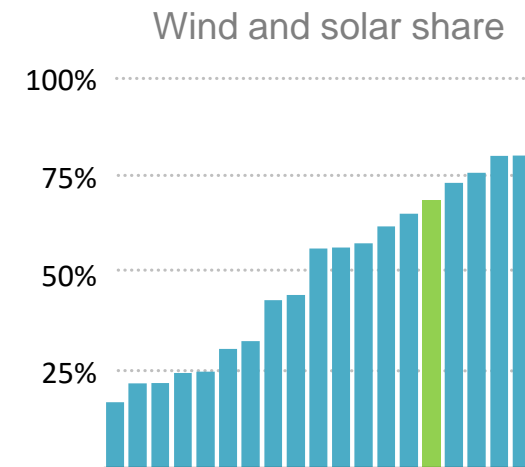
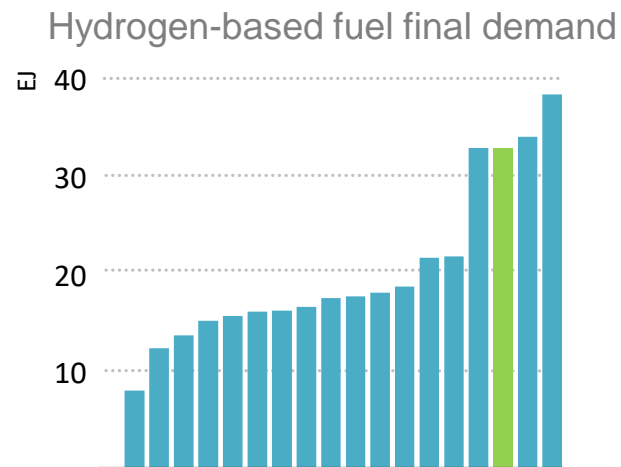
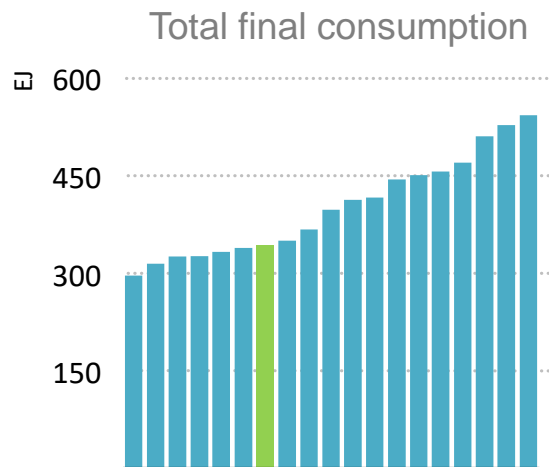
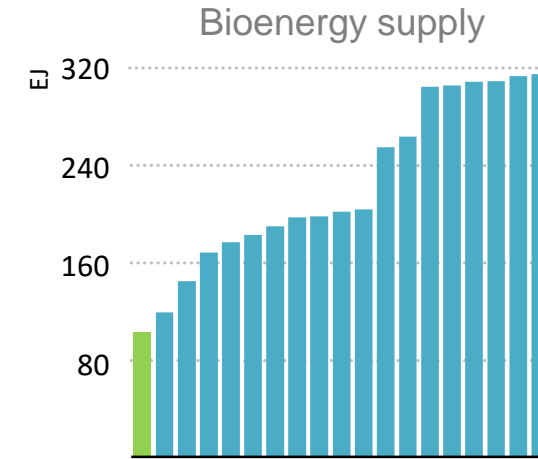
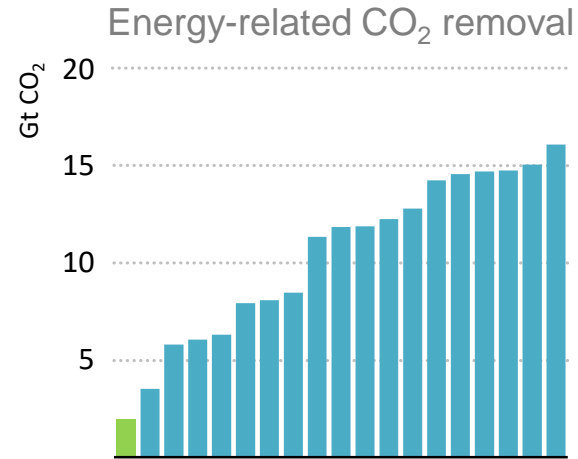
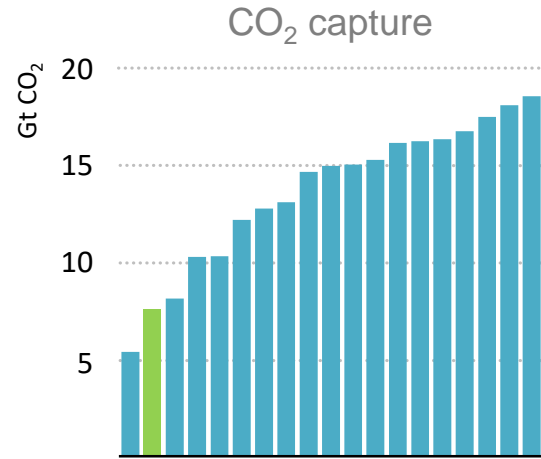




Net Zero by 2050: a Roadmap for the Global Energy Sector

Launch to the press, 18 May 2021

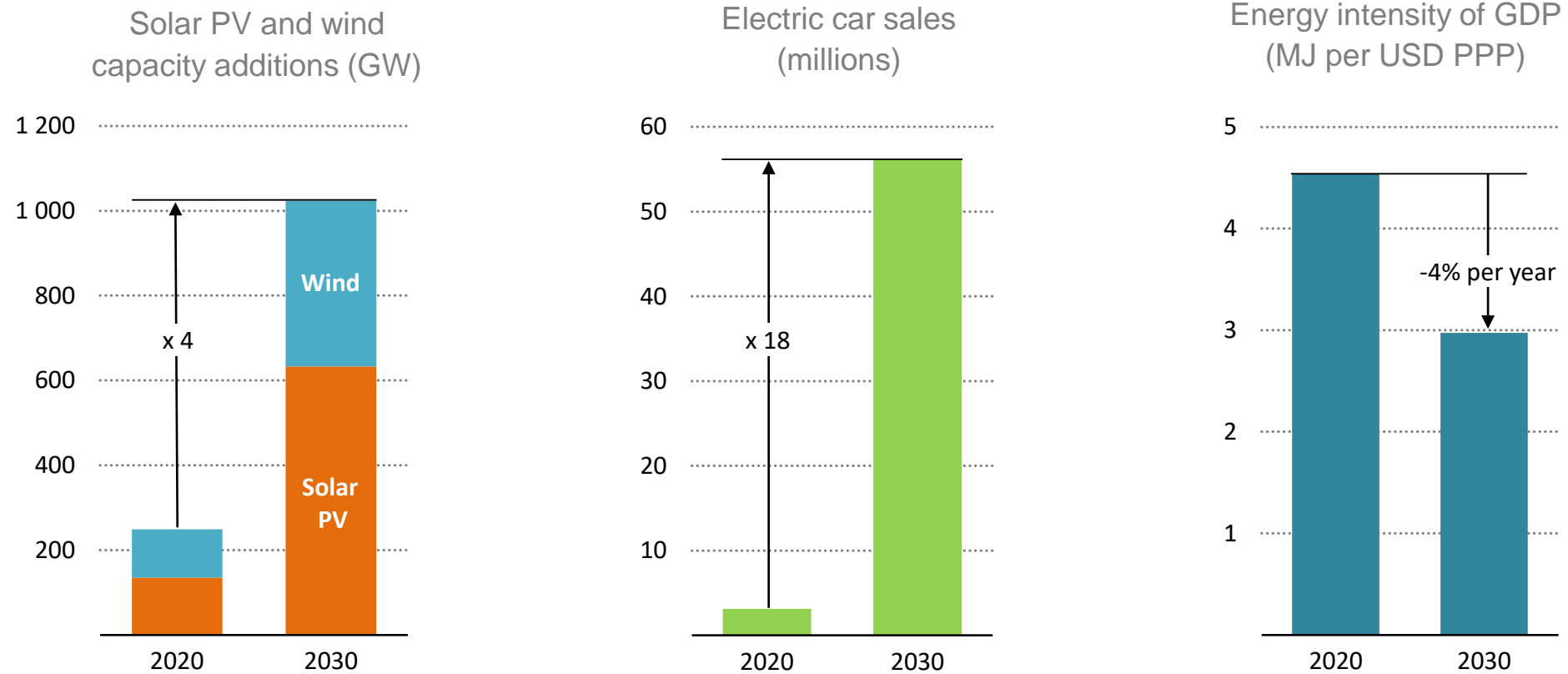
The IEA's NZE in 2050 compared with IPCC net-zero scenarios



■ Scenarios assessed by IPCC
■ IEA NZE scenario

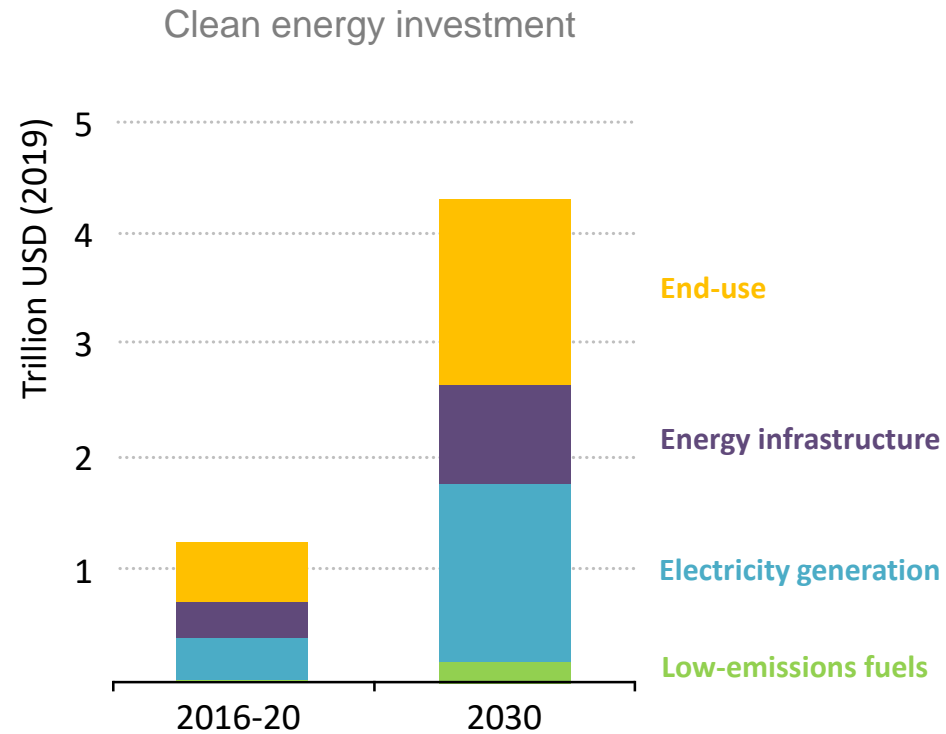
The IEA NZE scenario uses more renewables, energy efficiency, and hydrogen – and less CO₂ capture, negative emissions and bioenergy – than IPCC scenarios of a comparable ambition

Make the 2020s the decade of massive clean energy expansion

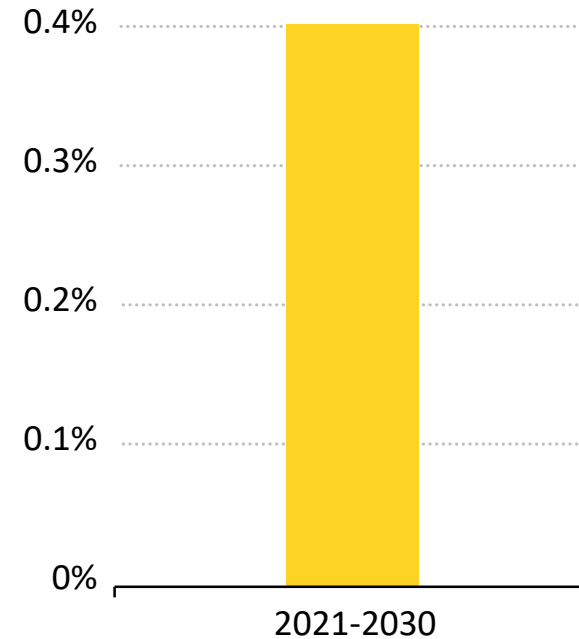


Technologies for achieving the necessary deep cuts in global emissions by 2030 exist, but staying on the narrow path to net-zero requires their immediate and massive deployment.

Drive a historic surge in clean energy investment

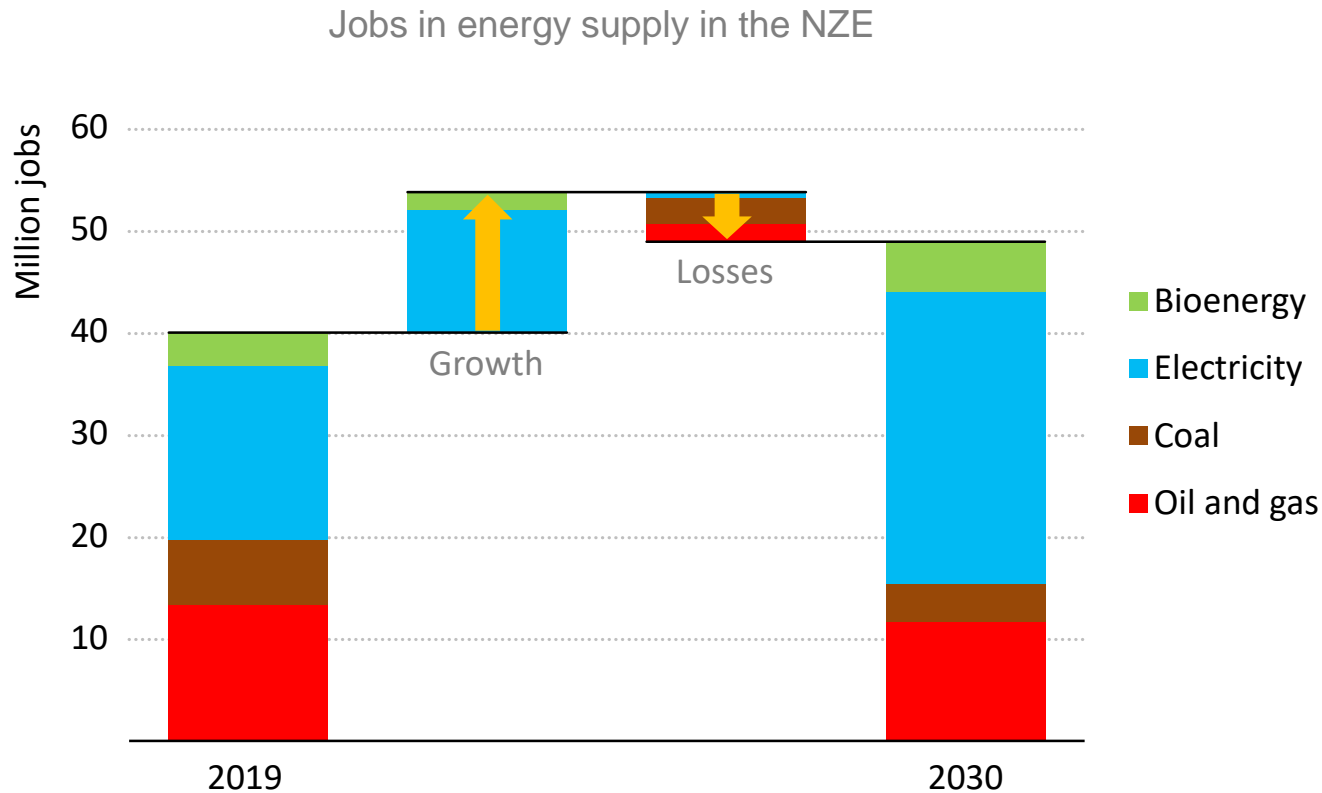


Additional annual global GDP growth in NZE

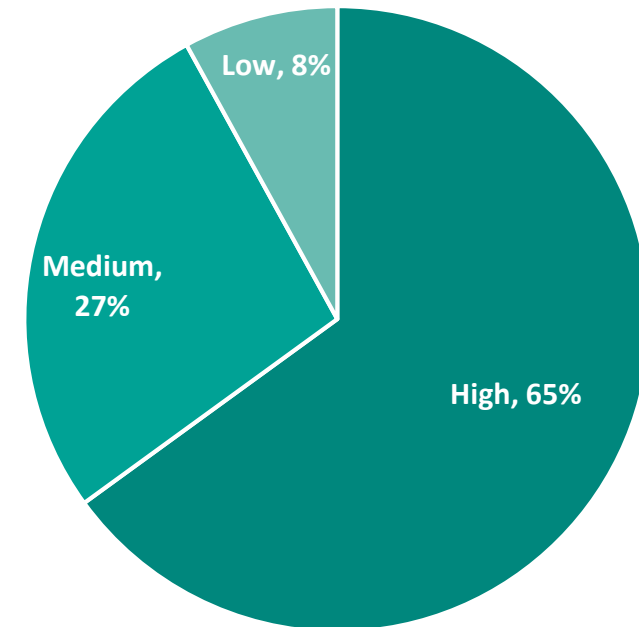


Annual clean energy investment more than triples by 2030 in the NZE scenario, driving an average 0.4% per year increase in global GDP to 2030 & speeding the recovery from the COVID-19 shock

Clean energy jobs will grow strongly but must be spread widely



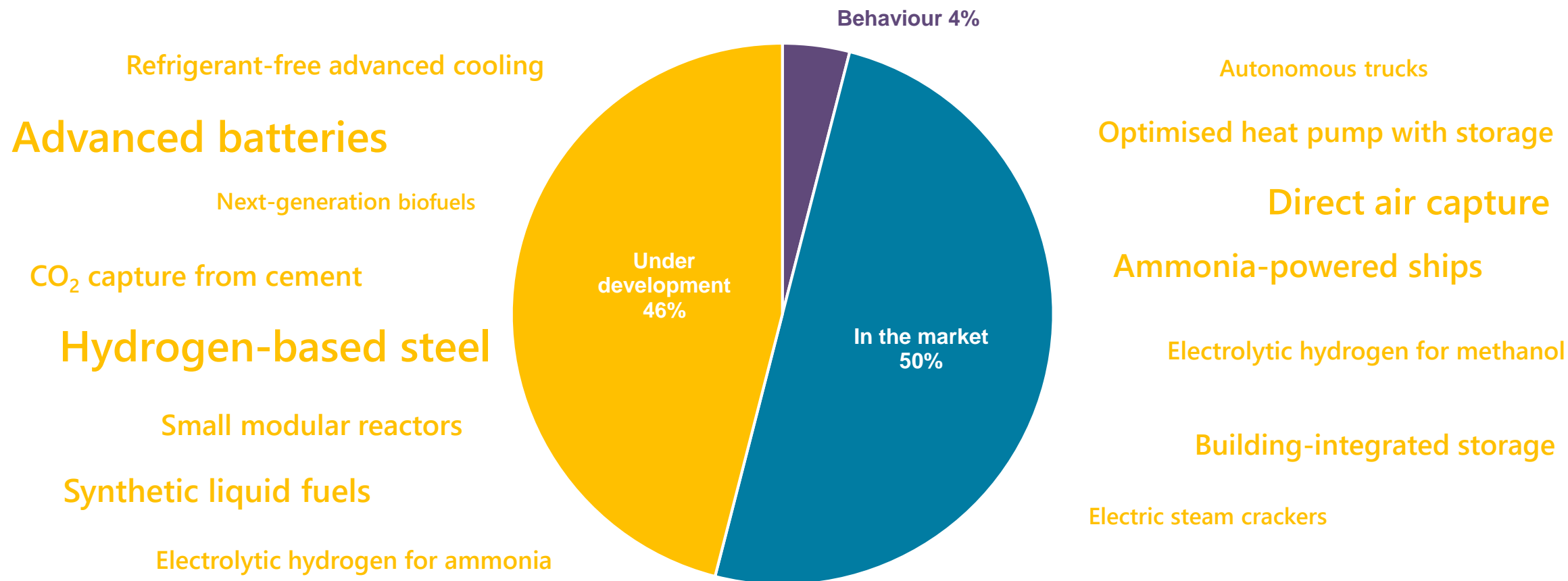
Skill level of new workers in the NZE, 2030



By 2030 there are 14 million jobs created in global energy supply, and a further 16 million in clean energy end-uses; but inclusive policies are needed to support reskilling & diversification in fossil-fuel dependent communities

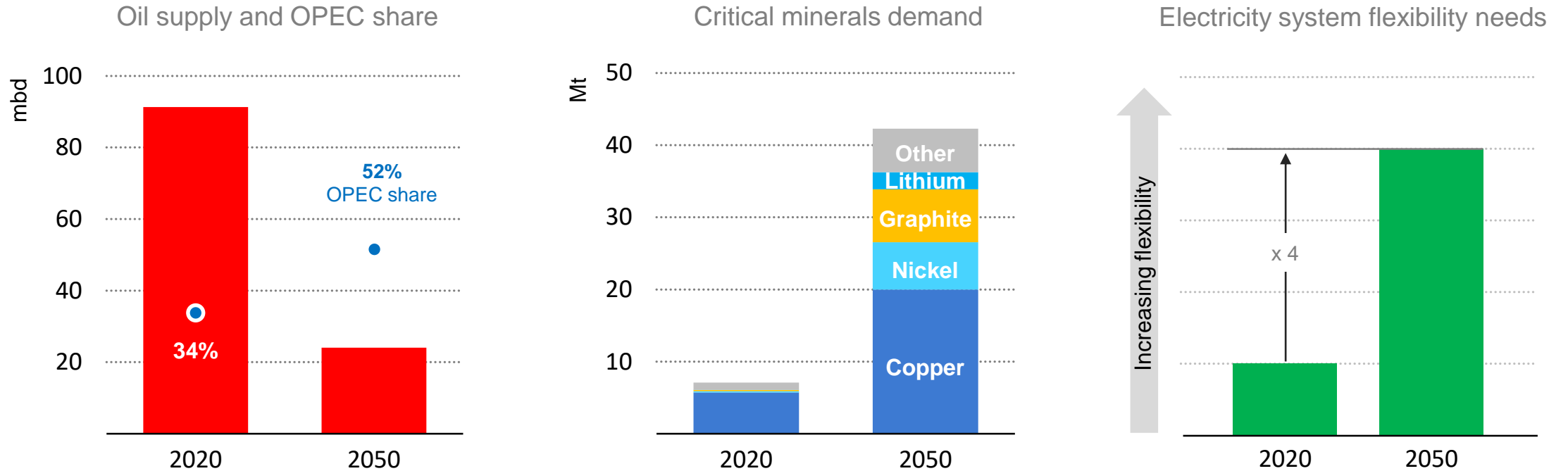
Prepare for the next phase of the transition by boosting innovation

CO₂ savings by technology maturity in 2050, NZE scenario



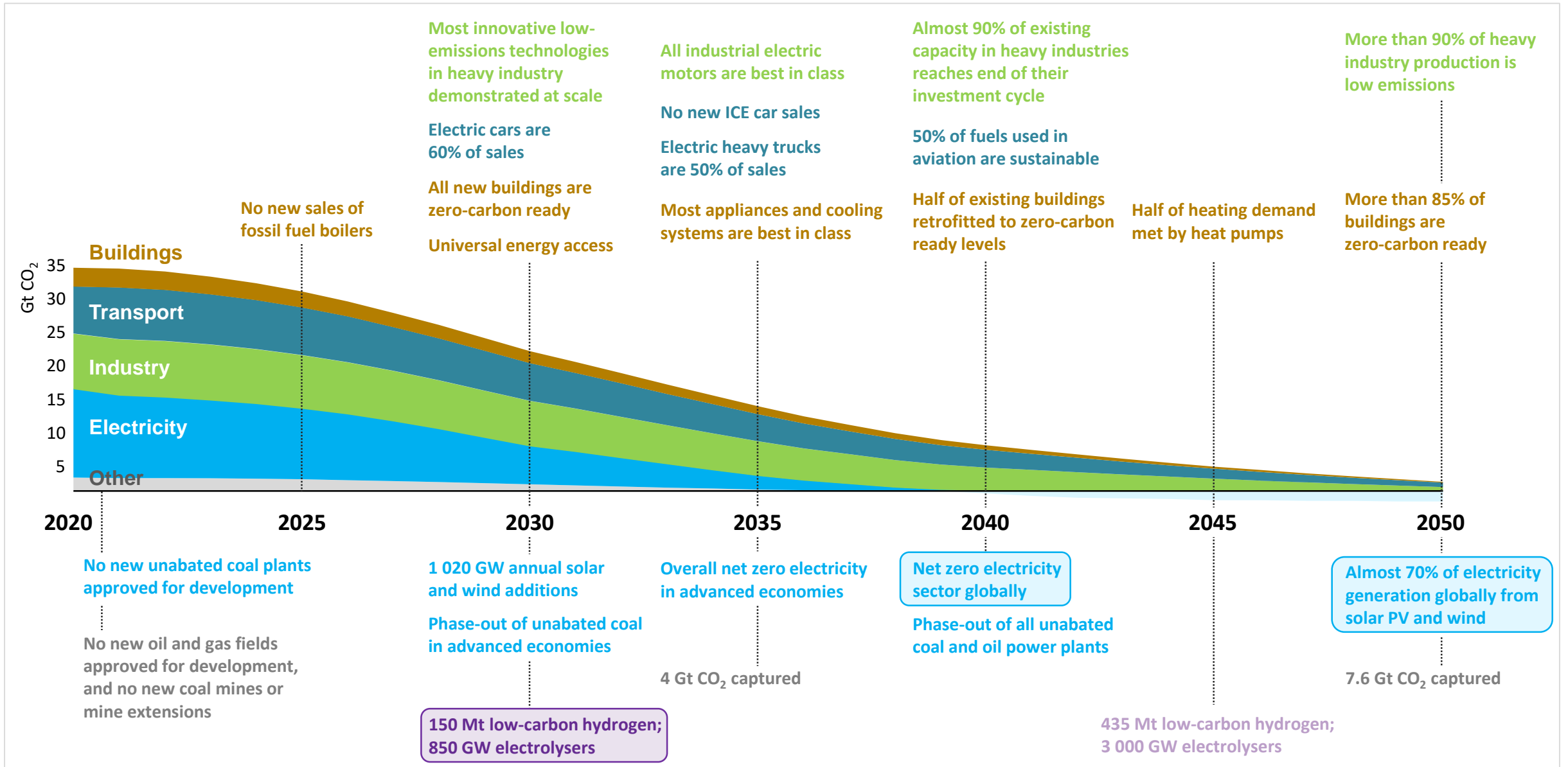
Unlocking the next generation of low-carbon technologies requires more clean energy R&D and \$90 billion in demonstrations by 2030; without greater international co-operation, global CO₂ will not fall to net-zero by 2050.

Address emerging energy security risks now



New energy security concerns emerge, and old ones remain; governments need to proactively plan for energy security risks related to market concentration, critical minerals and electricity systems.

Set near-term milestones to get on track for long-term targets



iea