

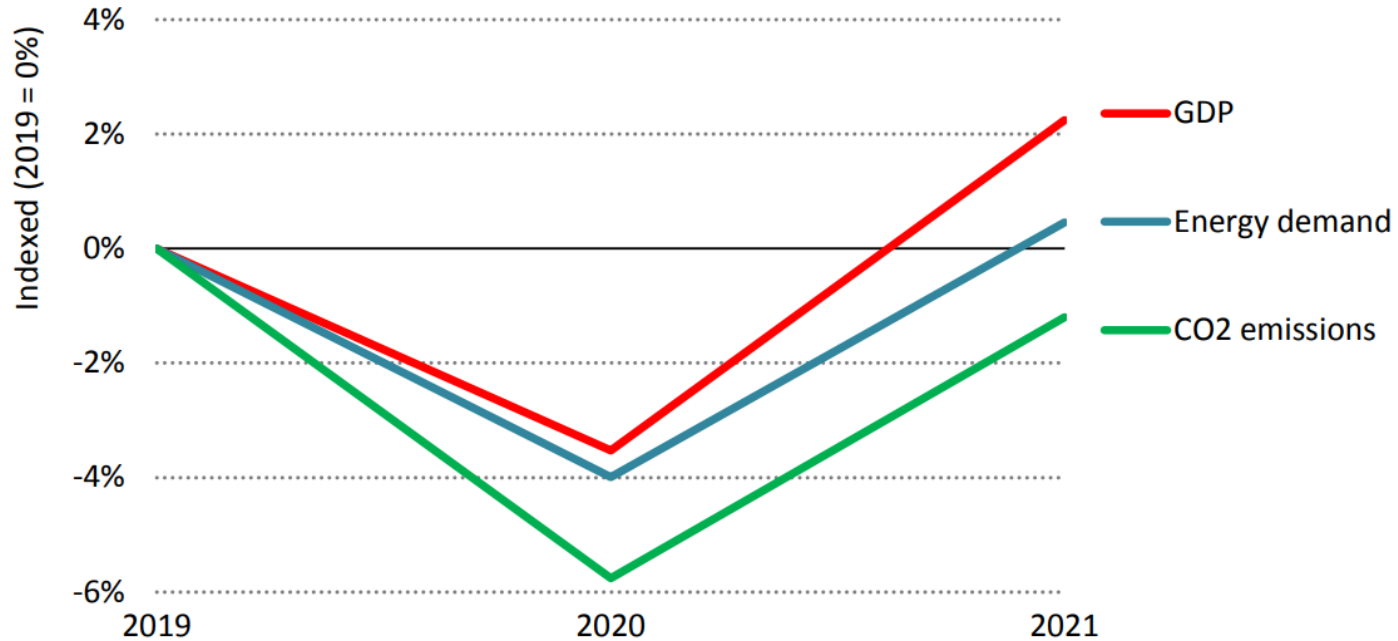


Unlocking the potential of digital technologies for a sustainable energy transition

6 July 2021, Vida Rozite

Global CO₂ emissions are on the rebound

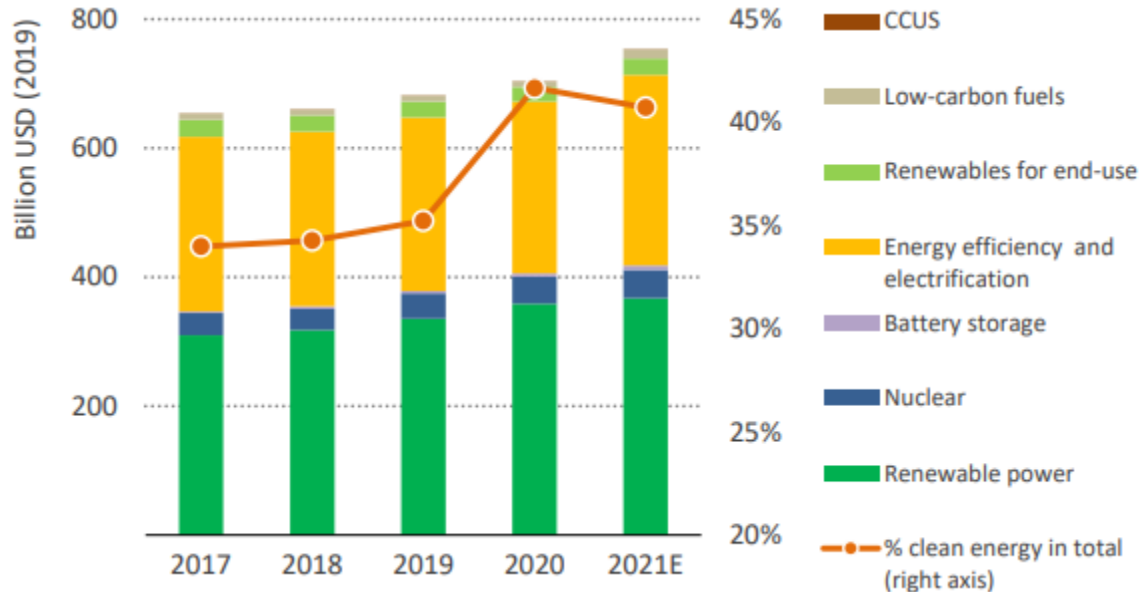
Evolution of global GDP, total primary energy demand, and energy-related CO₂ emissions, relative to 2019



Global energy demand is set to increase by 4.6% in 2021, surpassing pre-Covid-19 levels.

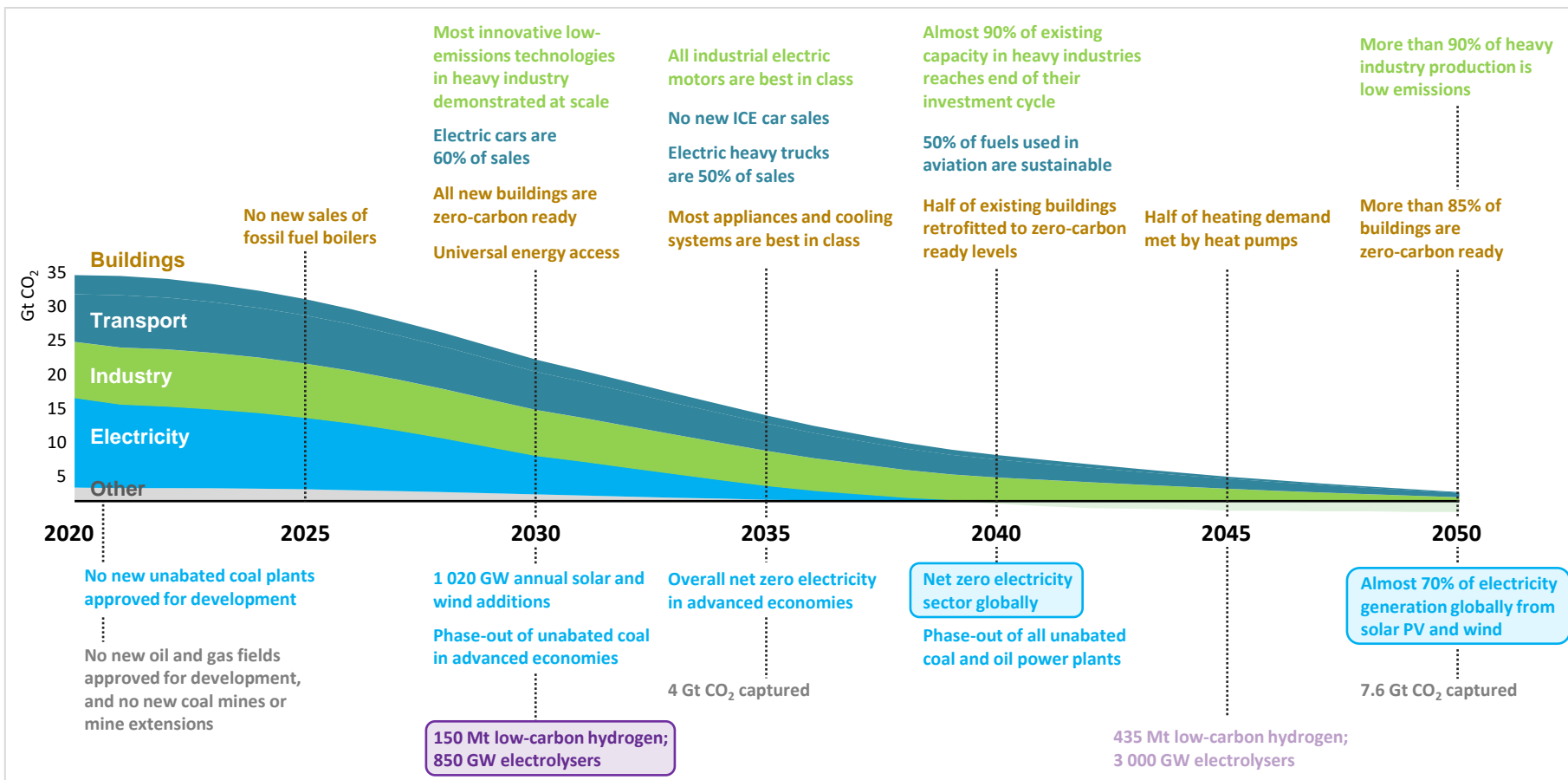
Clean energy investment is growing slowly

Global investment in clean energy and energy efficiency 2017-2021

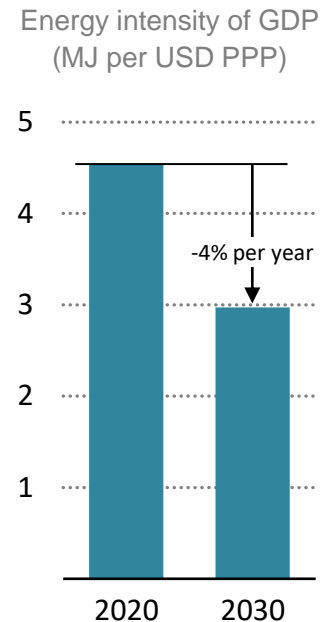
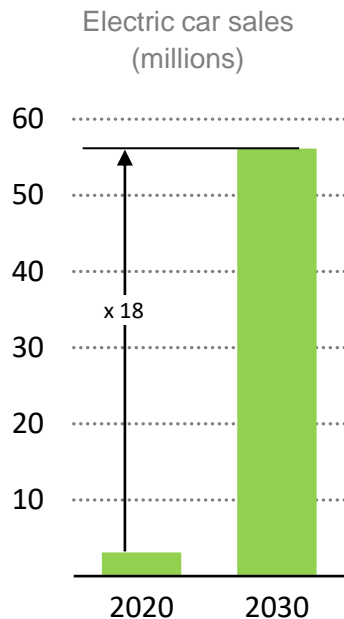
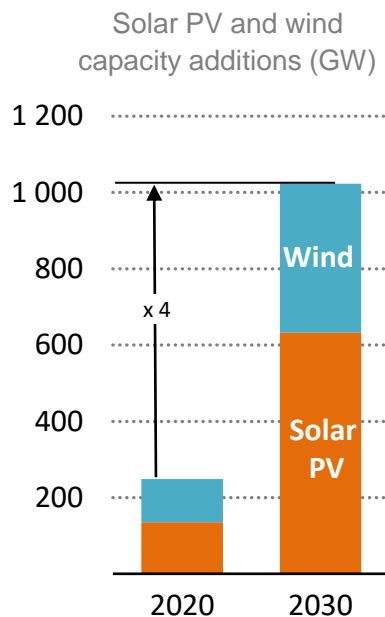


Total clean energy investment is set to rise in 2021 by around 7%

Milestones on the path to Net Zero by 2050

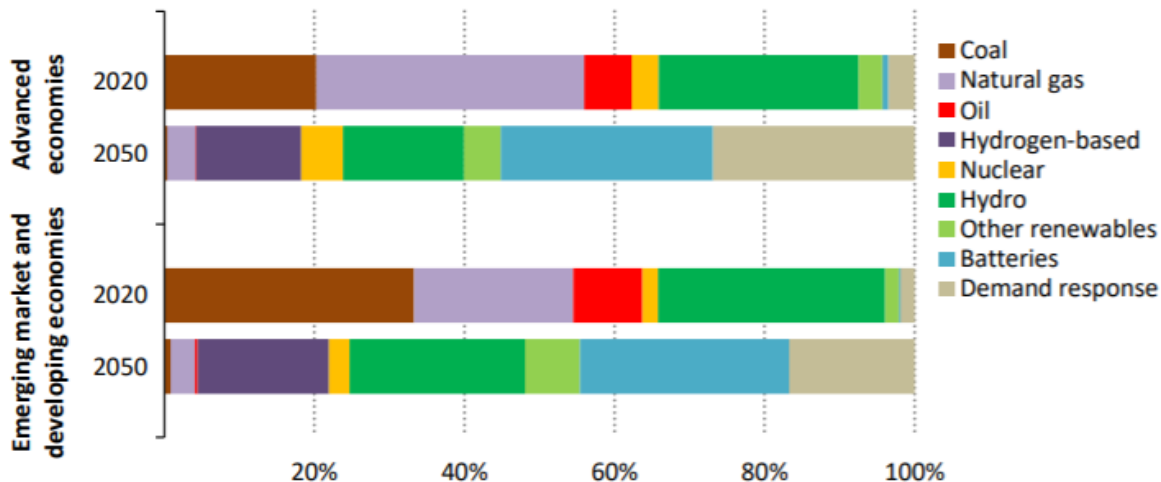


Massive clean energy deployment needed for NZE



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.

Figure 4.18 ▶ Electricity system flexibility by source in the NZE

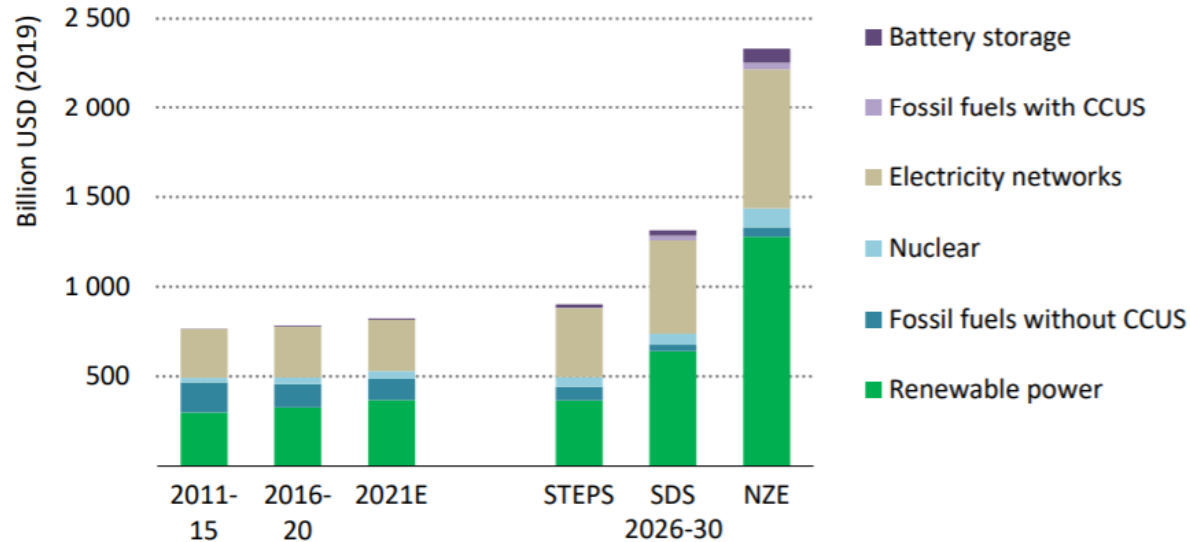


IEA. All rights reserved.

To meet four-times the amount of hour-to-hour flexibility needs, batteries and demand response step up to become the primary sources of flexibility

Significant increase in investment needed

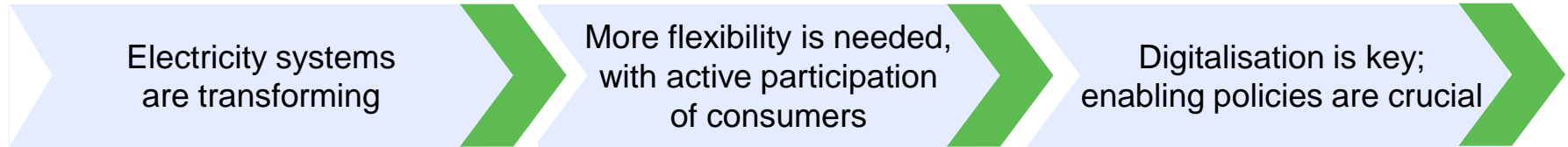
Global investment in the electricity sector compared with annual average investment needs, 2025-2030, by scenario



IEA. All rights reserved.

Note: STEPS = Stated Policies Scenario, SDS = Sustainable Development Scenario, NZE = Net Zero Emissions by 2050.

World Energy Investment 2021 - <https://www.iea.org/reports/world-energy-investment-2021>



- **Digitalisation** can help leverage opportunities:
 - Create a more interconnected and responsive electricity system
 - Support carbon emissions reduction
 - Help to minimise system cost and need for new investment
 - Improve stability, resilience and security

Digital Demand-Driven Electricity Networks Initiative (3DEN)

The IEA is providing actionable guidance to policy makers on the policy, regulatory, technology and investment context needed to accelerate progress on power system **modernisation** and effective **utilisation** of demand side resources.

Ensuring clean energy transitions create good jobs and supporting communities and individuals impacted by job losses

Clean energy transitions enhancing social and economic development

Good policy design to ensure equity and inclusion

People as active participants

Social dimensions

Direct and indirect energy demand of ICT

Circularity

Cyber resilience

iea