



World Energy Outlook 2020

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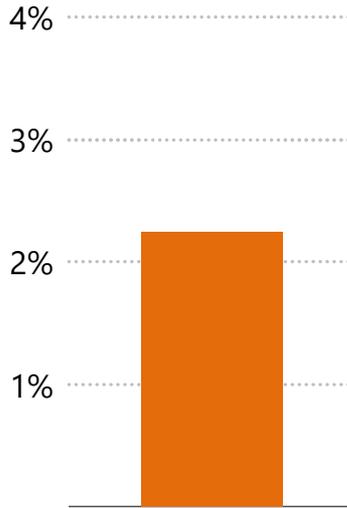
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Covid-19 and the energy outlook

- In an extraordinary year, 2 key questions:
 - How might the pandemic (and its aftermath) **reshape the energy sector**?
 - Does this disruption help, or hinder, the **prospects for rapid clean energy transitions**?
- Focus on pathways out of today's crisis over the next 10 years, amid 2 key uncertainties
 - **Duration and severity of the pandemic** and its economic impacts
 - **Response from energy policy makers** and the sustainability of the recovery
- Scenario-based approach more important than ever, to examine:
 - The **direction we are heading**, depending on the outlook for public health & the economy
 - What would be required to **reach net-zero emissions**

A shock to the energy system

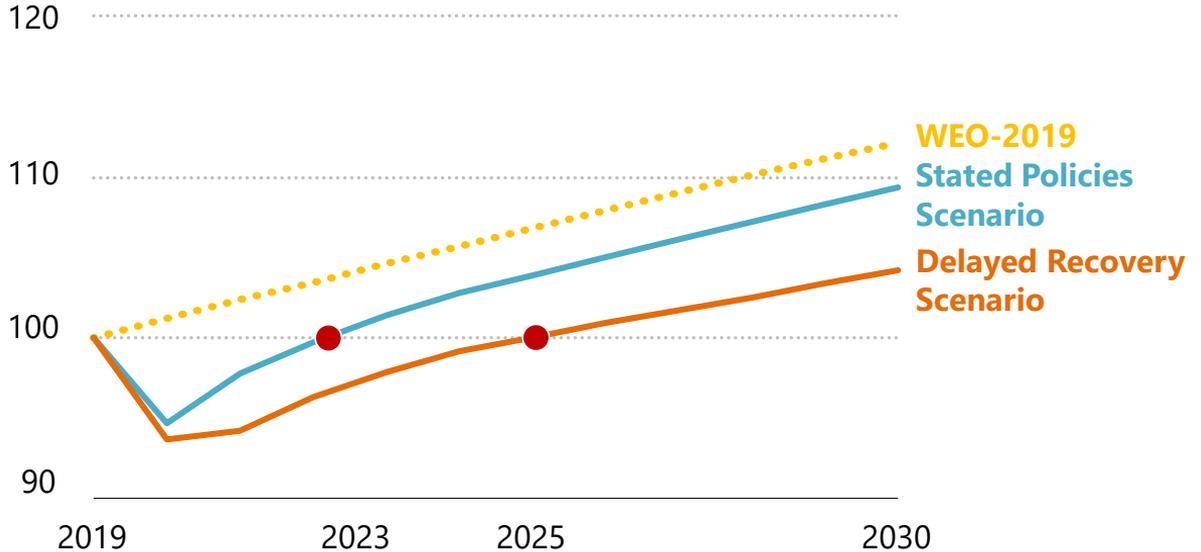
Average annual GDP growth
(2019-30)



Delayed Recovery Scenario

Energy demand

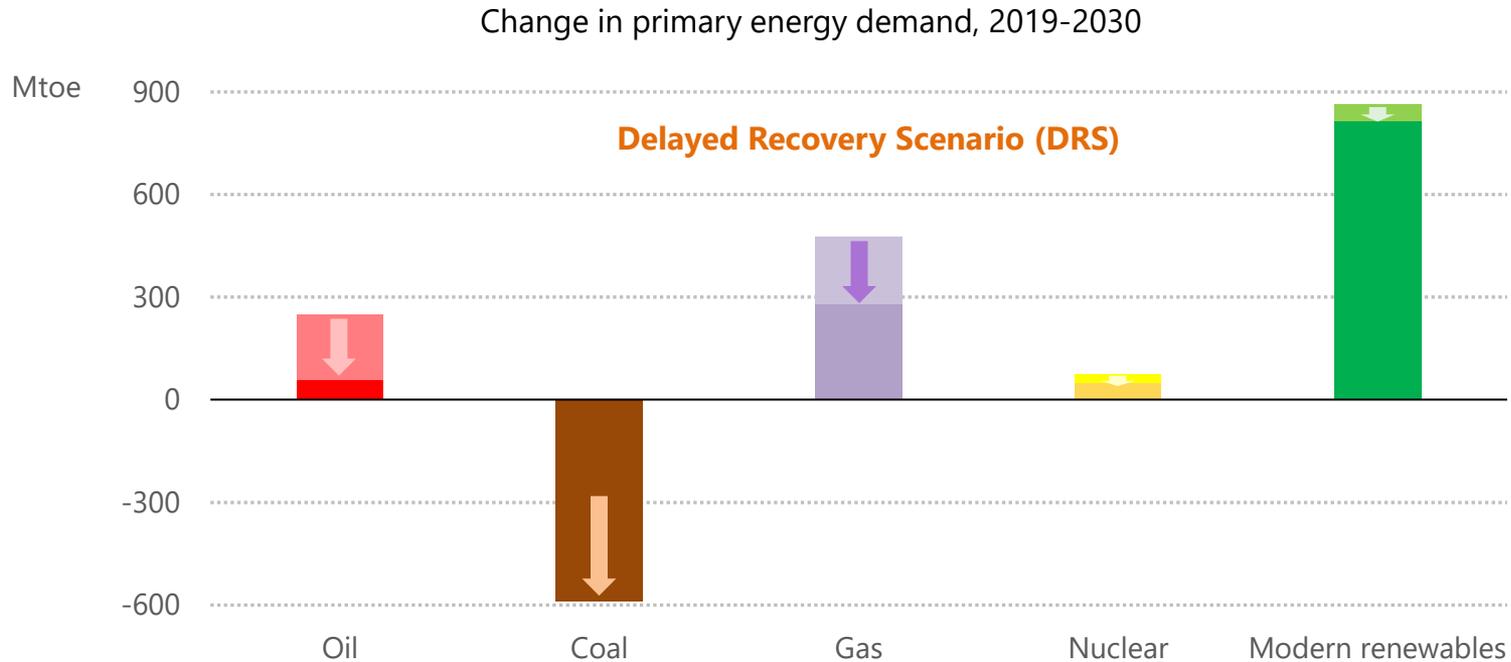
Index (2019=100)



WEO-2019
Stated Policies
Scenario
Delayed Recovery
Scenario

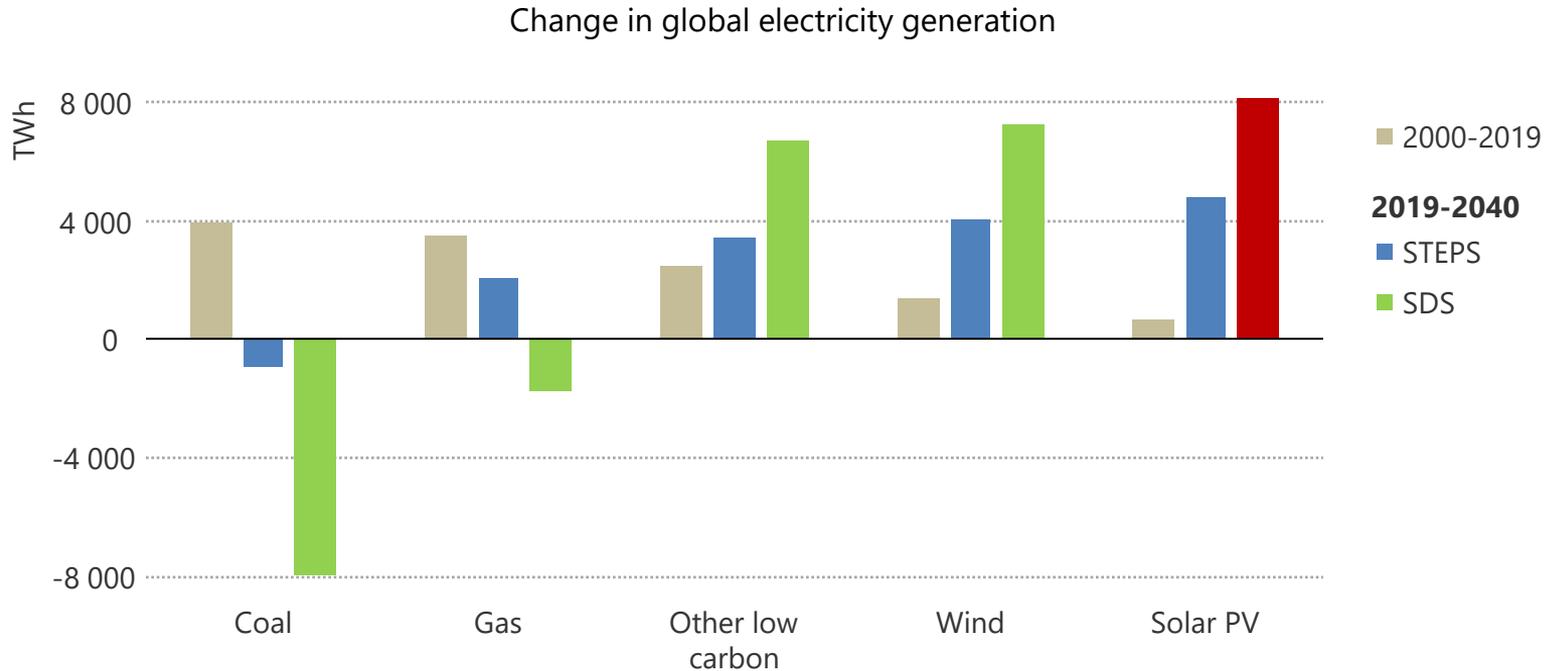
Bringing the pandemic under control in 2021 would allow energy demand to return to pre-crisis levels by early 2023. A longer pandemic would usher in the slowest decade of energy demand growth for a century

Impacts vary widely by fuel & technology



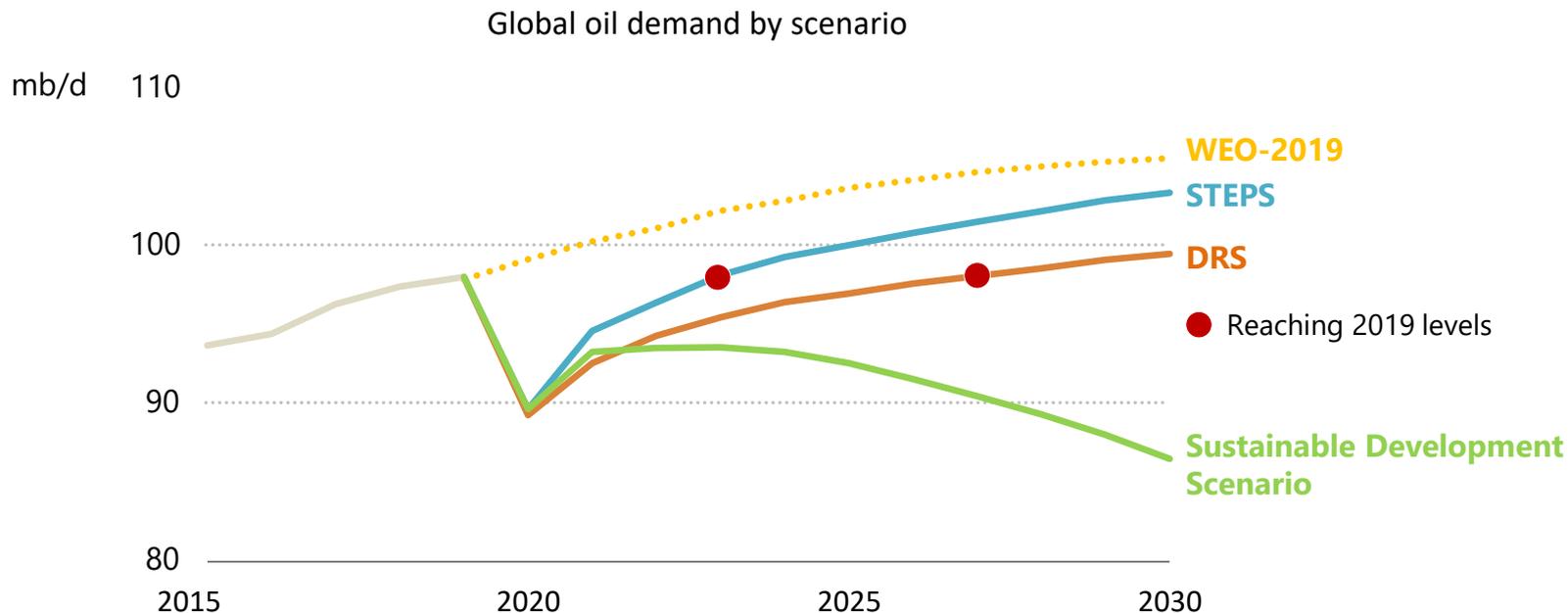
After a 5% drop in energy demand in 2020, renewables lead the rebound while coal never gets back to pre-crisis levels; a delayed recovery puts energy into slow motion, prolonging today's overhang of supply

Solar PV is becoming the 'new king' of electricity



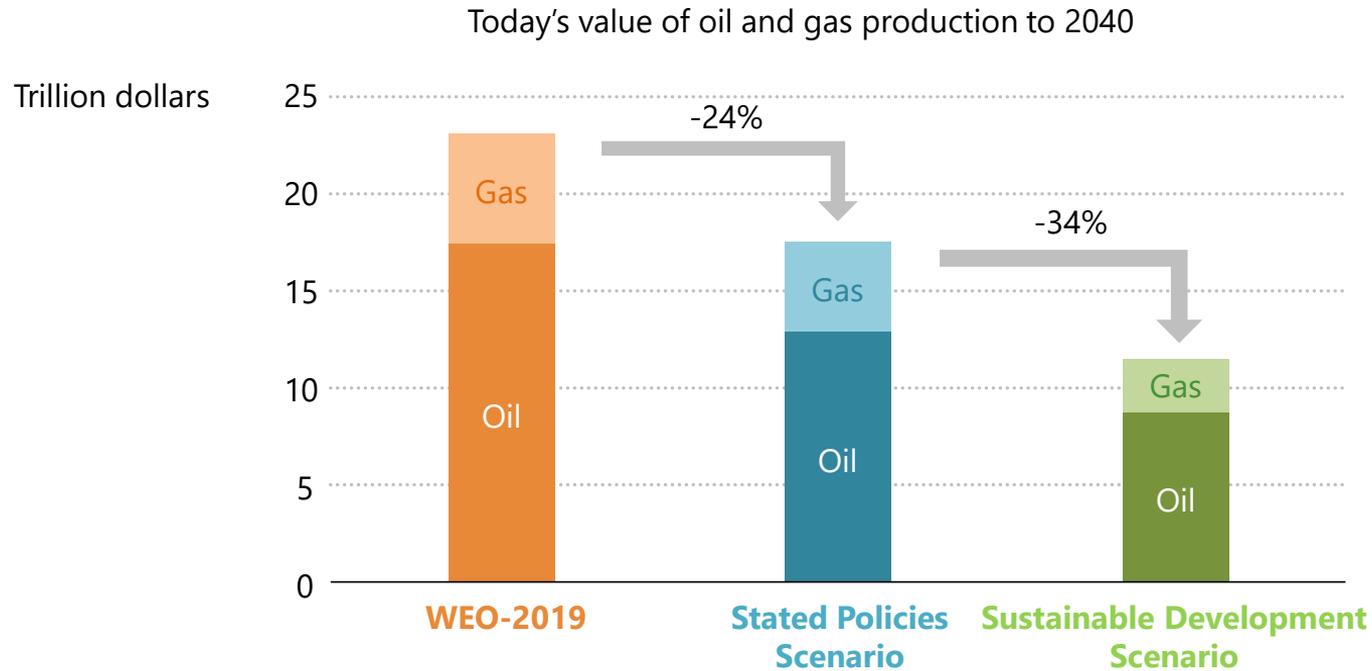
Solar PV is now the cheapest source of electricity in most countries in part due to low cost financing and is set to triple before 2030 under current and proposed policies, with the potential to grow much faster

Without a larger shift in policies, no rapid decline in oil



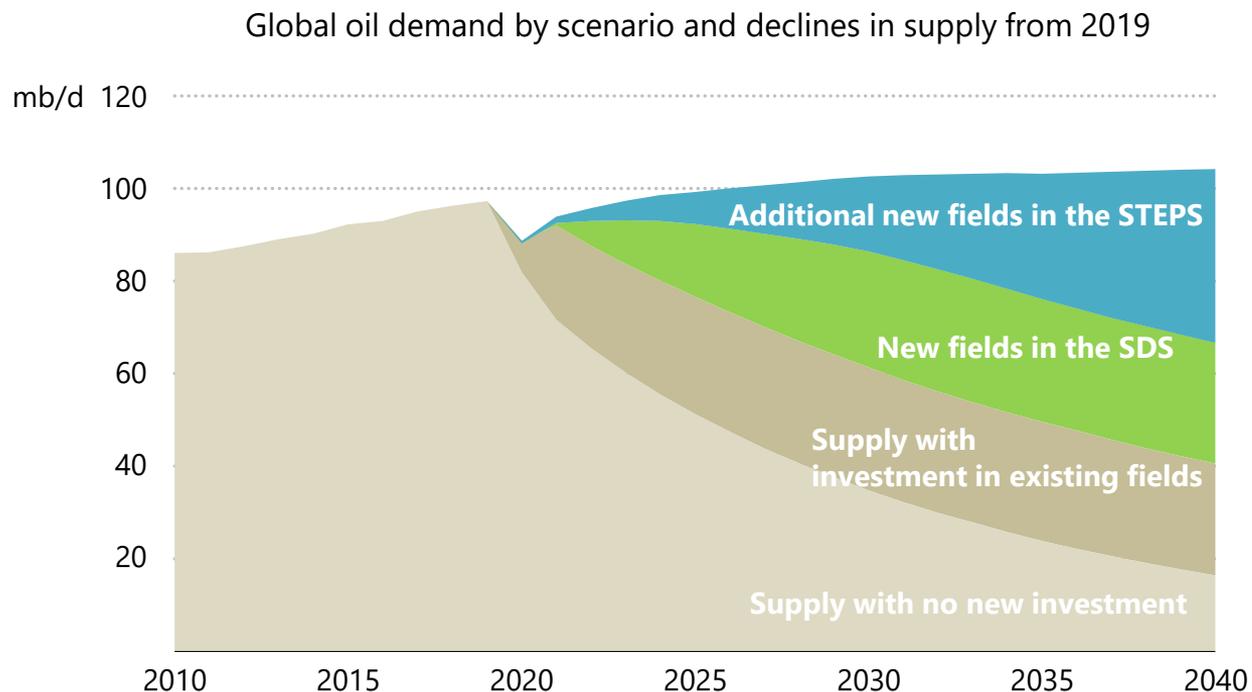
In the STEPS & the DRS, oil demand reaches a plateau in the 2030s as transport fuels are no longer a reliable engine for growth; a stronger push for efficiency, electrification and recycling will be needed for oil use to fall

Diversification: the critical watchword for oil and gas producers



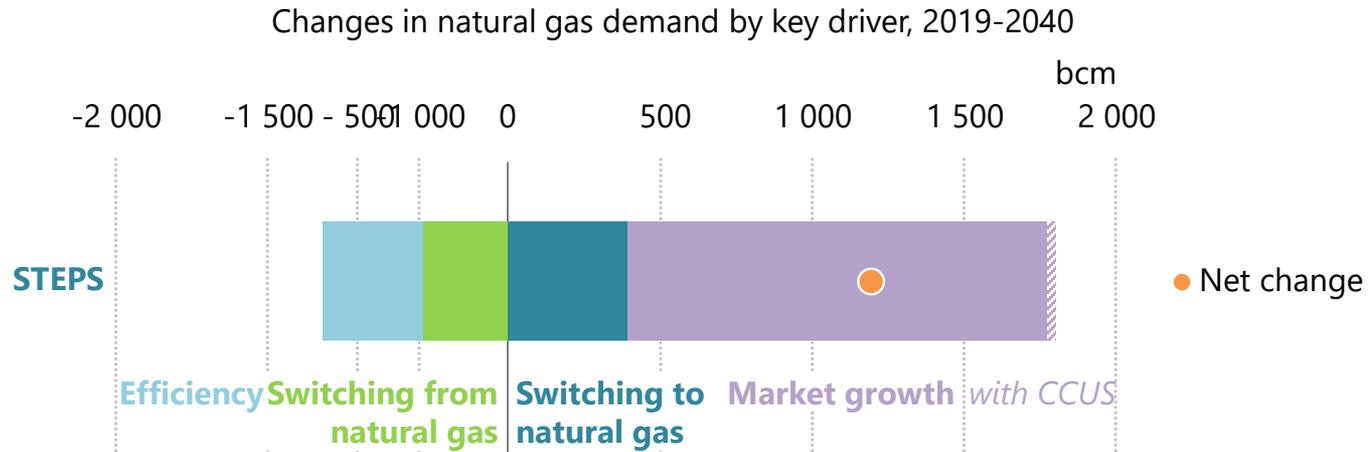
A lower price and demand outlook, due in the near term to Covid-19, adds to the strains on countries that rely on oil & gas revenues. The pressure for changes in strategies & business models is even stronger in the SDS

Production declines are the key determinant of investment needs



Continued upstream investment is needed in all scenarios to offset declines from existing oil fields, but rapid transitions imply very different strategies and risks for the industry

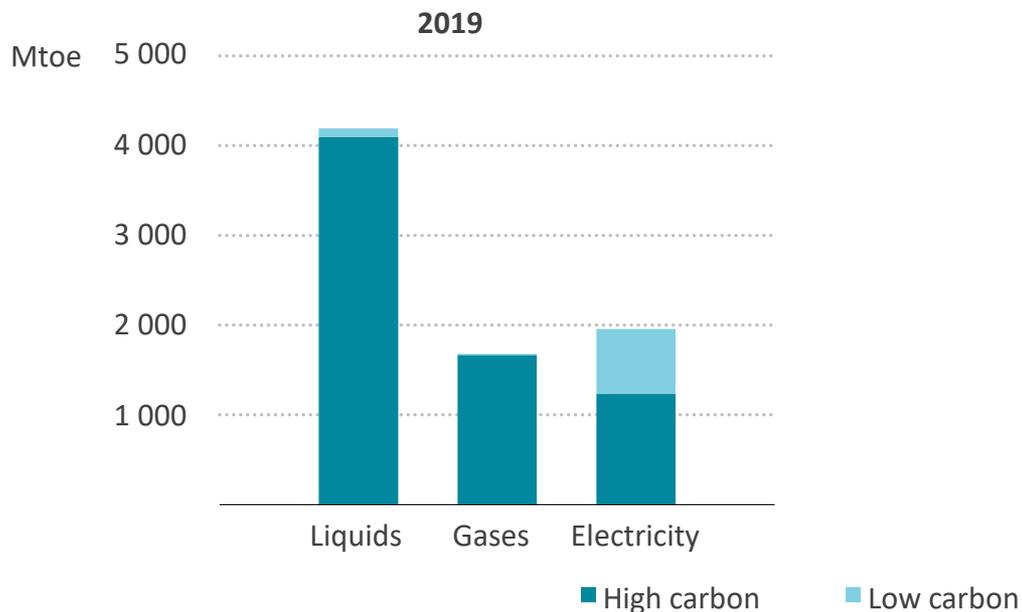
Increased pressure on natural gas



The push in developing economies for industrial growth & improved air quality create openings for natural gas in the STEPS, but prospects in the SDS are diminished by faster efficiency gains & switching to renewables

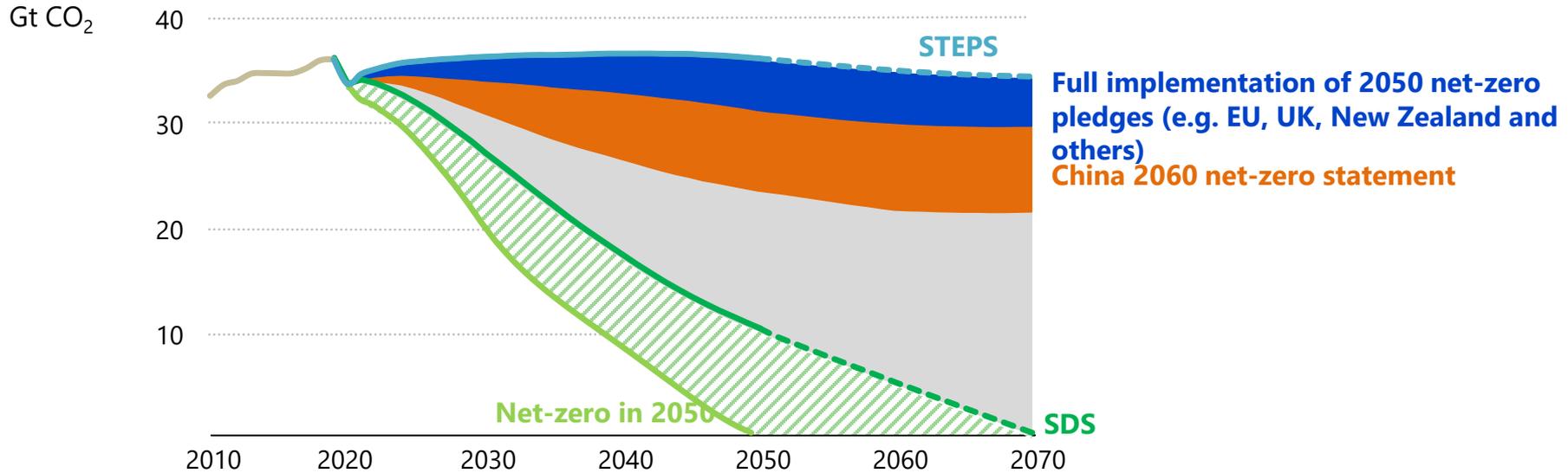
Electricity cannot be the only vector for an energy transformation

Final energy consumption by carrier in 2019 and 2040 in the Sustainable Development Scenario



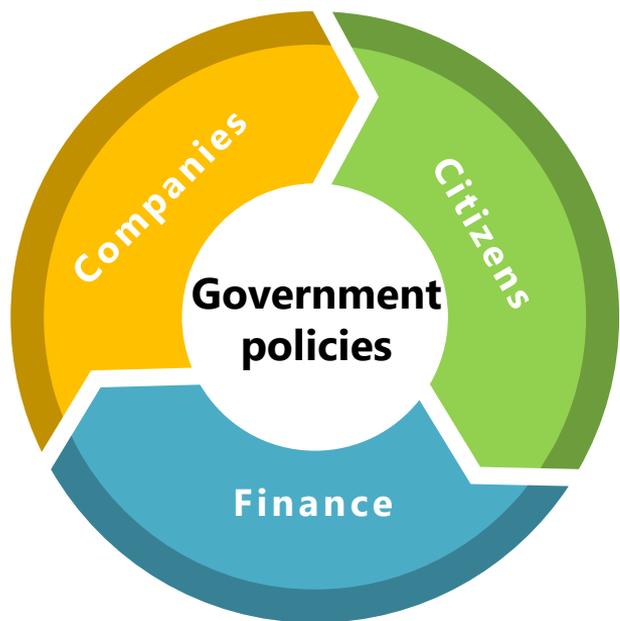
The 20% share of electricity in global final energy consumption is set to rise, but low-carbon sources of electricity cannot carry energy transitions on their own

The world is still far from putting emissions into decisive decline



Global emissions are set to bounce back more slowly than after the financial crisis of 2008-2009, but the world is still a long way from a sustainable recovery

Net-zero by 2050 demands unprecedented efforts over the next decade



Hydrogen

2020 0.45 Mt

2030



40 Mt

Electric cars

2020 2.5 million

2030



50 million cars sold

Clean electricity investment

2020 380 billion \$

2030



1.6 trillion \$

Net zero energy emissions in 2050 would require a set of dramatic additional actions over the next 10 years. Energy companies, citizens and investors all need to be on board – with unprecedented contributions to make

Conclusions

- The pandemic will leave lasting scars, but it is still open whether it represents a setback for a more secure and sustainable energy system, or a catalyst that accelerates the pace of change
- Renewables have taken off, with solar leading the way. But a slowdown in improving access to electricity and a risk of under-investment in grids are warning signs for the future
- The crisis has squeezed oil and gas revenues and investment, forcing producers to reassess their strategies to align with technology and policy shifts
- Getting to net zero means ramping up clean technology deployment while continuing to reduce costs, especially through innovation for hydrogen and other low-carbon fuels, battery storage & CCUS
- There are no short cuts; only profound changes, guided by good policies, can deliver a better energy future. This is a choice – for citizens, investors, companies, but most of all for governments