World Energy Outlook 2021

WEO Week Day 2 - Energy security in transition

19 October 2021

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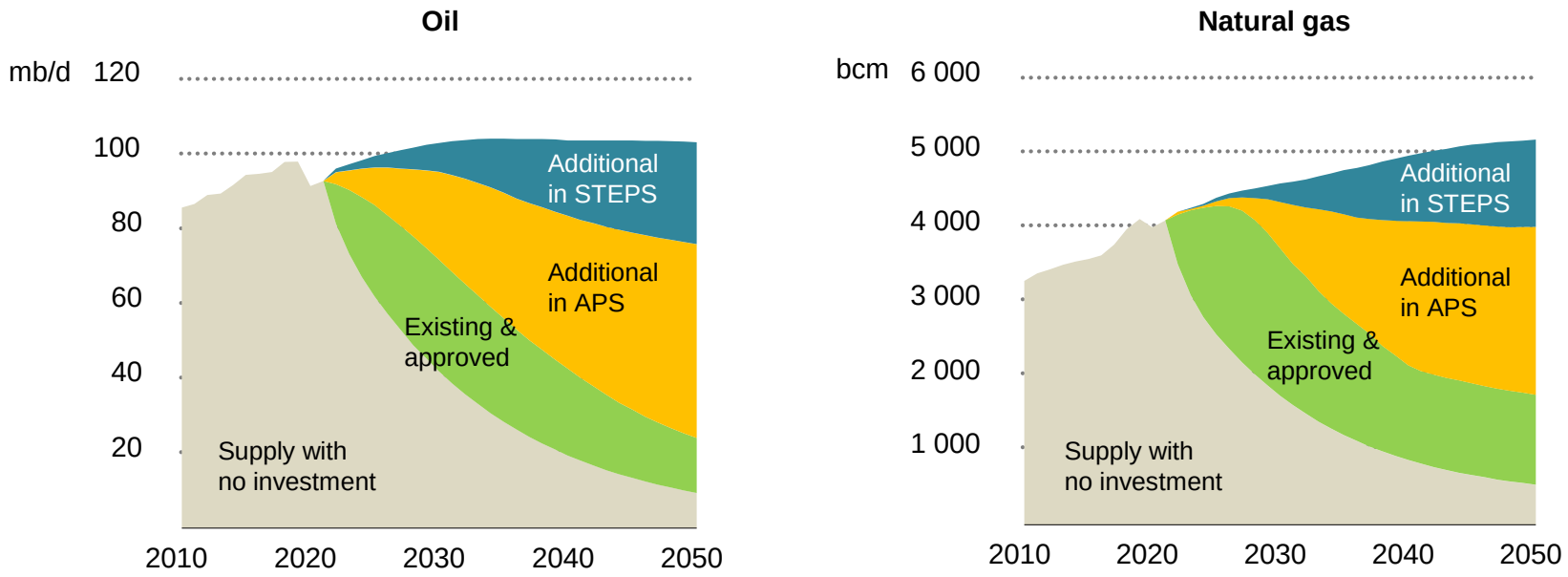
International Energy Agency

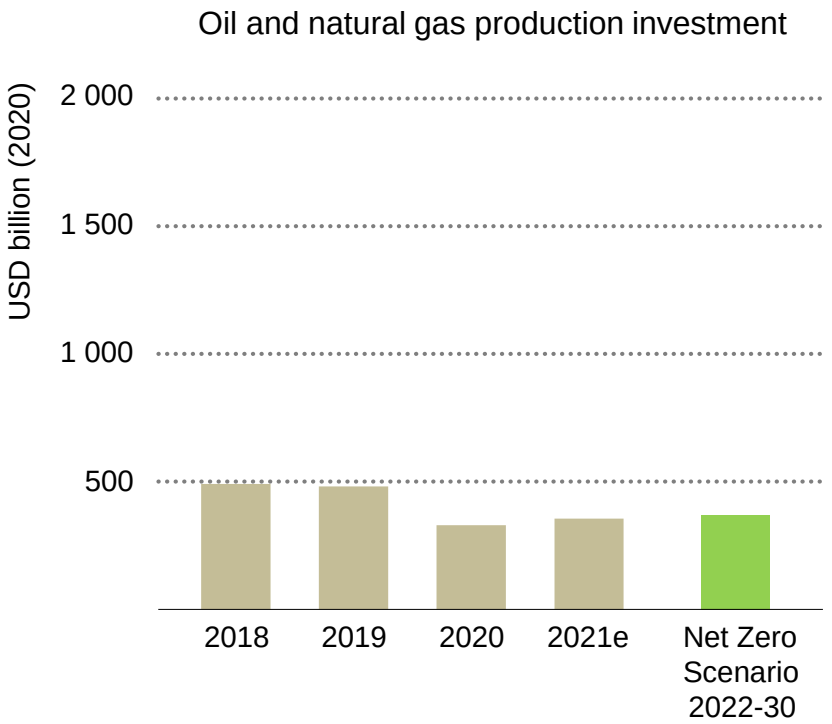
Huge uncertainties over oil and gas demand trajectories

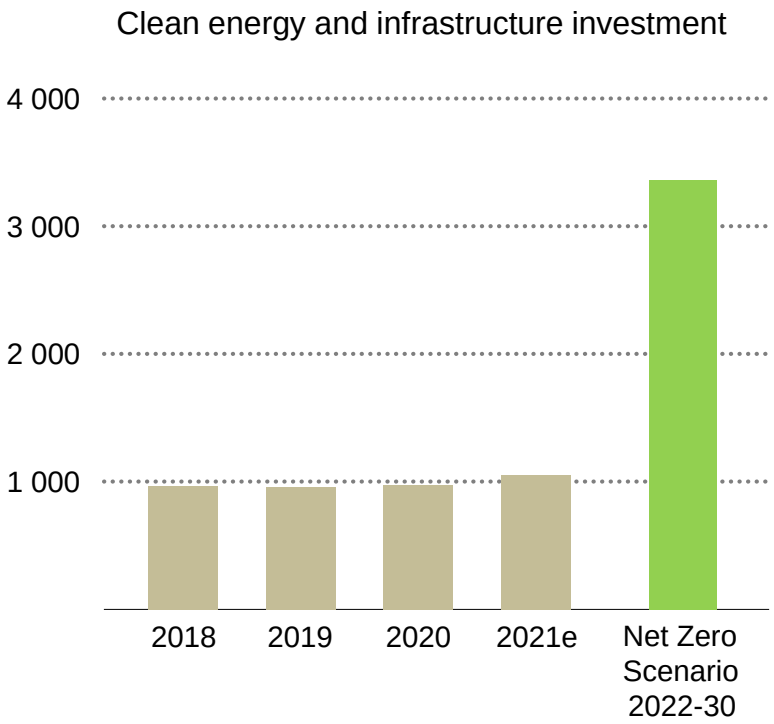
Global oil and natural gas demand and declines in supply



The variations in demand trajectories come with dramatically different implications for investment; a strong policy push to reduce oil and gas demand is key to minimising the risk of market tightening

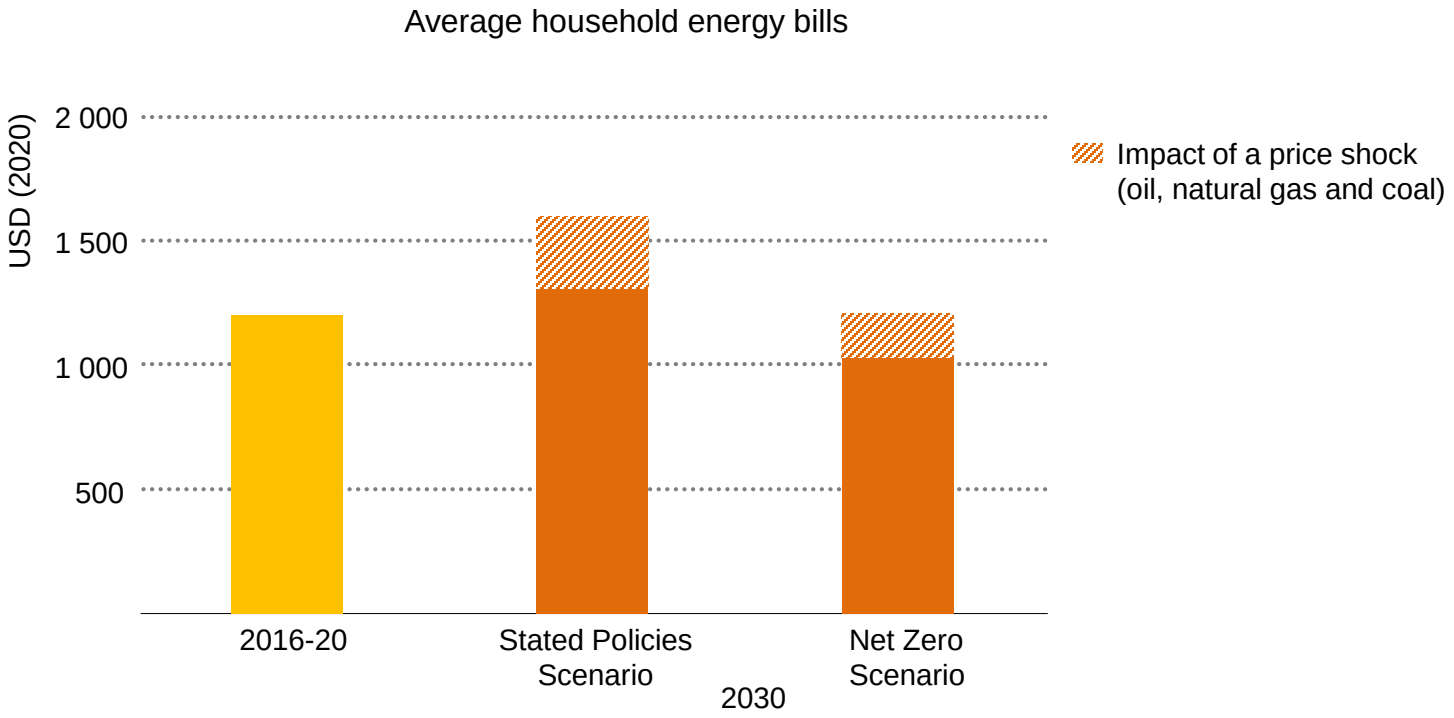
Looming risk of more turbulence ahead for energy markets





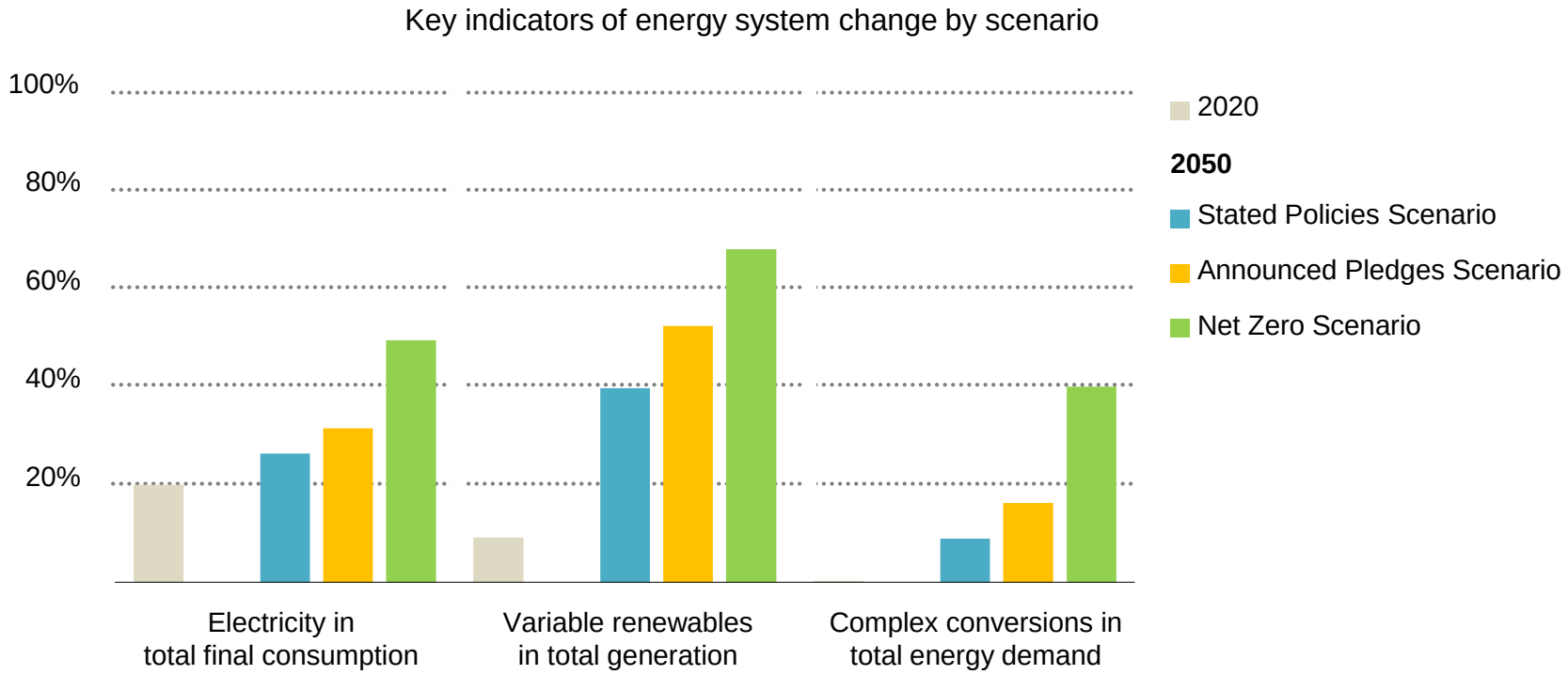
The world is not investing enough to meet its future energy needs; oil and gas investment is geared to a world of stagnant or falling demand, while transition-related spending is not rising nearly fast enough

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

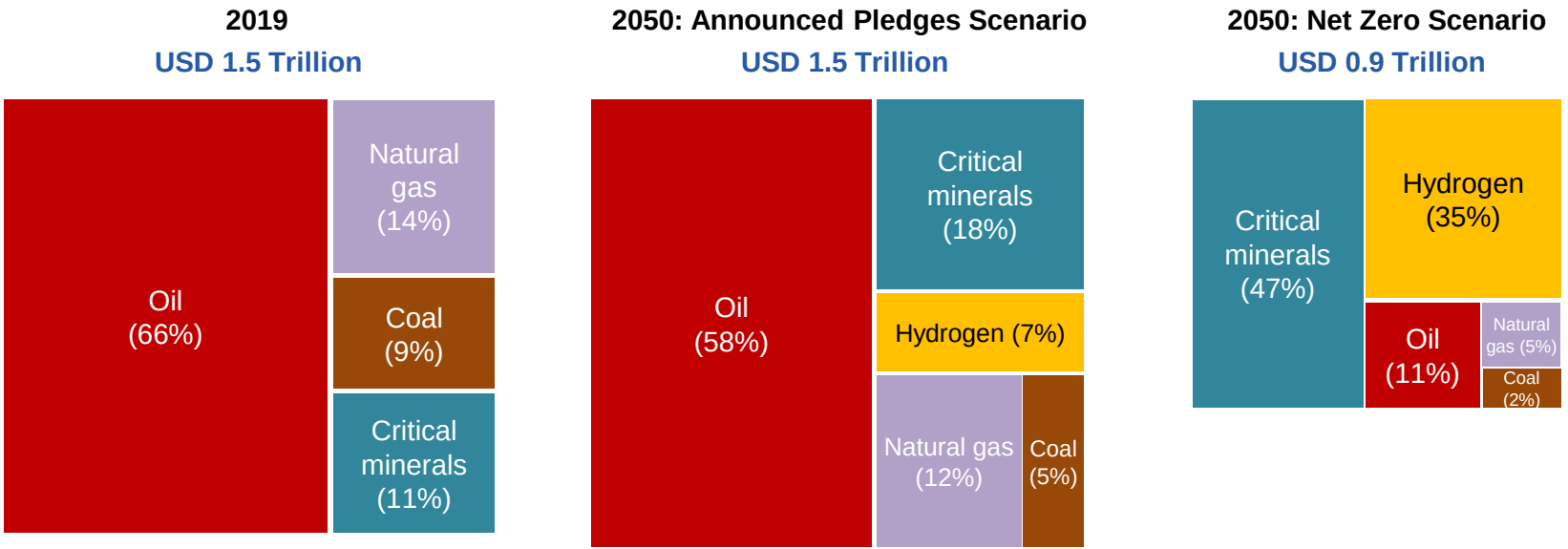
Market design and infrastructure in integrated systems



New energy security challenges arise in systems increasingly reliant on electricity, low-carbon technologies, higher levels of supply variability and more complex conversions

Traditional risks and new vulnerabilities

Value of international energy-related resource trade

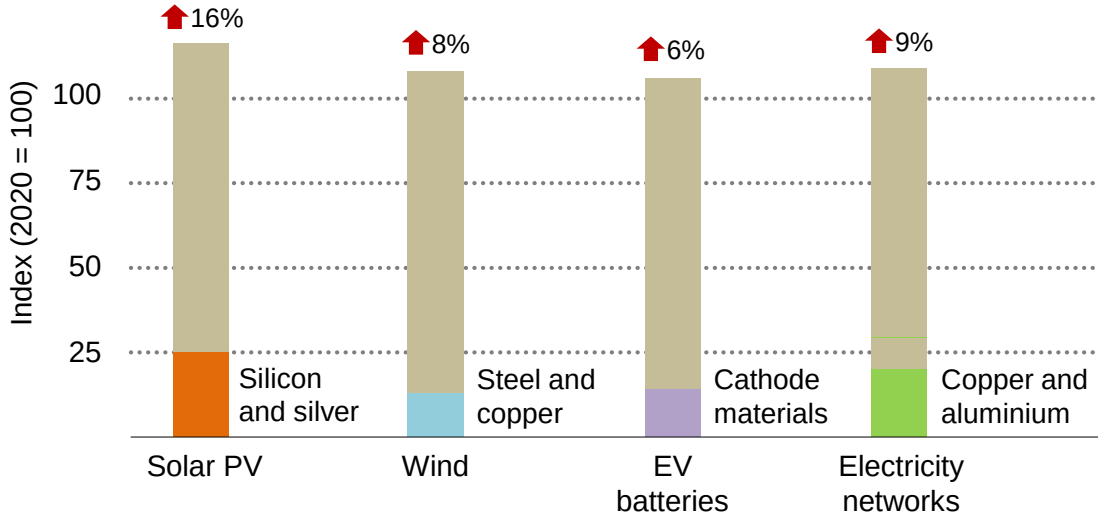


Under announced pledges, a growing share of oil and gas trade flows towards developing economies in Asia. In all scenarios, but especially in the net zero pathway, critical minerals and hydrogen-based fuels are on the rise

Traditional risks and new vulnerabilities

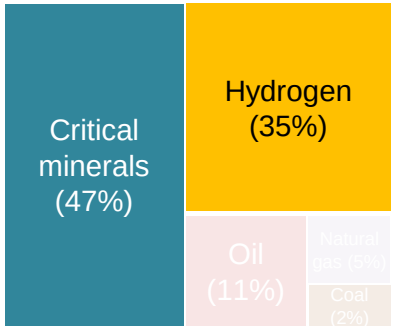
Value of international energy-related resource trade

Impacts of 2021 material price increases



2050: Net Zero Scenario

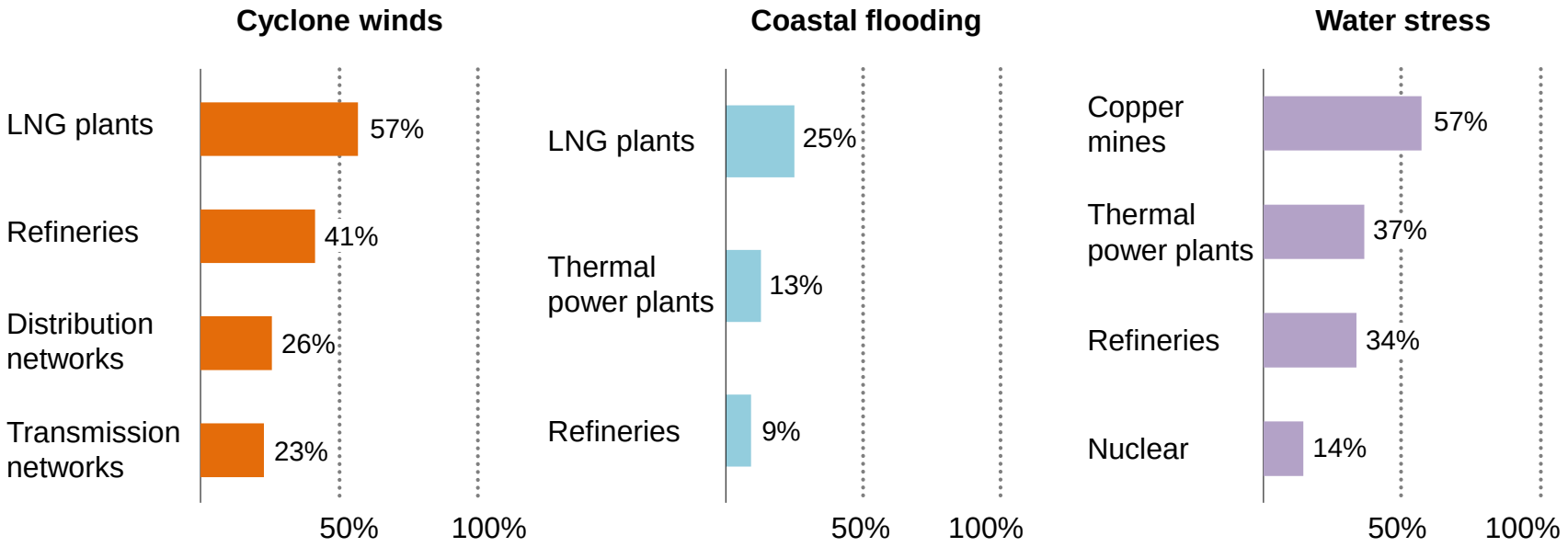
USD 0.9 Trillion



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

Growing stress from extreme weather events

Share of energy infrastructure exposed to high levels of physical climate risks, 2020



The increase in the frequency and intensity of natural disasters and extreme weather events highlights the urgent need for action to enhance the resilience of energy systems to climate change