

Net Zero Roadmap:

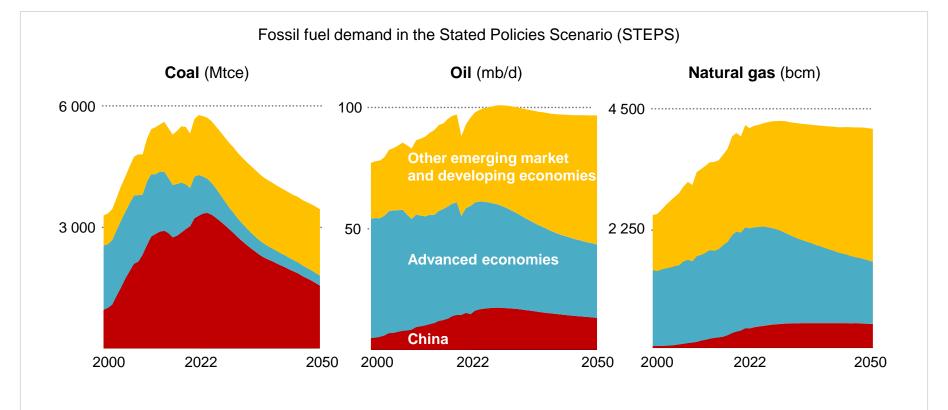
A Global Pathway to Keep the 1.5 °C Goal in Reach – 2023 Update

Julie Dallard

Paris, 10 June 2024

On track for a peak in all fossil fuels before 2030

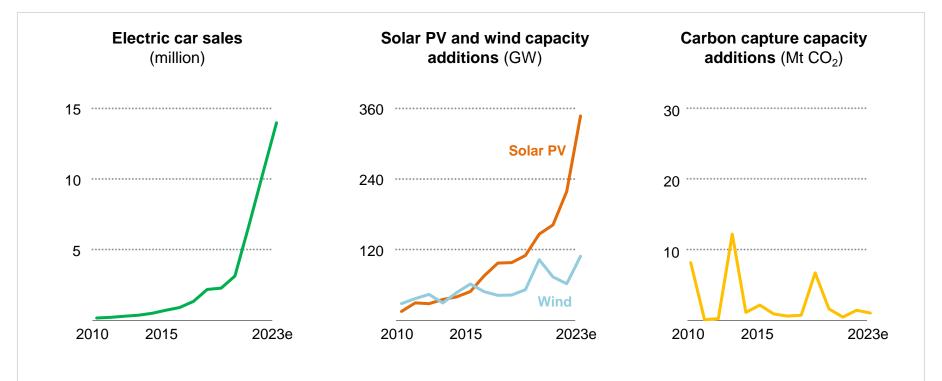




For the first time, today's policy settings are strong enough to generate peaks for coal, oil and natural gas this decade; the share of fossil fuels starts to edge downwards from 80% today to 73% in 2030

Clean energy growth is keeping the door to 1.5 °C open

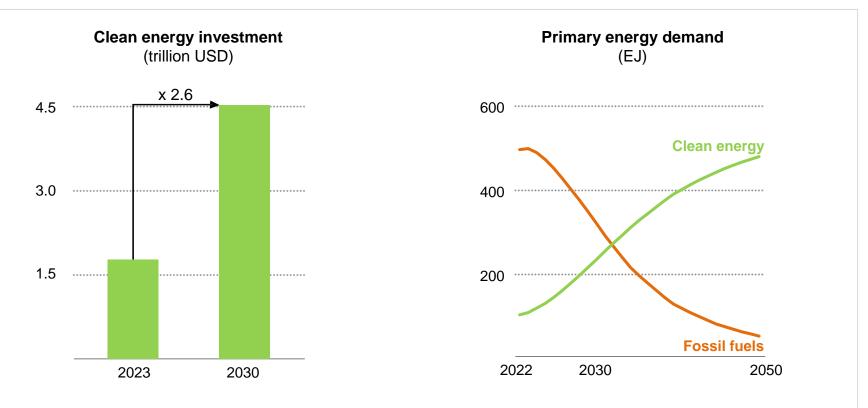




Spurred by policies and market competition, some key technologies have recently seen strong growth in deployment; while other technologies will require much more rapid progress to be aligned with a Net Zero pathway

Strong growth in clean energy drives a decline in fossil fuel demand

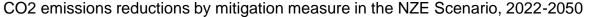


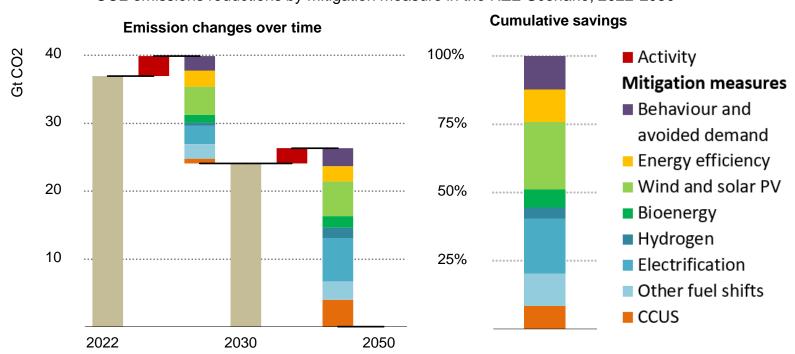


Clean energy investment needs to grow from USD 1.8 trillion today to USD 4.5 trillion in 2030. As clean energy grows and fossil fuel demand declines, there is no need for investment in new coal, oil and natural gas.

Measures to reach NZE by 2050





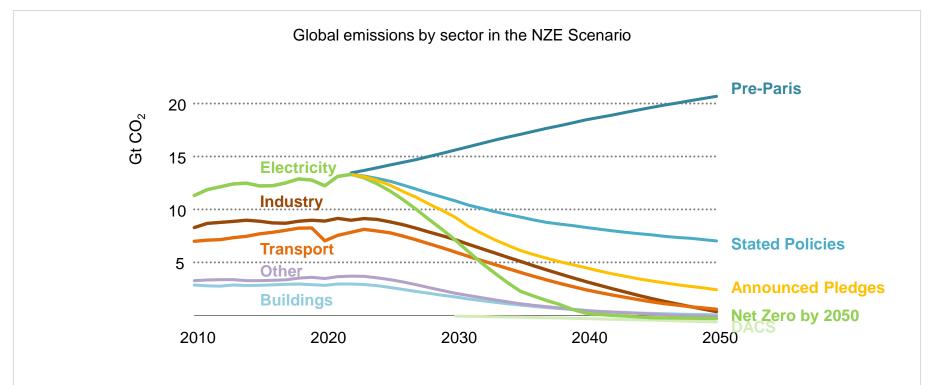


Notes: Activity = energy services demand changes from economic and population growth. CCUS includes BECCS and DACS

Expansion of solar PV, wind and other renewables, energy intensity improvements and direct electrification of enduses combined contribute 80% of emission reductions by 2030

Electricity leads the way to net zero



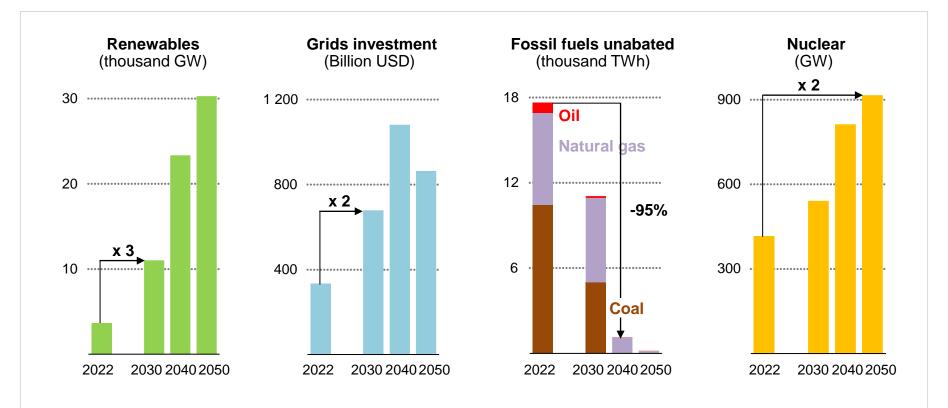


New policies & announced pledges pull emissions down and electricity is the first sector to reach net zero emissions, creating opportunities for electrification in other sectors to further drive down emissions

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Electricity systems are re-imagined for net zero electricity



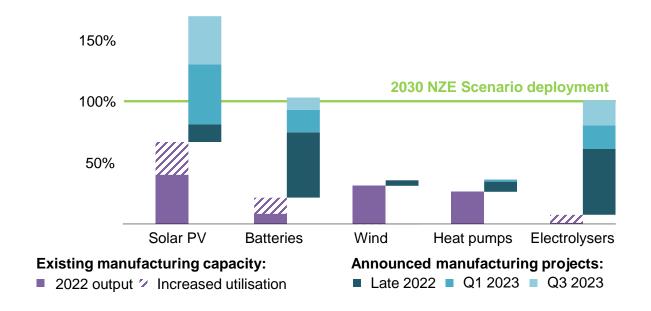


Renewables capacity triples by 2030 in the NZE Scenario and grid investment doubles, unabated coal is phased out by 2040 and nuclear capacity more than doubles by 2050

Clean energy manufacturing is booming



Current and announced manufacturing capacities relative to 2030 NZE Scenario deployment needs

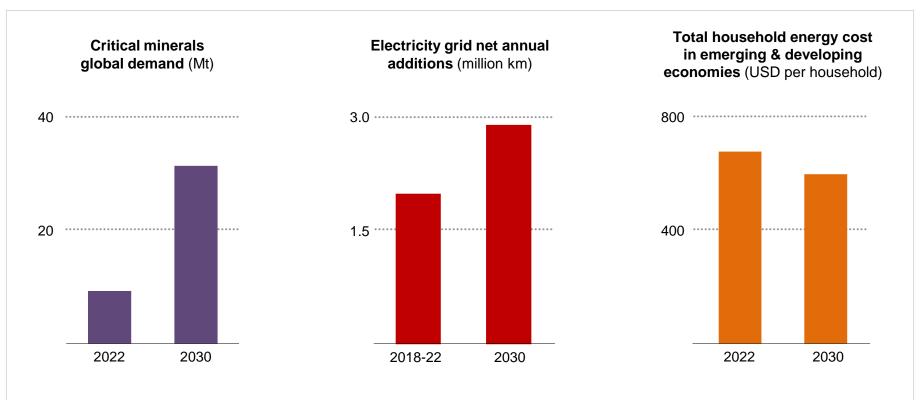


Driven by supportive policies and the growing geopolitical and commercial stakes of the industry, clean energy manufacturing capacity is booming, although it remains uneven across technologies and highly concentrated

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Managing the risks and opportunities that arise in energy transitions

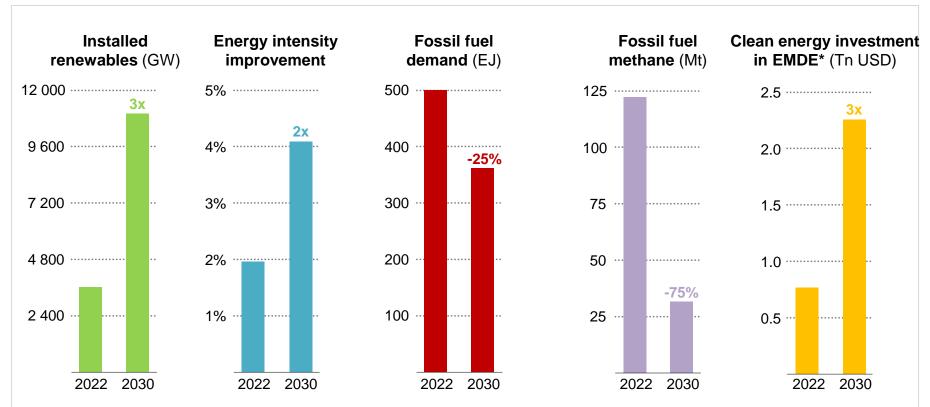




The pace of change required in the NZE Scenario represents an enormous undertaking in terms of ensuring energy security, ramping up infrastructure, and safeguarding energy affordability.

Five pillars to keep 1.5 °C alive





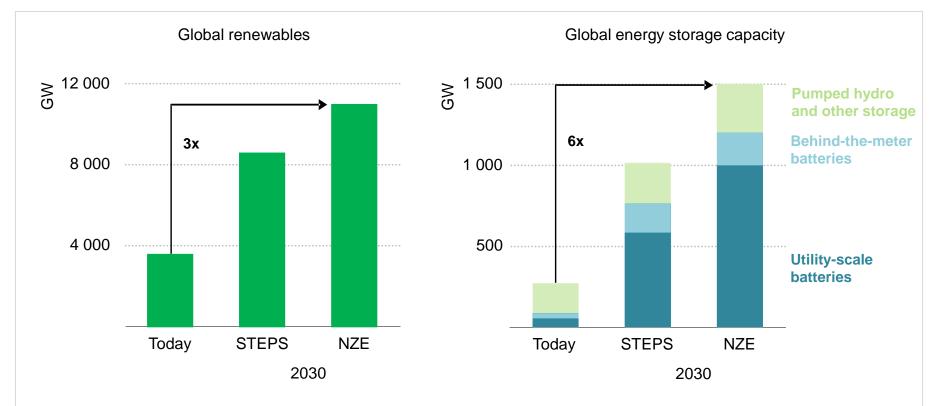
A comprehensive energy package for COP28 needs to drive the growth in clean energy, support emerging and developing economies in the transition, and recognise the need to reduce fossil fuel demand



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Batteries play a critical role in tripling renewables by 2030

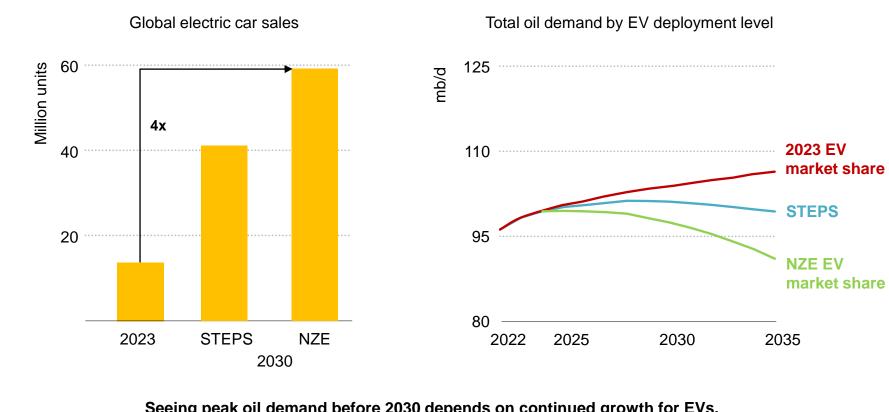




To achieve the COP28 goal of tripling renewables by 2030, storage capacity needs to rise sixfold to over 1 500 GW, with batteries making up 90% the growth, complementing pumped hydro, compressed air and thermal storage.

EV competitiveness: key for oil use reduction and efficiency goals





Seeing peak oil demand before 2030 depends on continued growth for EVs. Cheaper batteries mean more affordable EVs for consumers, further increasing EV deployment.

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