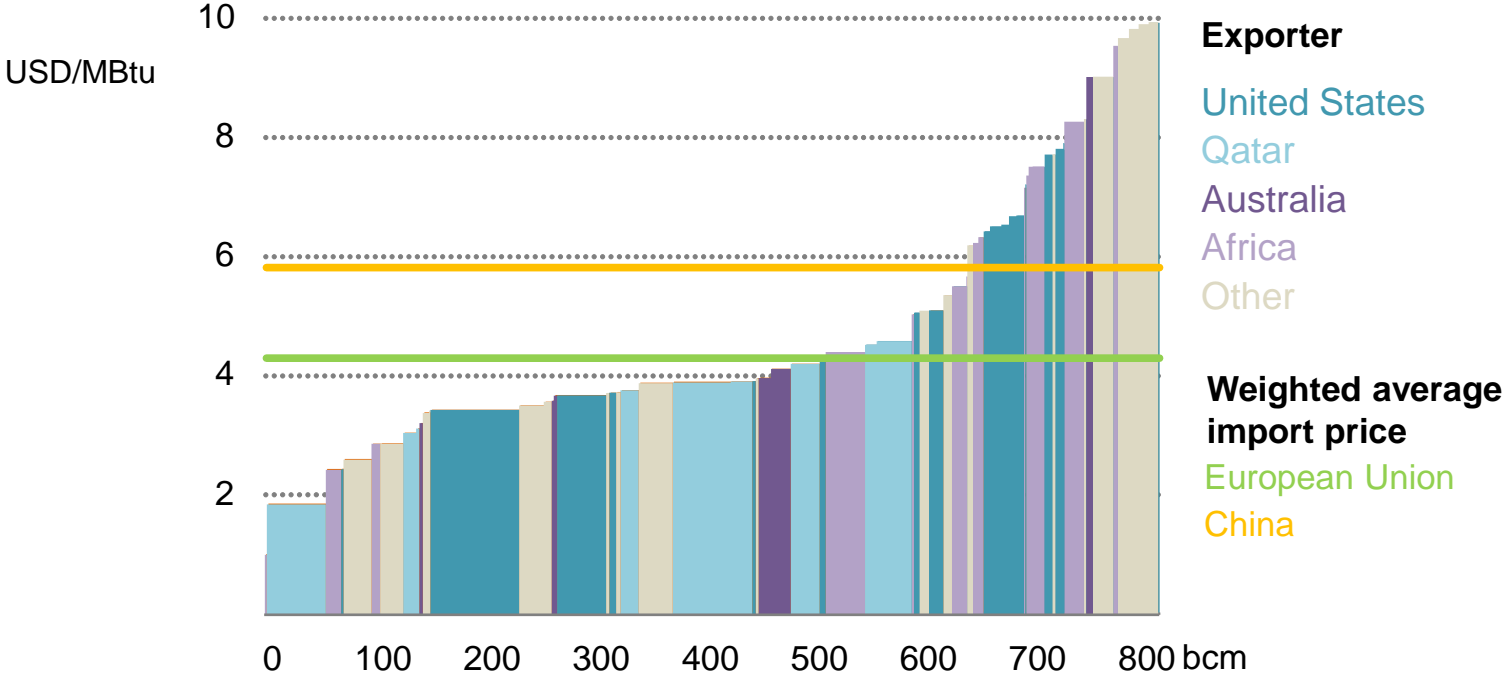
Delivered cost of existing and under-construction LNG supply compared with gas prices in the NZE Scenario, 2030



LNG exporters face intense competition for rapidly diminishing demand; most projects under construction fail to recoup their invested capital under NZE Scenario import prices.

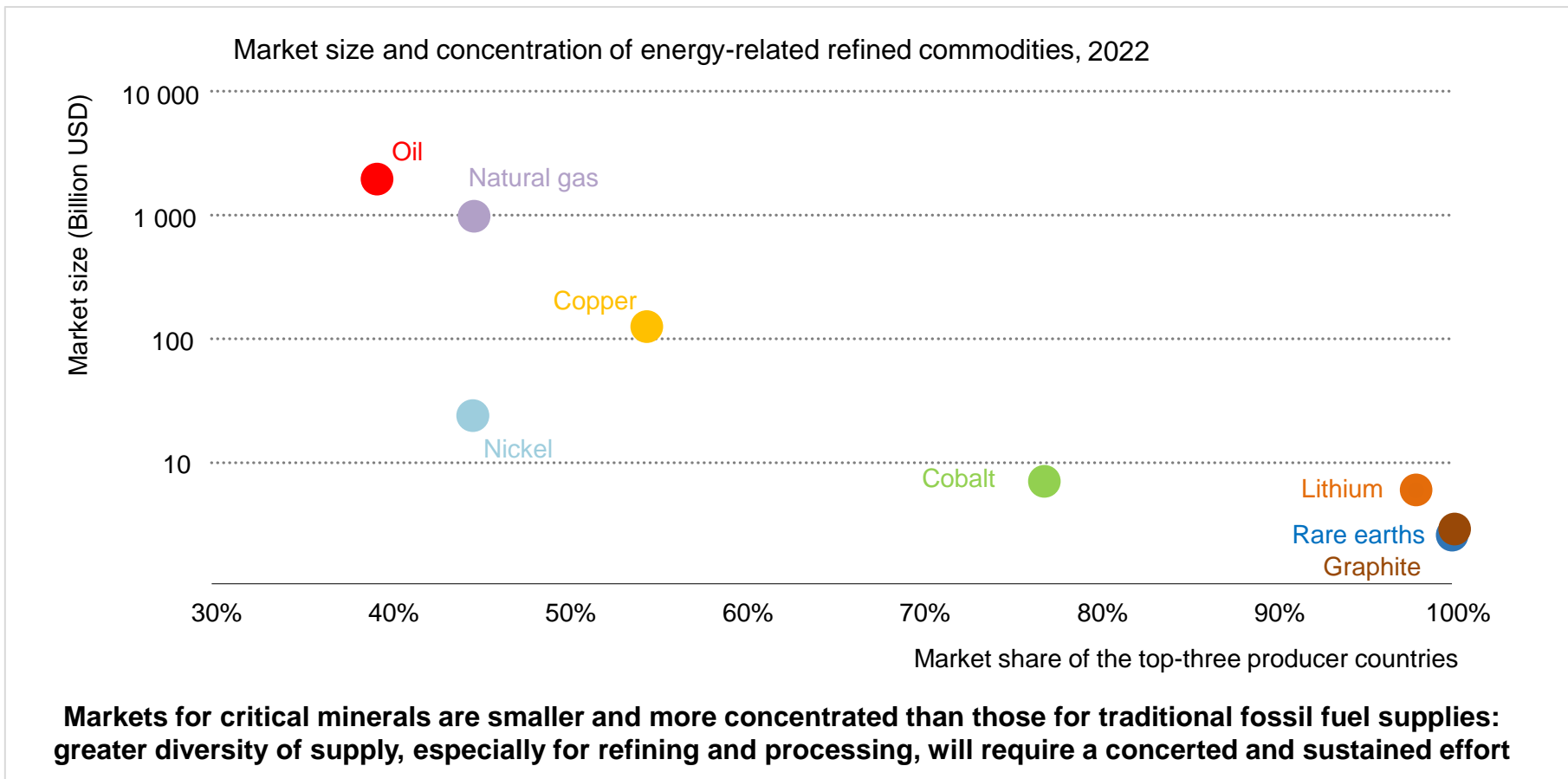
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Resilience in transitions requires greater diversity



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