THE CONTEXT FOR OUR STRATEGY
THE ENERGY TRANSFORMATION SCENARIOS

BUSINESS ENVIRONMENT OVERVIEW

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#ShellScenarios

Warning: Uncertainties Ahead

Shell's scenarios are not intended to be projections or forecasts of the future. Shell's scenarios, including the scenarios referenced in this presentation, are not Shell's strategy or business plan. When developing Shell's strategy, our scenarios are one of many variables that we consider. Ultimately, whether society meets its goals to decarbonise is not within Shell's control. We will intend to travel this journey in step with society, only governments can create the framework for success. The Sky 1.5 scenario starts with data from Shell's Sky scenario, but there are important updates. First, the outlook uses the most recent modelling for the impact and recovery of COVID-19 consistent with a Sky 1.5 scenario narrative. Second, it blends this projection into existing Sky (2018) energy system data by around 2030. Third, the extensive scale-up of nature-based solutions is brought into the core scenario, which benefits from extensive new modelling of that scale-up. (In 2018, nature-based solutions required to achieve 1.5°C above pre-industrial levels by the end of this century were analysed as a sensitivity to Sky. This analysis was also reviewed and included in the IPCC Special Report on Global Warming of 1.5°C (SR15).) Fourth, our new oil and natural gas supply modelling, with an outlook consistent with the Sky 1.5 narrative and demand, is presented for the first time. Fifth, the Sky 1.5 scenario draws on the latest historical data and estimates to 2020 from various sources, particularly the extensive International Energy Agency energy statistics. As with Sky, this scenario assumes that society achieves the 1.5°C stretch goal of the Paris Agreement. It is rooted in stretching but realistic development dynamics today, but explores a goal-oriented way to achieve that ambition. We worked back in designing how this could occur, considering the reality of the situation today and taking into account realistic timescales for change. Of course, there is a range of possible paths in detail that society could take to achieve this goal. Although achieving the goal of the Paris Agreement and the future depicted in Sky 1.5 while maintaining a growing global economy will be extremely challenging, today it is still a technically possible path. However, we believe the window for success is quickly closing.

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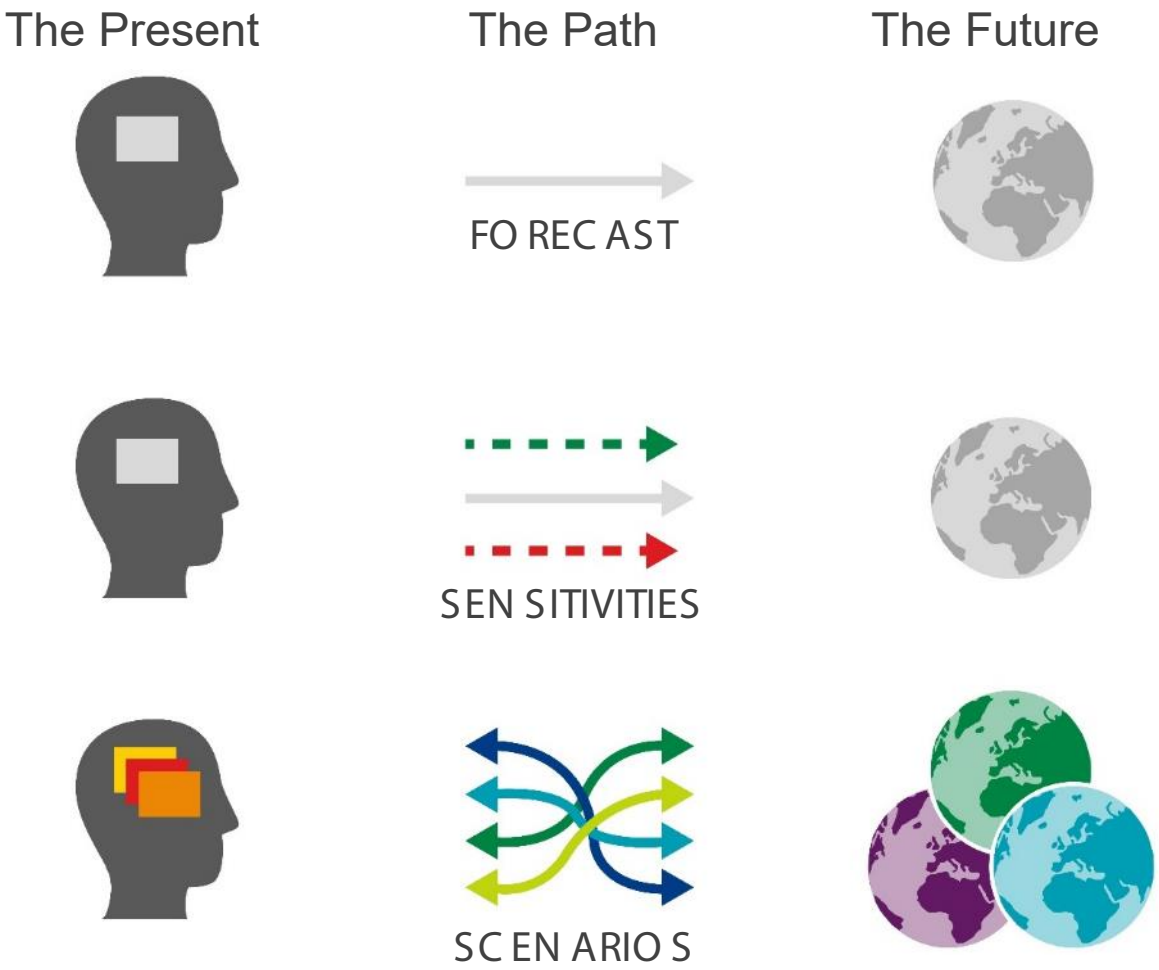
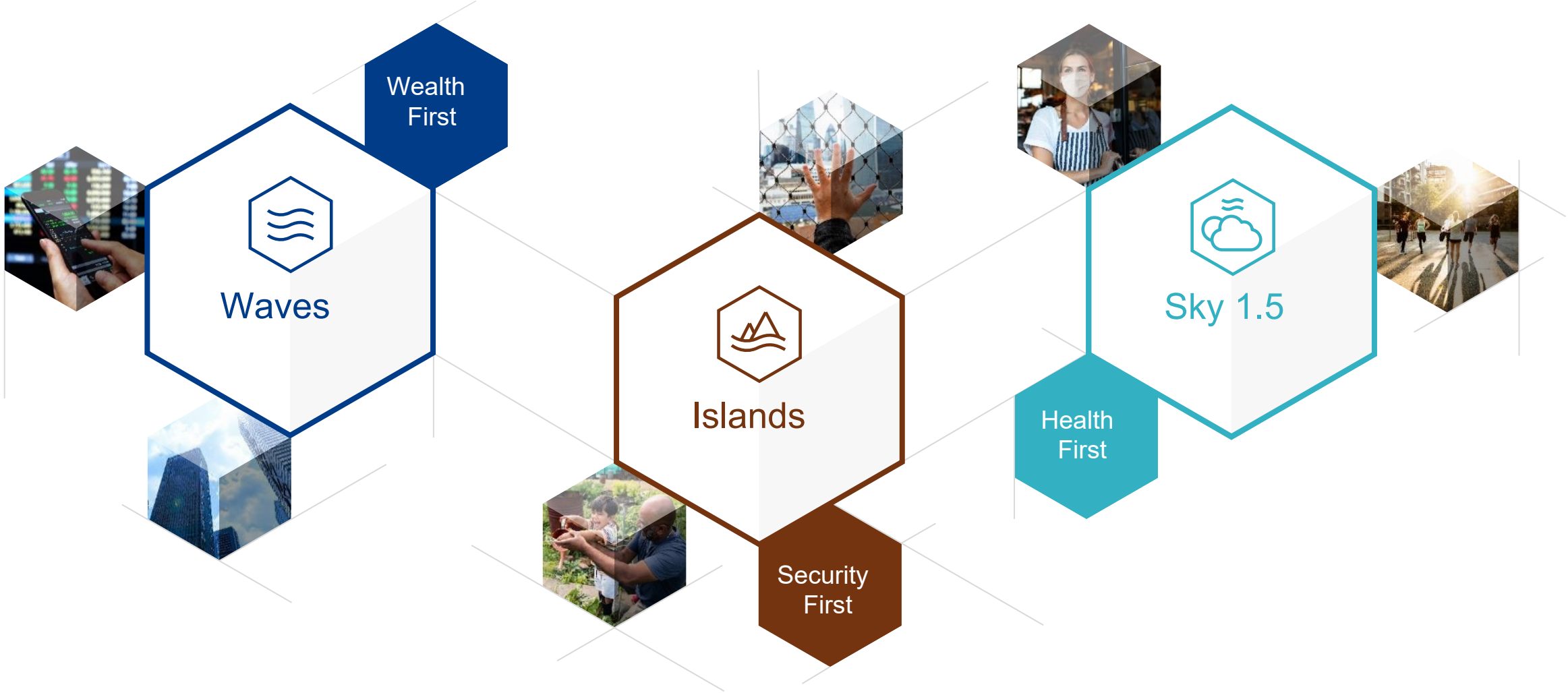
Why scenarios?

Stretch mindsets for better-informed decisions

Help to improve judgment in the face of radical uncertainties



The Energy Transformation Scenarios



Waves Late, but fastdecarbonisation

- Wealth first – repair the economy
- Surge in energy use and emissions
- Growing inequality and more frequent and extreme weather events
- Social pressures; issues intensify
- Backlash forces rapid policy-driven reductions in fossil fuels
- 2.3° C above pre-industrial levels by the end of this century

Islands Late and slowdecarbonisation

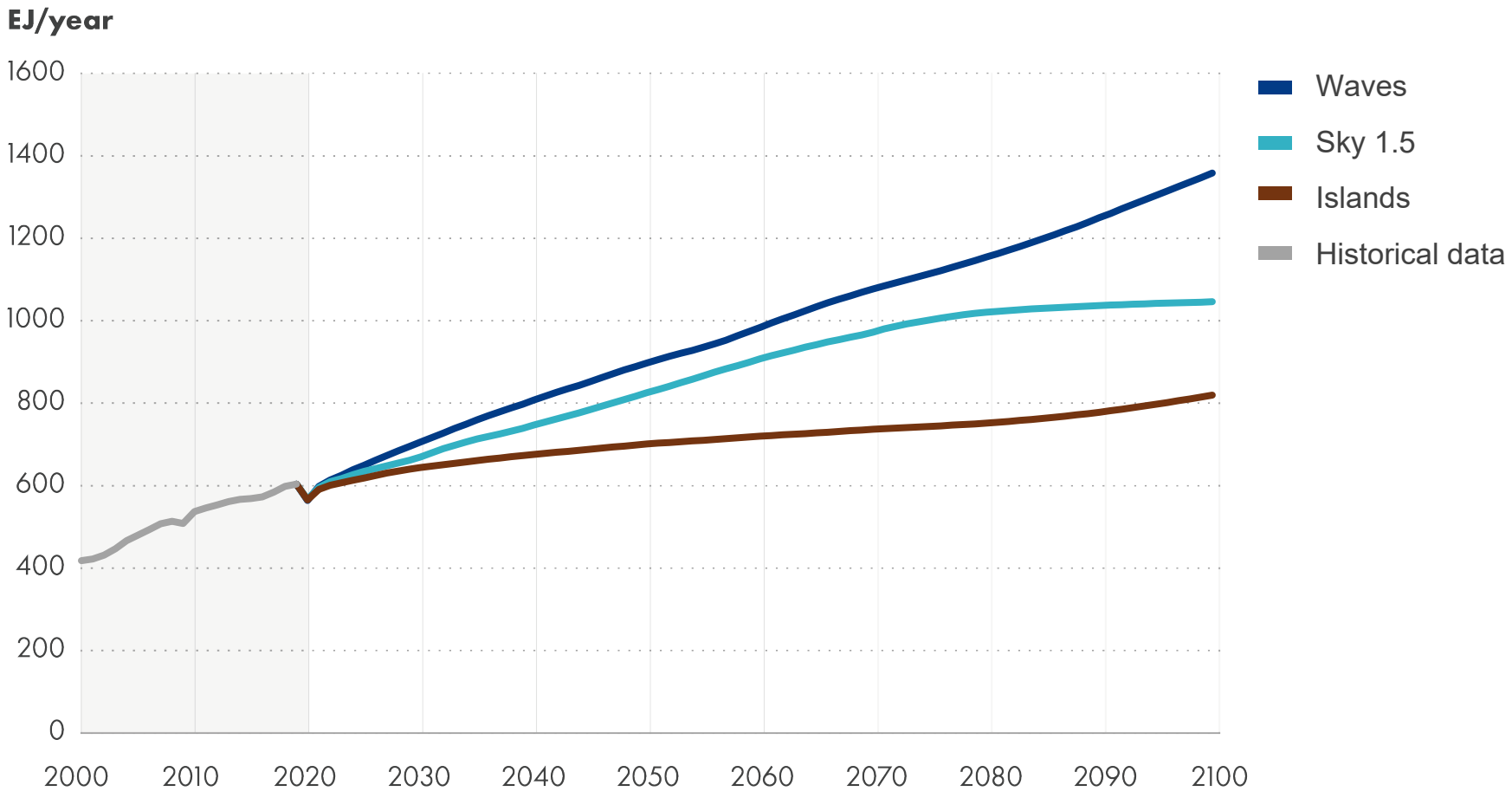
- Security first – growing nationalism
- Frictions in collaboration and trade
- Economies stagnate; growth in energy demand stalls
- Global climate action slows
- Cleaner technology makes slow progress
- 2.5° C above pre-industrial levels by 2100, and still rising

Sky 1.5 Accelerated decarbonisation now

- Health first – well-being is the priority
- People proceed cautiously, economies reopen slowly but steadily
- Recognition of value in alignments
- Green investment reshapes energy system
- Deep structural changes lower emissions
- 1.5° C above pre-industrial levels this century, in line with Paris goal

Energy demand rises in all scenarios

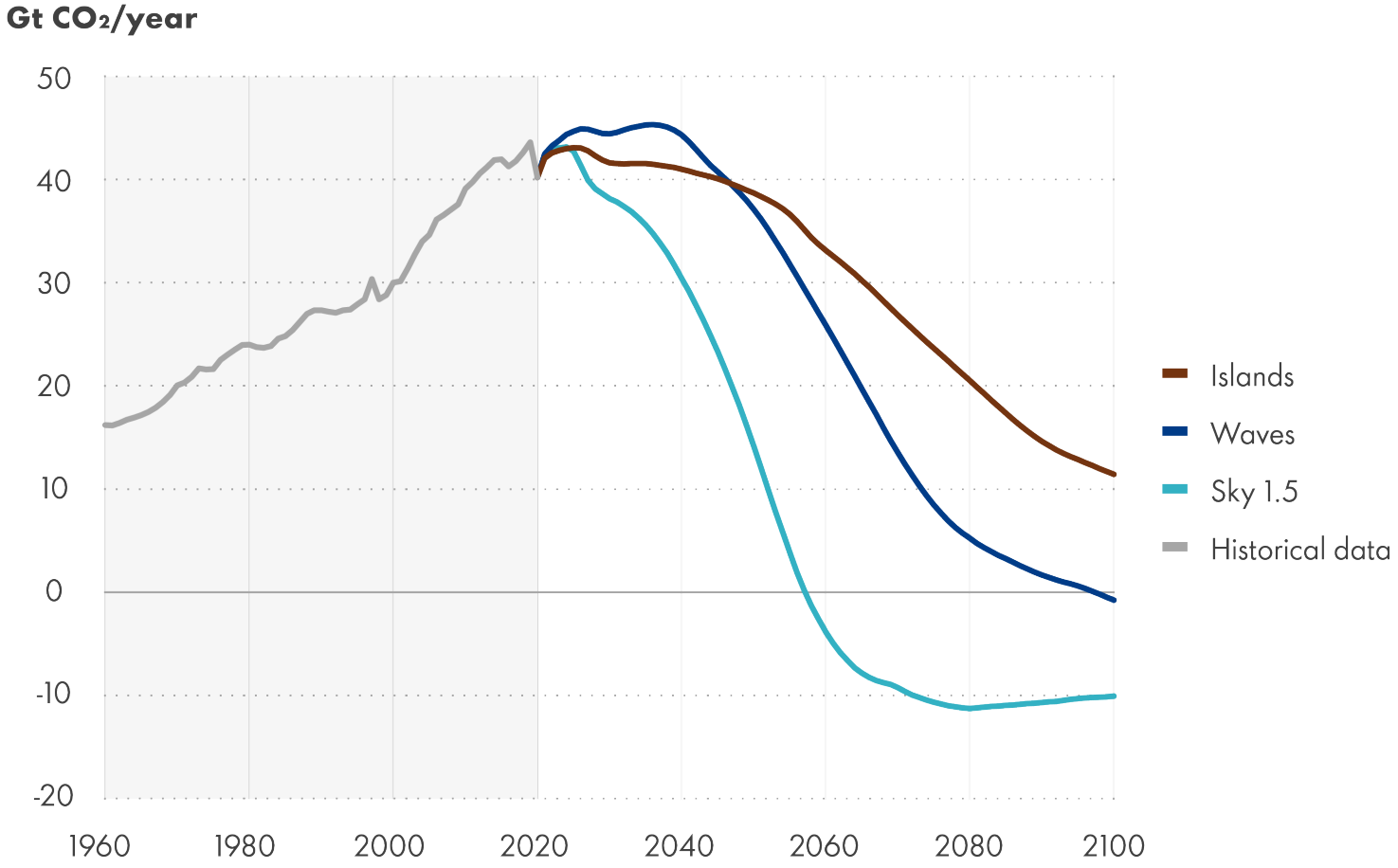
Total primary energy



Source: Shell analysis based on data from the IEA (2020) World Energy Balances (Link), all rights reserved

Achieving net -zero CO_2 emissions is in the 2050's at the earliest

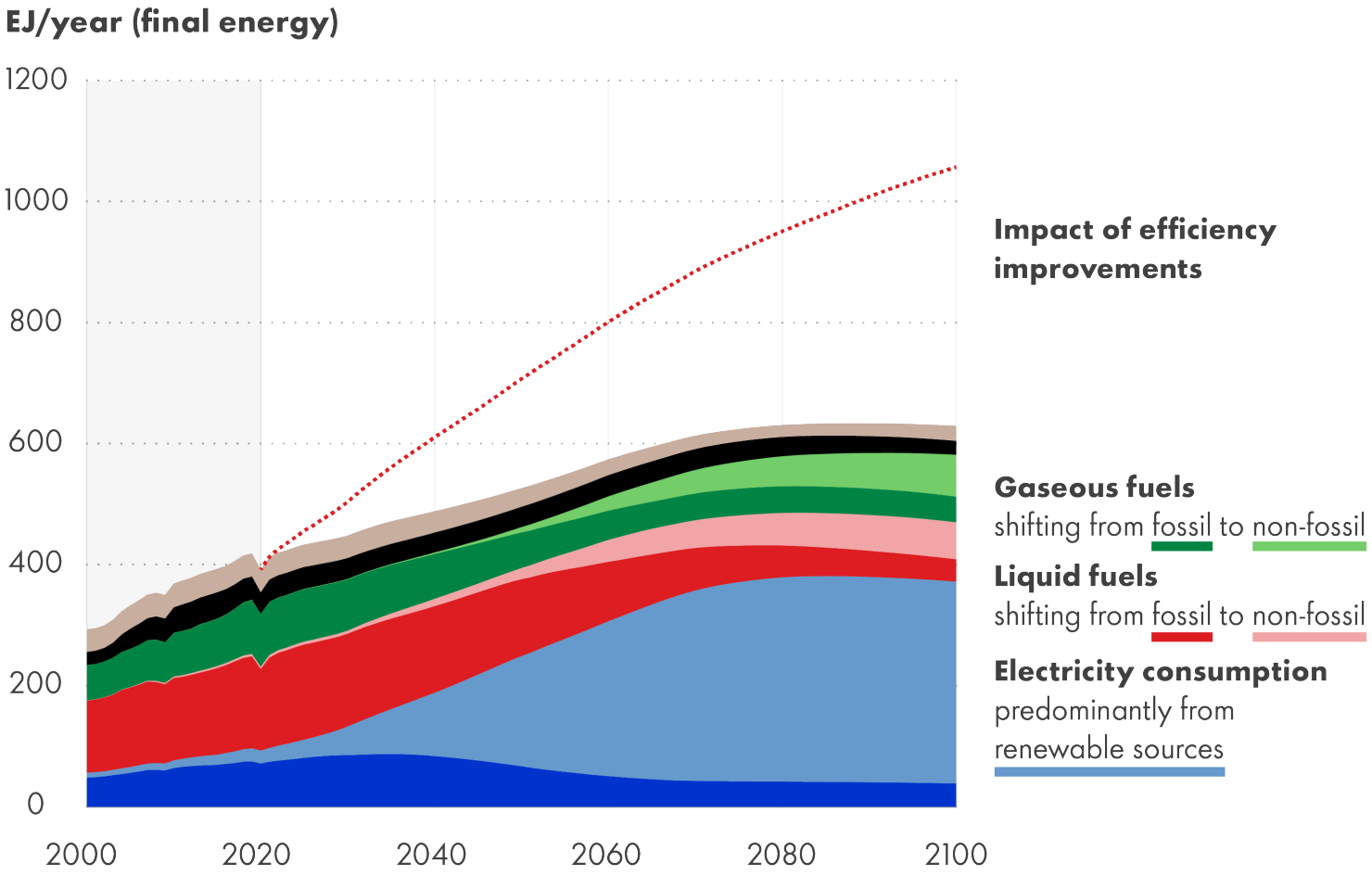
CO_2 emissions



Source: Shell analysis based on data from Global Carbon Project (2020) and the IEA (2020) World Energy Balances (Link), all rights reserved

Efficiency gains and system decarbonization are vital

Total final consumption of energy – Sky 1.5 scenario



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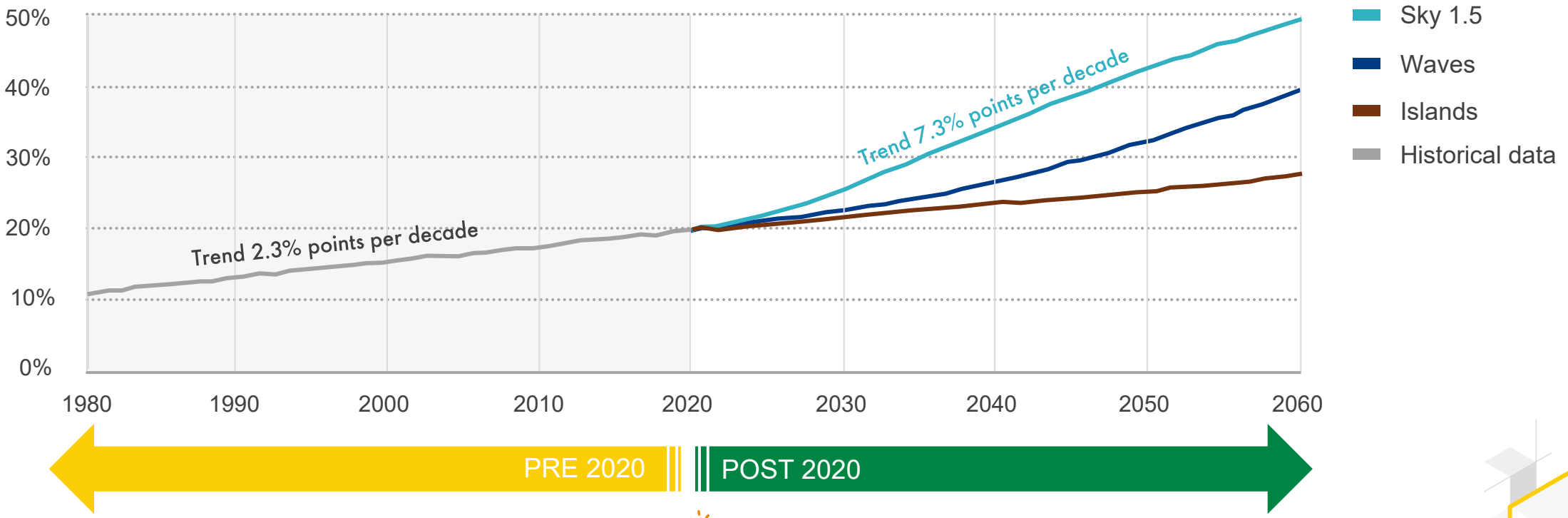
Electrification will grow in all scenarios, but particularly Sky 1.5

Share of electricity in final energy



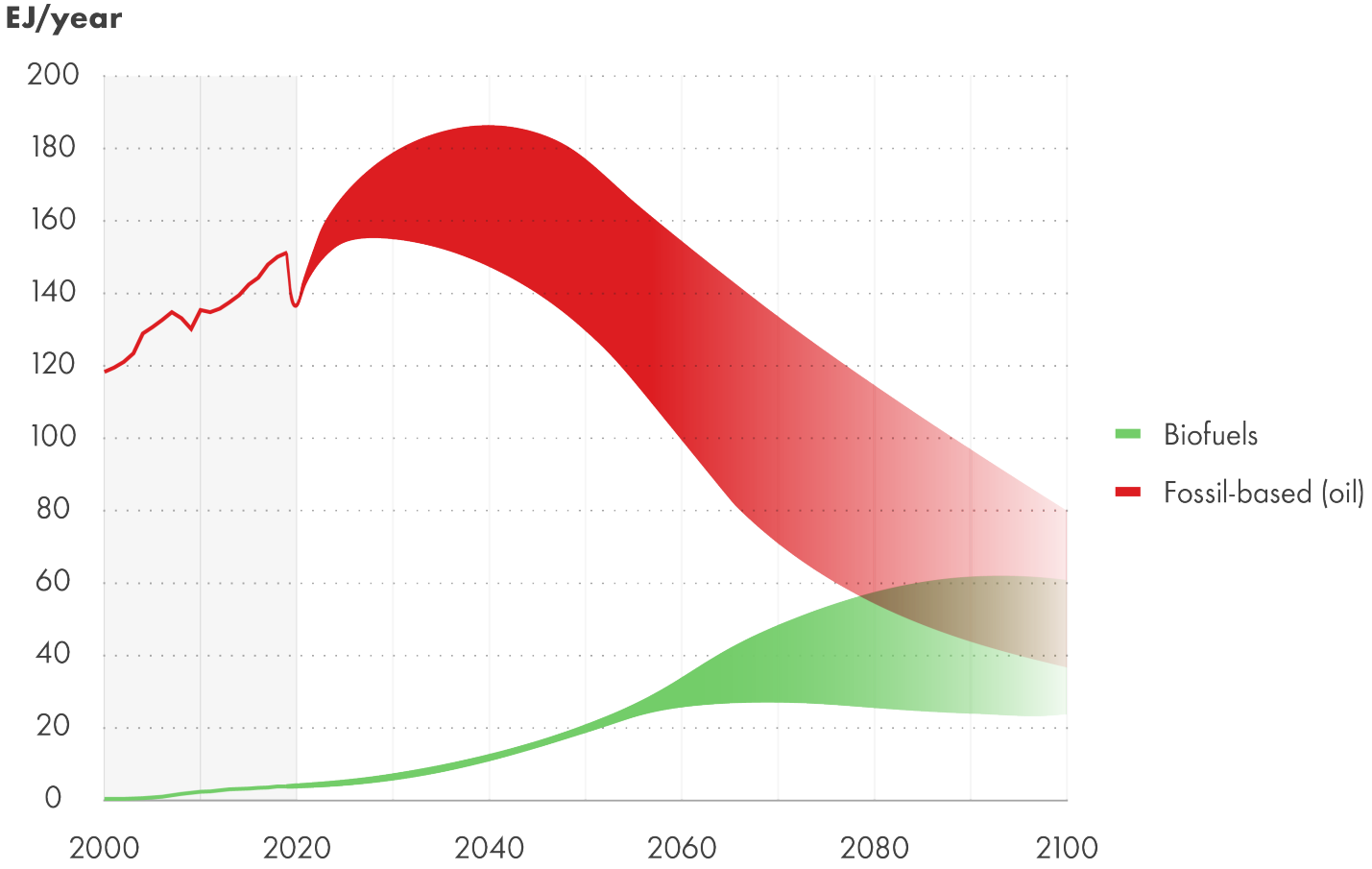
600 GW of solar installed in 2010s — 3000 GW of solar installed in 2020s

~150,000 3 MW turbines built during the 2010s, mainly onshore — 70,000 10 MW turbines during the 2020s, off-shore focus

No real growth since the turn of the century — Increase by a third in the coming decade and double by 2040.

Oil demand will peak in the next two decades, but demand persists

Liquid fuels demand

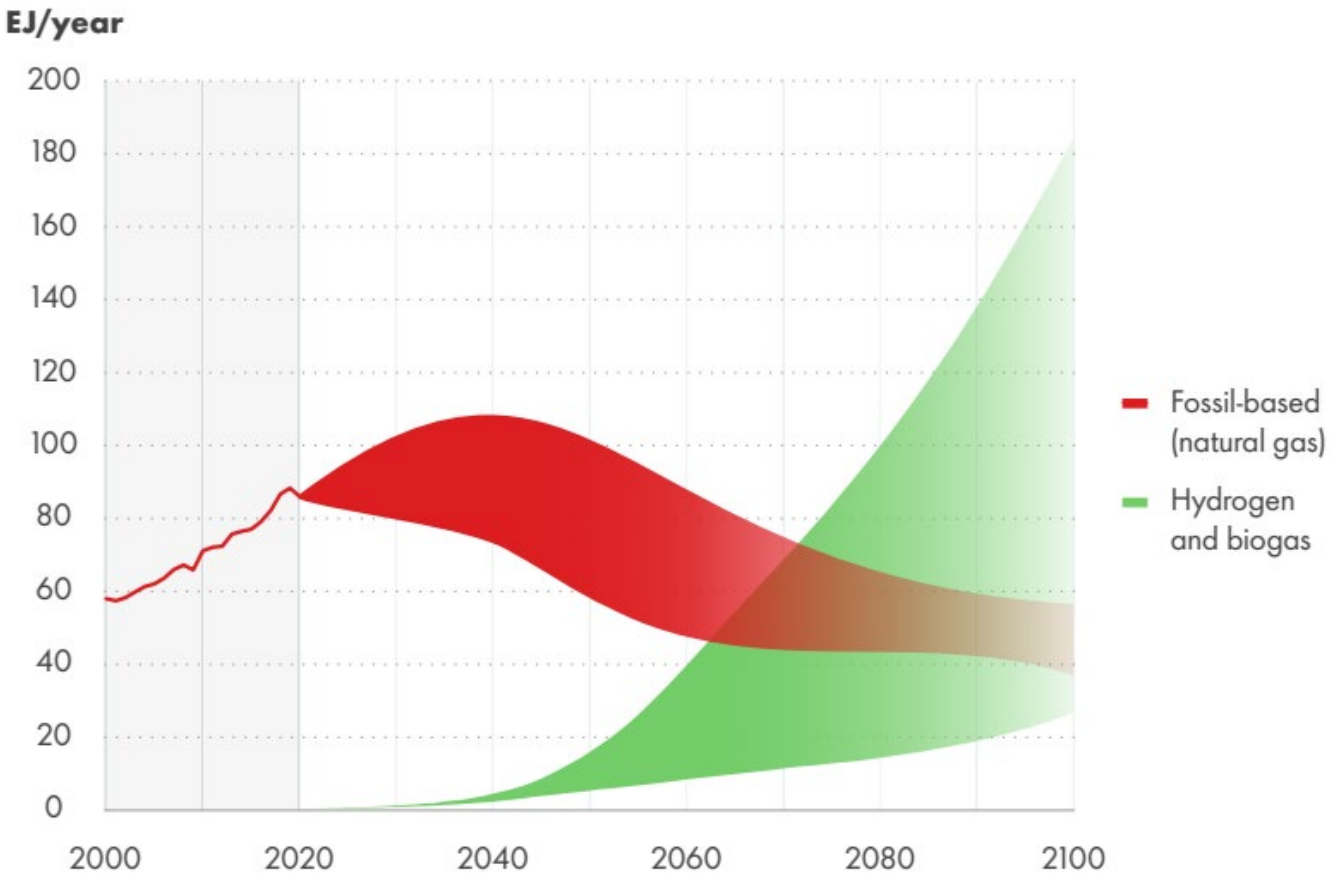


*Oil includes condensate and natural gas liquids

Source: Scenario ranges from Shell analysis based on data from the IEA (2020) World Energy Balances (Link), all rights reserved

Gas demand persists longer, but H2 and biogas could grow beyond 2050

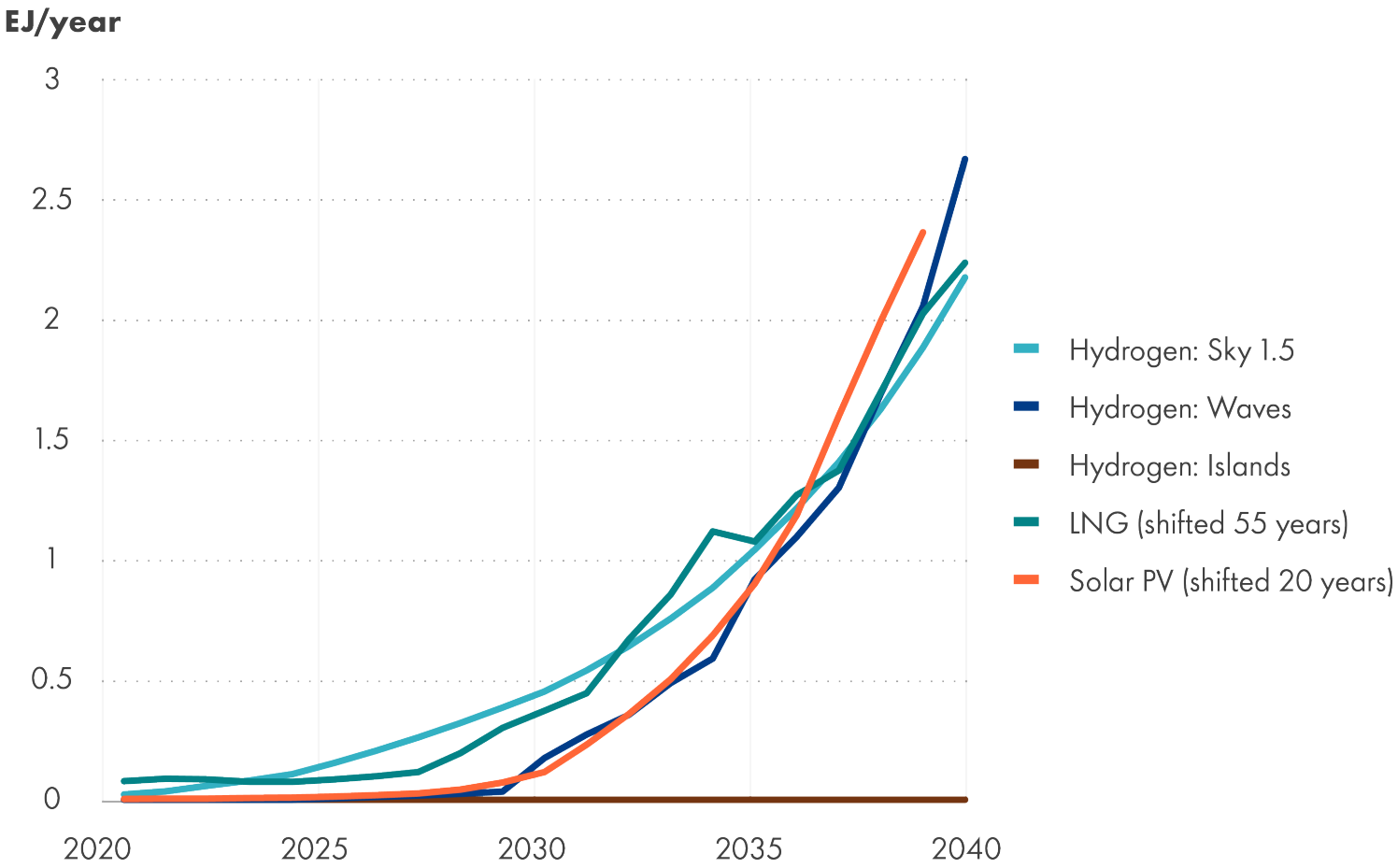
Gaseous fuels demand



Source: Scenario ranges from Shell analysis based on data from the IEA (2020) World Energy Balances (Link), all rights reserved

Comparing outlooks for hydrogen demand with the experience from two successful emerging energy technologies: LNG and solar PV

Hydrogen growth vs historical trends

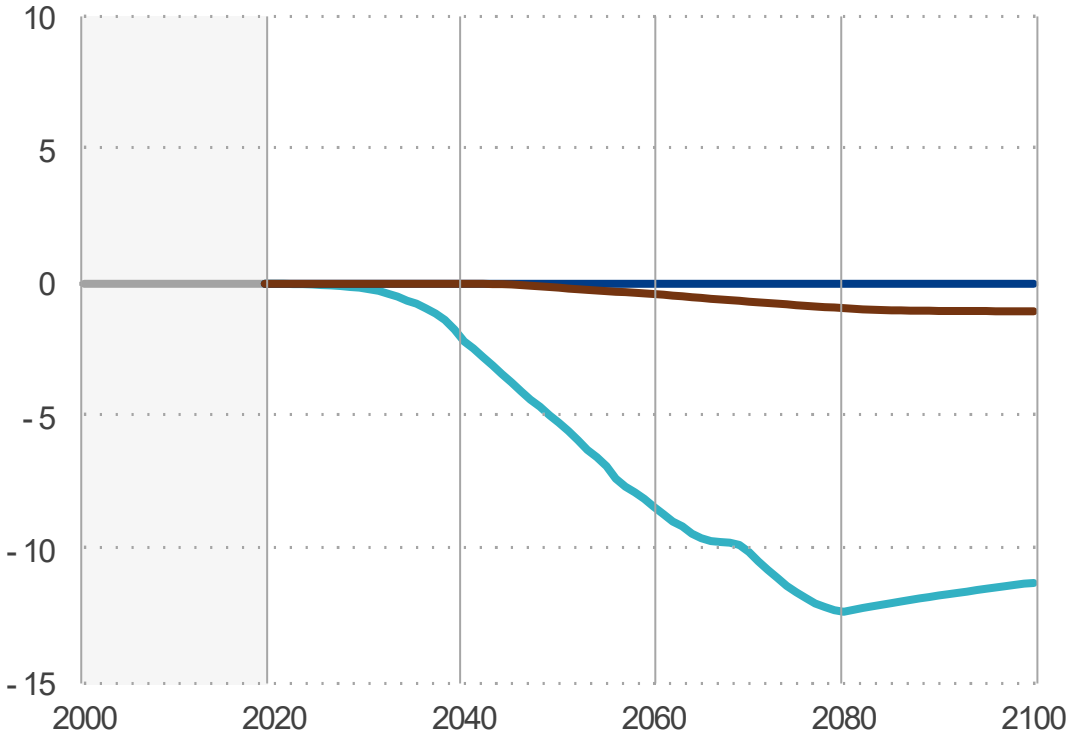


Source: Shell analysis based on data from Rystad Energy and the IEA (2020) World Energy Balances (Link), all rights reserved

Both technological and natural sinks will be critical to achieving 1.5 ° C

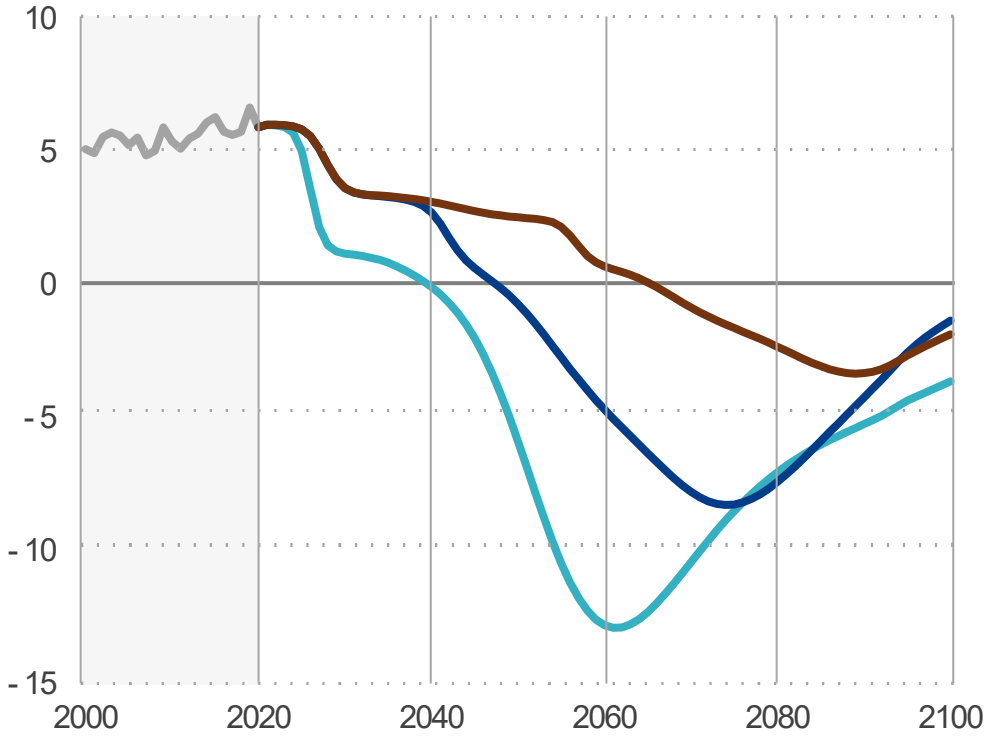
Energy -related emissions captured by CCS

Gt CO_2/year



CO_2 removal using nature

Gt CO_2/year



Waves Islands Sky 1.5 Historical data

Source: Shell analysis, Global Carbon Project (2020)

THE SHELL INVESTMENT CASE

POWERING PROGRESS

Our strategy to accelerate the transition to net-zero emissions, purposefully and profitably

GENERATING SHAREHOLDER VALUE

Growing value through a dynamic portfolio and disciplined capital allocation

RESPECTING NATURE

Protecting the environment, reducing waste and making a positive contribution to biodiversity

POWERING LIVES

Powering lives through our products and activities, and supporting an inclusive society

ACHIEVING NET-ZERO EMISSIONS

Working with our customers and sectors to accelerate the energy transition to net-zero emissions

UNDERPINNED BY OUR CORE VALUES AND OUR FOCUS ON SAFETY

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