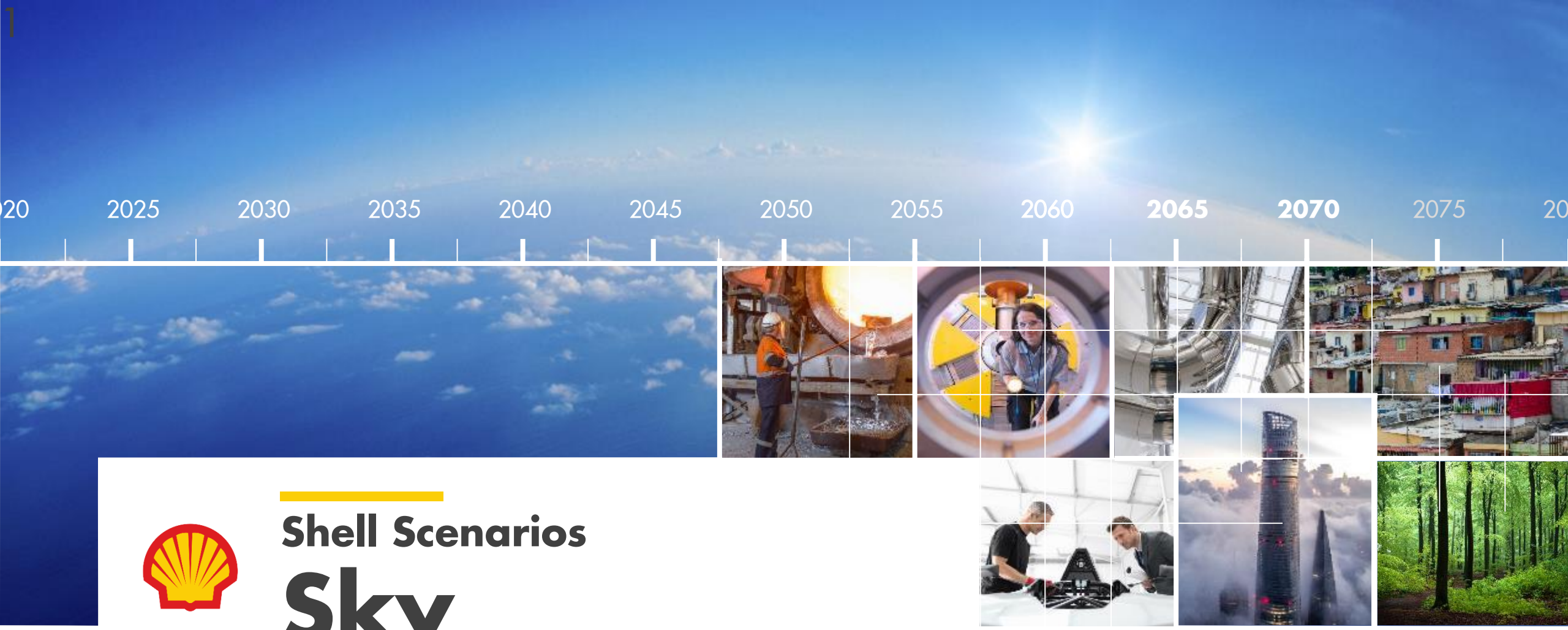


Shell Scenarios
Sky

CA ISO Symposium, 18th October 2018

Brian Davis
VP Energy Solutions, Shell New Energies

WARNING: Uncertainties ahead

This presentation contains data from Shell's new Sky Scenario. Unlike Shell's previously published Mountains and Oceans exploratory scenarios, the Sky Scenario is targeted through the assumption that society reaches the Paris Agreement's goal of holding global average temperatures to well below 2°C. Unlike Shell's Mountains and Oceans scenarios which unfolded in an open-ended way based upon plausible assumptions and quantifications, the Sky Scenario was specifically designed to reach the Paris Agreement's goal in a technically possible manner. These scenarios are a part of an ongoing process used in Shell for over 40 years to challenge executives' perspectives on the future business environment. They are designed to stretch management to consider even events that may only be remotely possible. Scenarios, therefore, are not intended to be predictions of likely future events or outcomes and investors should not rely on them when making an investment decision with regard to Royal Dutch Shell plc securities.

Additionally, it is important to note that Shell's existing portfolio has been decades in development. While we believe our portfolio is resilient under a wide range of outlooks, including the IEA's 450 scenario (World Energy Outlook 2016), it includes assets across a spectrum of energy intensities including some with above-average intensity. While we seek to enhance our operations' average energy intensity through both the development of new projects and divestments, we have no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10-20 years. Although, we have no immediate plans to move to a net-zero emissions portfolio, in November of 2017, we announced our ambition to reduce our net carbon footprint in accordance with society's implementation of the Paris Agreement's goal of holding global average temperature to well below 2°C above pre-industrial levels. Accordingly, assuming society aligns itself with the Paris Agreement's goals, we aim to reduce our net carbon footprint, which includes not only our direct and indirect carbon emissions, associated with producing the energy products which we sell, but also our customers' emissions from their use of the energy products that we sell, by 20% in 2035 and by 50% in 2050.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this presentation "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. ''Subsidiaries'', "Shell subsidiaries" and "Shell companies" as used in this presentation refer to companies over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as "joint ventures" and "joint operations" respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

This presentation contains forward-looking statements concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as ''anticipate'', ''believe'', ''could'', ''estimate'', ''expect'', ''goals'', ''intend'', ''may'', ''objectives'', ''outlook'', ''plan'', ''probably'', ''project'', ''risks'', "schedule", ''seek'', ''should'', ''target'', ''will'' and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this web page, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; and (m) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this presentation are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Royal Dutch Shell's Form 20-F for the year ended December 31, 2017 (available at www.shell.com/investor and www.sec.gov). These risk factors also expressly qualify all forward-looking statements contained in this presentation and should be considered by the reader. Each forward-looking statement speaks only as of the date of this presentation 18 October, 2018. Neither Royal Dutch Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this web page. We may have used certain terms, such as resources, in this presentation that United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. U.S. investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov. You can also obtain this form from the SEC by calling 1-800-SEC-0330.

Scenarios for the pathway ahead

Scenarios are not predictions or forecasts, they are a way of exploring alternative futures

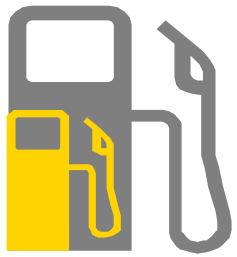
The Present **The Path** **The Future**

The Present **The Path** **The Future**

Energy for a changing world

There is more demand for energy globally as the world's population and living standards increase

Growing population
Global population is expected to increase from around 7.6 billion today to nearly 10 billion by 2050[1], with 68% living in cities[2]



Rising demand
The IEA's main scenario sees a 30% rise in global energy demand between today and 2040, with an increase in consumption of both oil and gas[3]

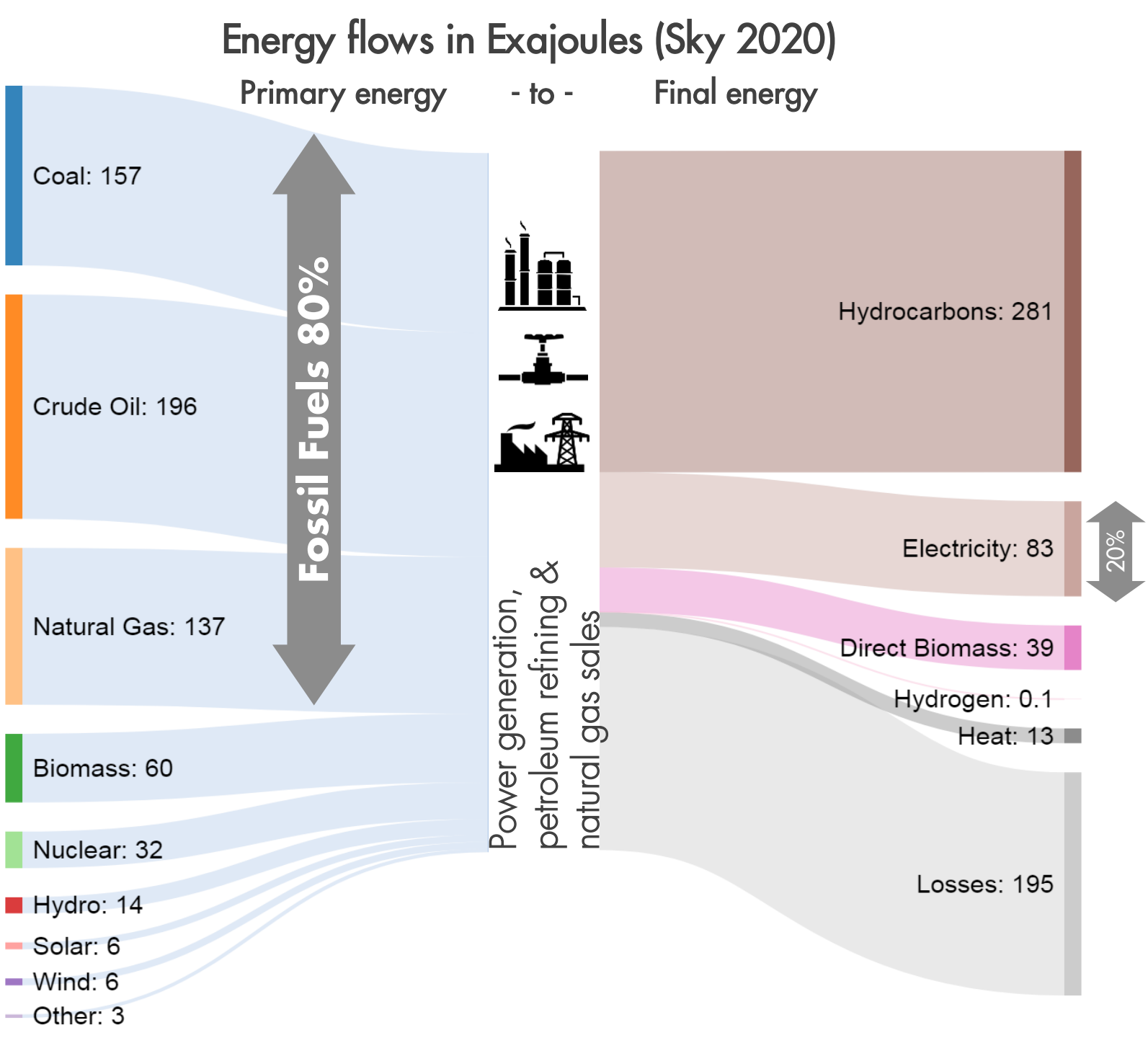
Ongoing supply
By the 2050s solar could emerge as the dominant primary energy source, but oil and gas needs will continue where substitution is difficult[4]

Mitigating climate change
Net-zero emissions is a potentially achievable societal ambition[5]

Sources: [1]UN World Population Prospects (2017 revision); [2]UN World Urbanisation Prospects (2018 revision); [3]IEA World Energy Outlook 2017; [4]Shell Sky Scenario: Meeting the Goals of the Paris Agreement (2018); [5]Shell *New Lens Scenarios* Supplement, "A Better Life with a Healthy Planet" (2016)

The energy system today

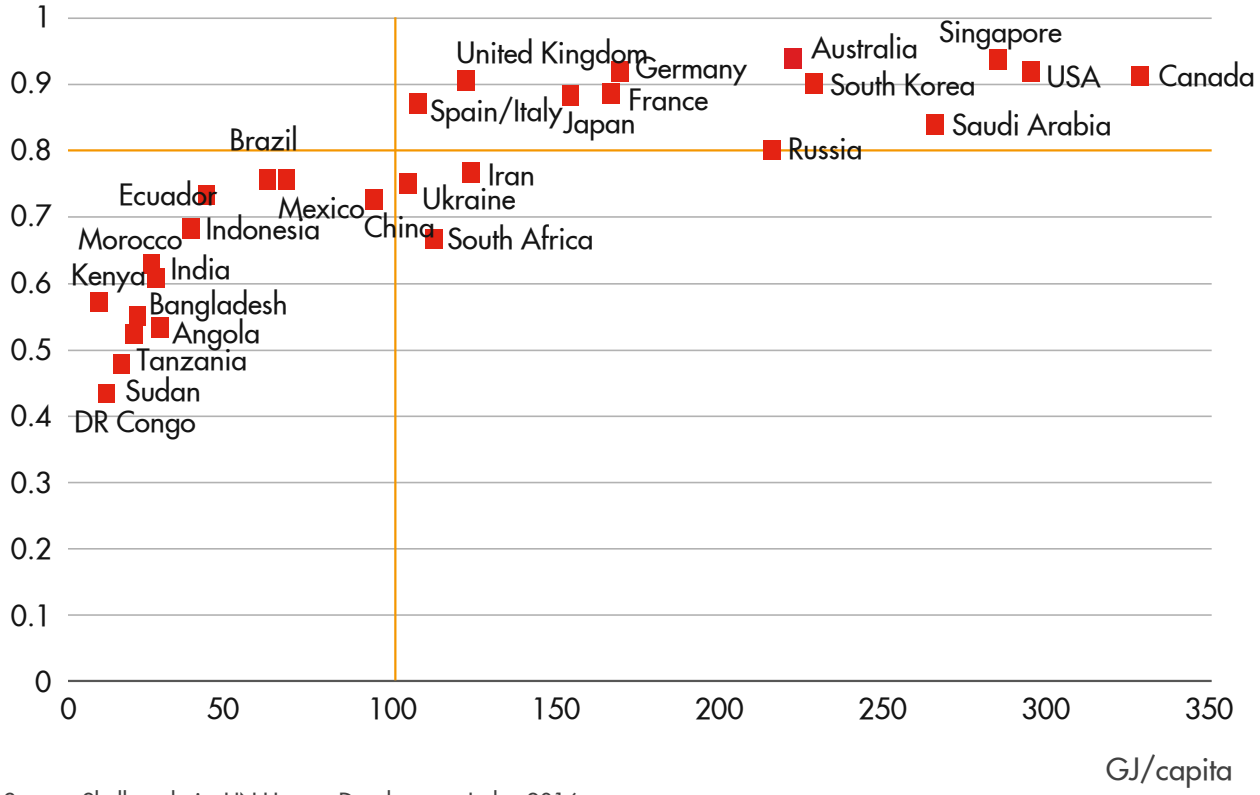
- Primarily fossil fuels
- Final energy is about 20% electricity; so 80% of the energy we use is not electricity
- Continuing to grow as population increases and economies expand
- Current energy system has been evolving over the last 150 years
- A person from London or New York in 1920 visiting today would recognize much of what they see (in the energy system)



Source: Shell analysis, Sky scenario

Challenges for the 21st century: Development and decarbonisation

Human Development Index: energy supports a better life



Source: Shell analysis, UN Human Development Index 2016

Decarbonisation: sector-specific perspective is key

Source: Shell analysis, World Energy Model

From "A Better Life with a Healthy Planet: Pathways to Net-zero Emissions" a Shell *New Lens Scenarios* supplement (2016)

The goals of the Paris Agreement

Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels

and 3 critical United Nations Sustainable Development Goals

1 NO POVERTY

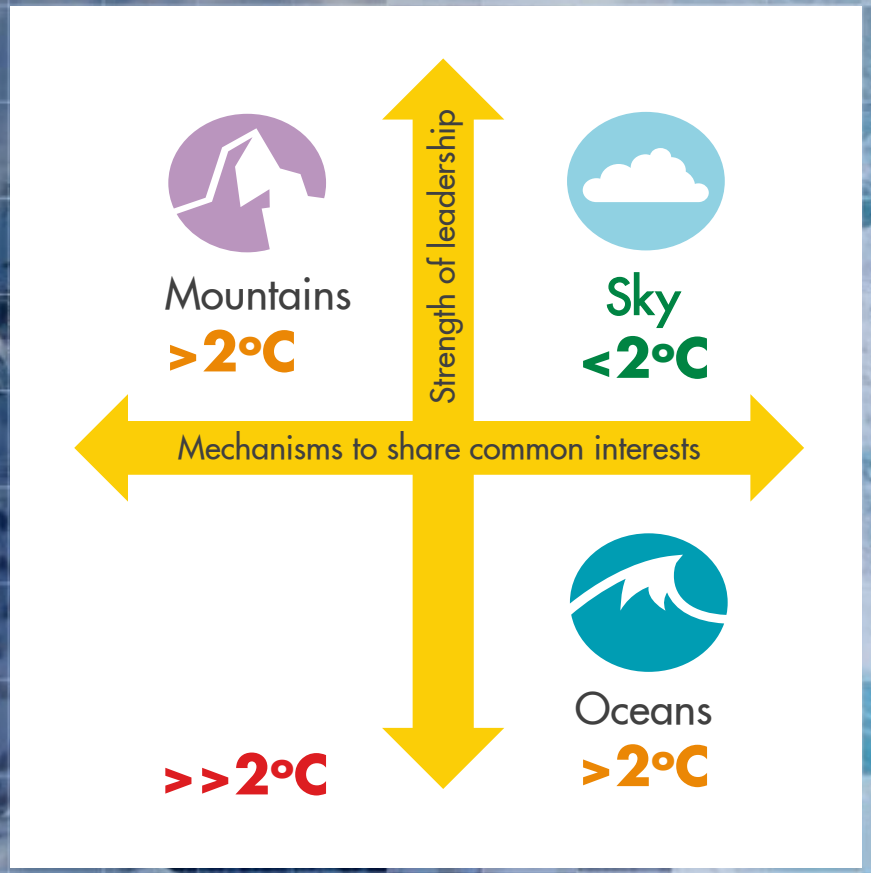
7 AFFORDABLE AND CLEAN ENERGY

13 CLIMATE ACTION

...aim to reach global peaking of greenhouse gas emissions as soon as possible;

...achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.

The New Lens Scenarios Family
Looking beyond Mountains and Oceans...



...to Sky

Sky Scenario: Navigating 21st century turbulence

Demand growth

Difficult sectors

Abundant coal

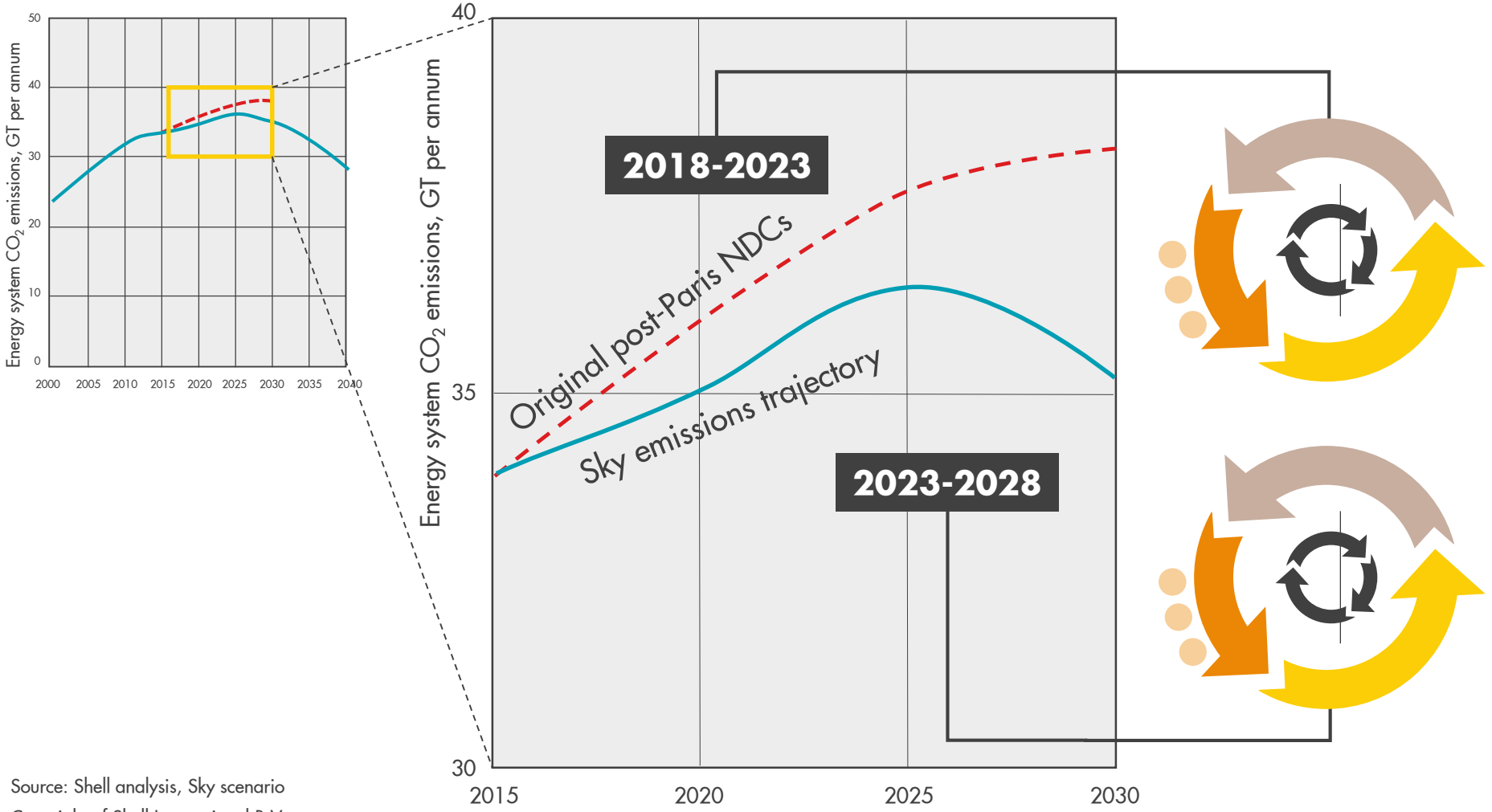
Stalled technologies

Efficiency rebound

Time

"A Better Life with a Healthy Planet"

Sky begins in today's economic & policy realities, ratchets up action, then goal-seeks within techno-economic possibilities



2018-2023

- Wide resubmission of NDCs before 2023 stocktake
- China shifts to a falling emissions pledge

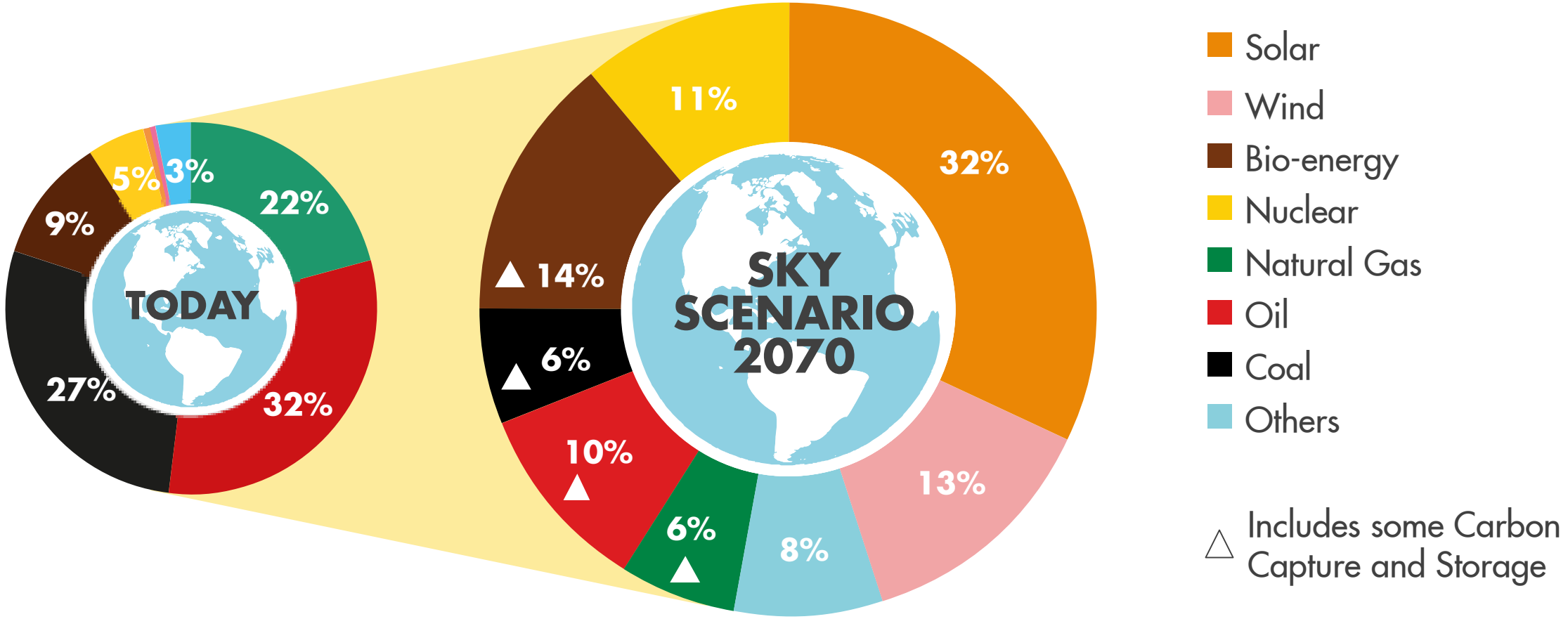
2023-2028

- All NDCs reviewed and resubmitted by 2028 stocktake
- India indicates 2030s emissions plateau

Source: Shell analysis, Sky scenario

Sky relies on a complex combination of mutually reinforcing drivers being accelerated by society, markets and governments

Sky Scenario: A possible primary energy mix for a net-zero emissions world



The size of the pie chart indicates growth of the energy system

Source: Shell analysis, Sky scenario

Sky Scenario: Seven essential elements

Electrification of final energy

Grow new energy systems

Energy efficiency

Carbon pricing

Carbon capture and storage

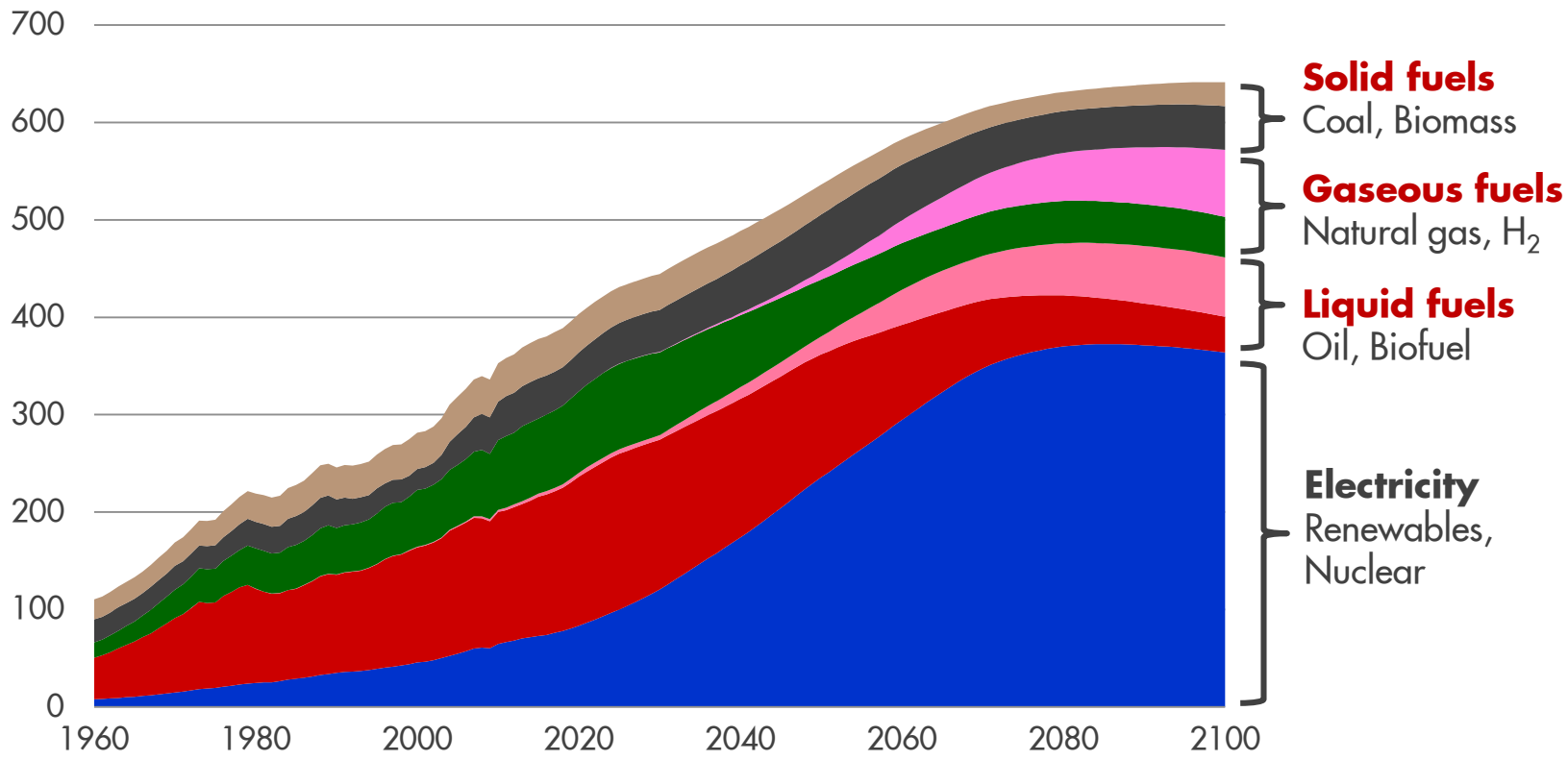
End deforestation

Underpinned by changing consumer mind-set

Sky Scenario: Deep electrification

But molecules remain important

World total final energy consumption, EJ/year

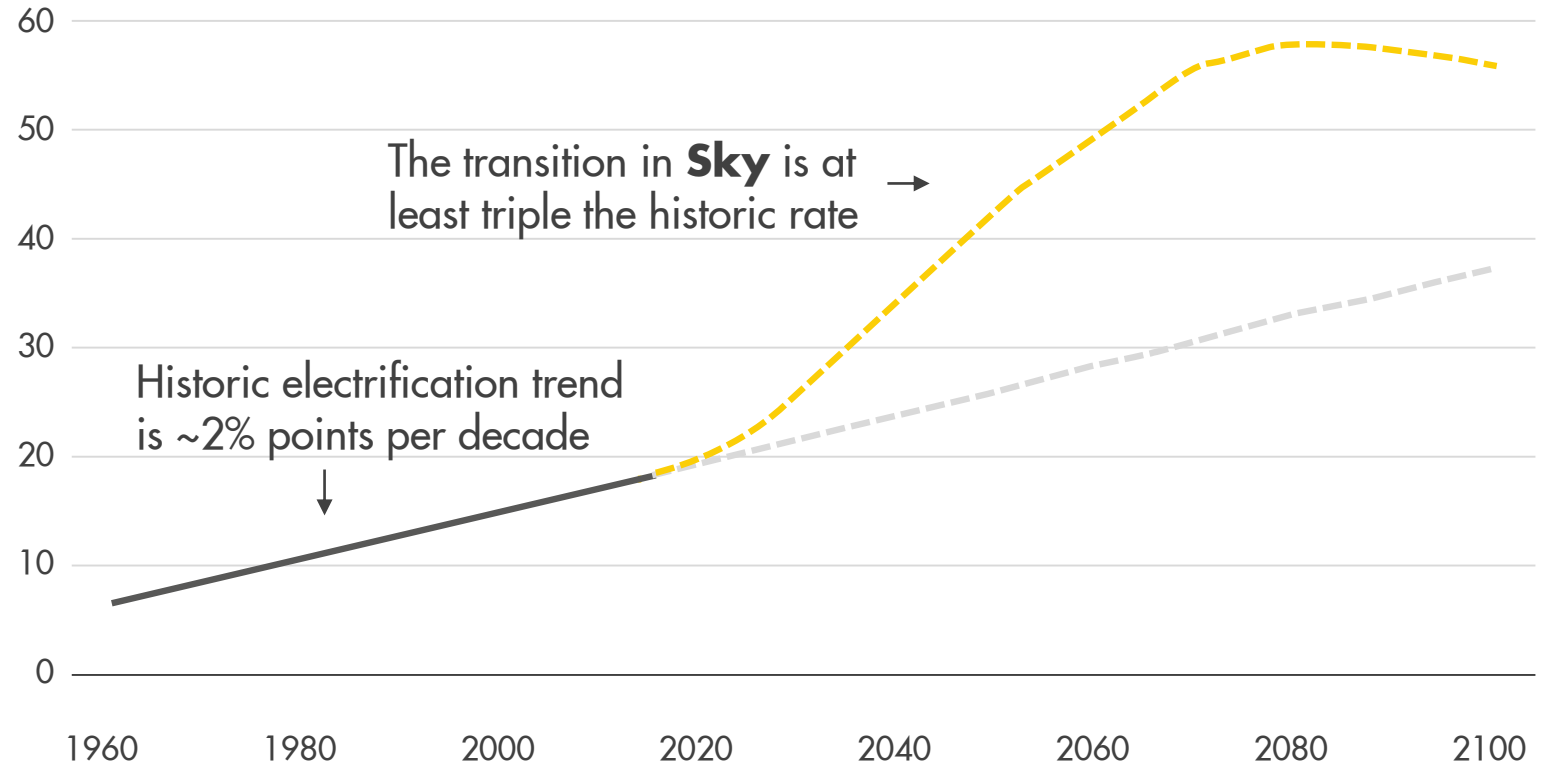


Source: Shell analysis, Sky scenario

Sky Scenario: A major ramp-up in electrification

Current trends are not sufficient

Electricity as a % of final energy use

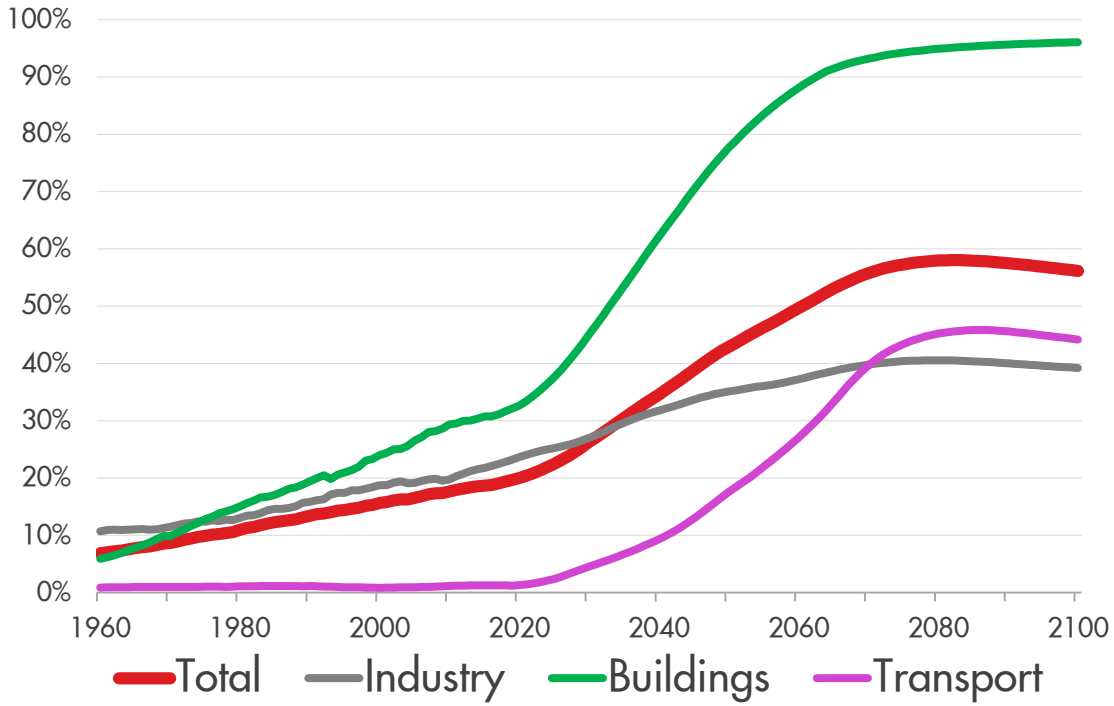


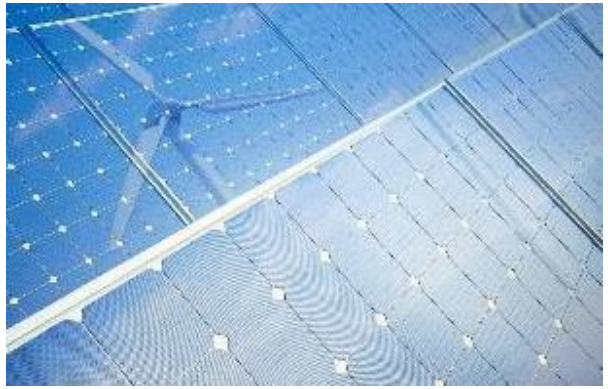
Source: Shell analysis, Sky scenario

Sky Scenario: A deep electrification story – sector by sector

Accelerating across sectors at three times the historical rate,
with global power generation growing by a factor of five

World electrification rates by sector

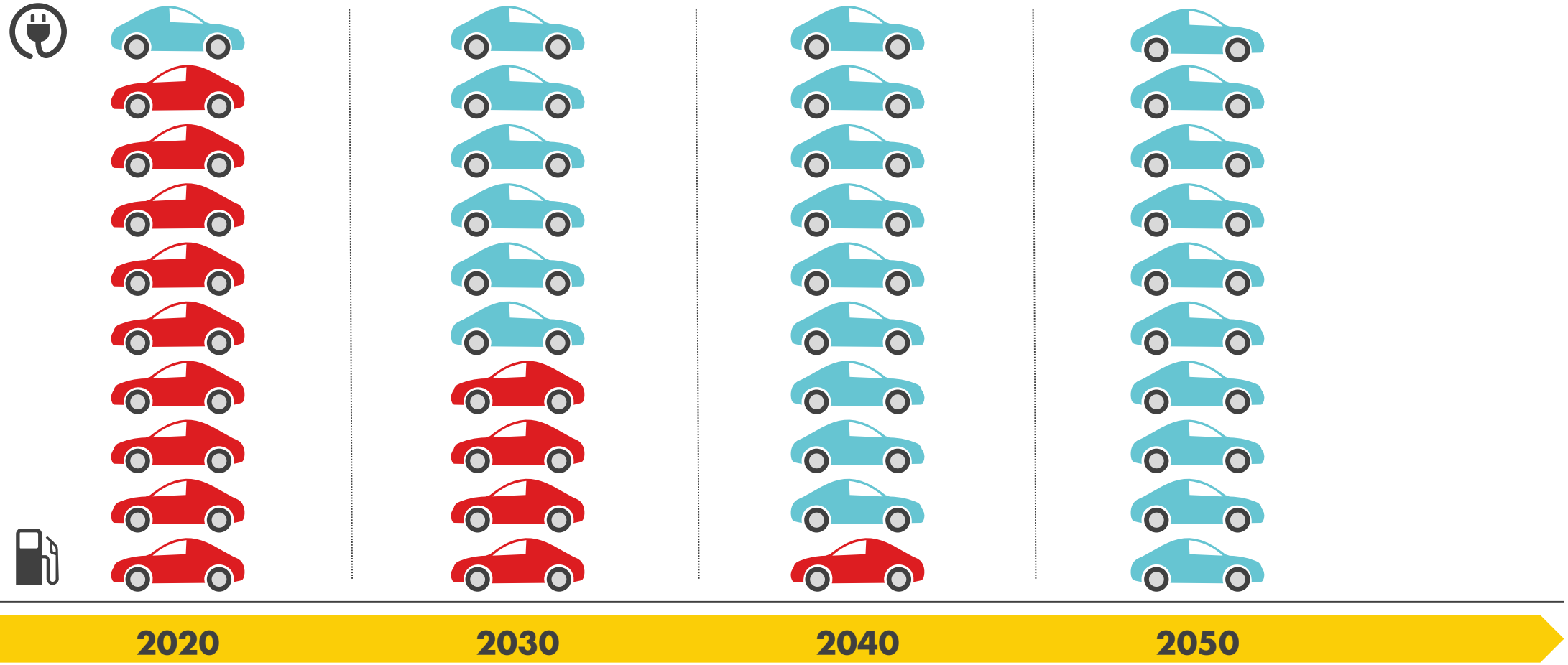




Source: Shell analysis, Sky scenario

So as early as 2030 in Sky, more than half global passenger car sales will be EVs

By 2050, you would not be able to buy a new gasoline car anywhere in the world

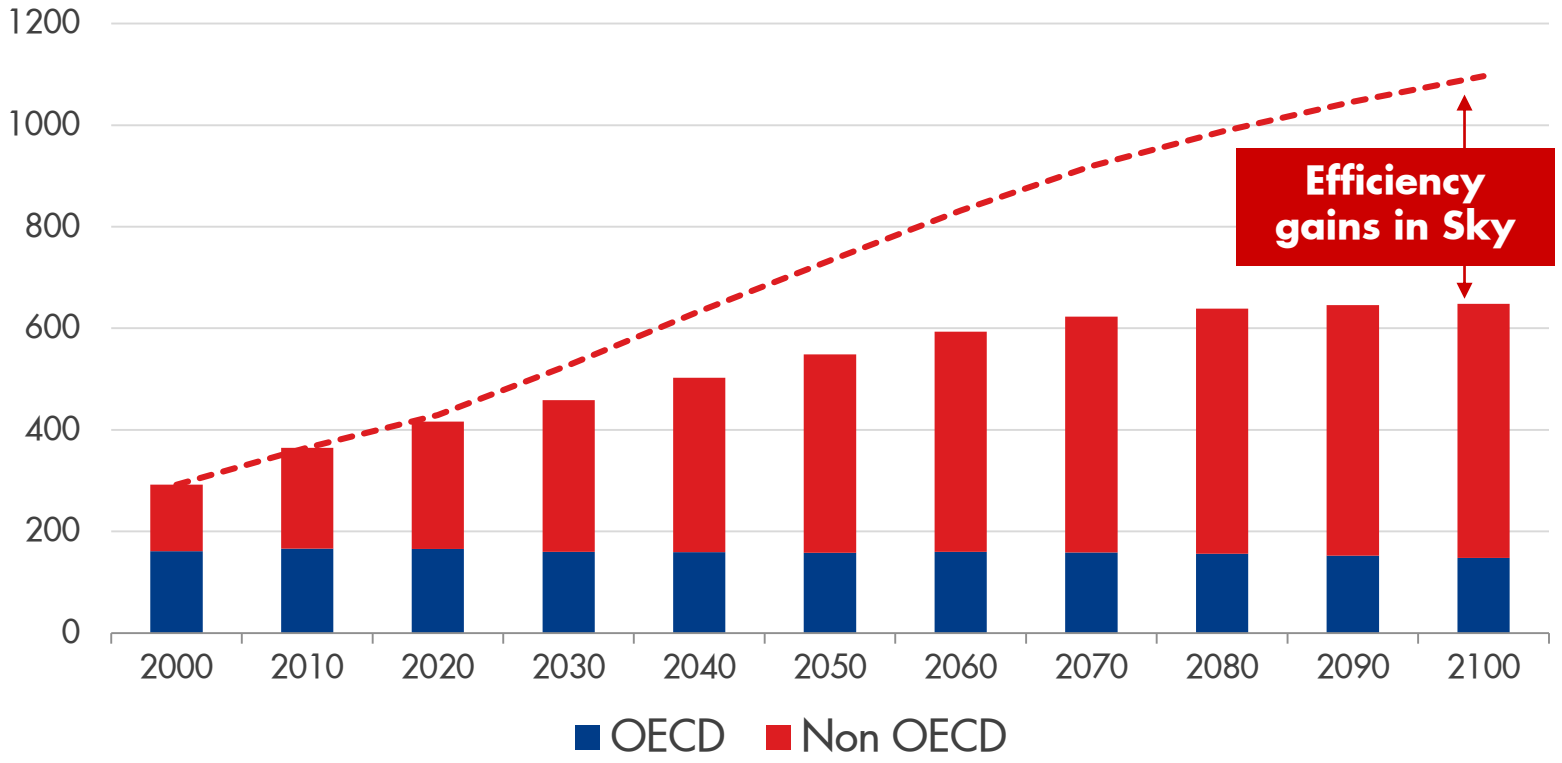


Source: Shell analysis, Sky scenario

Sky Scenario: Energy efficiency is key

Step-change leads to gains above historical trends

World total final energy consumption, EJ/year



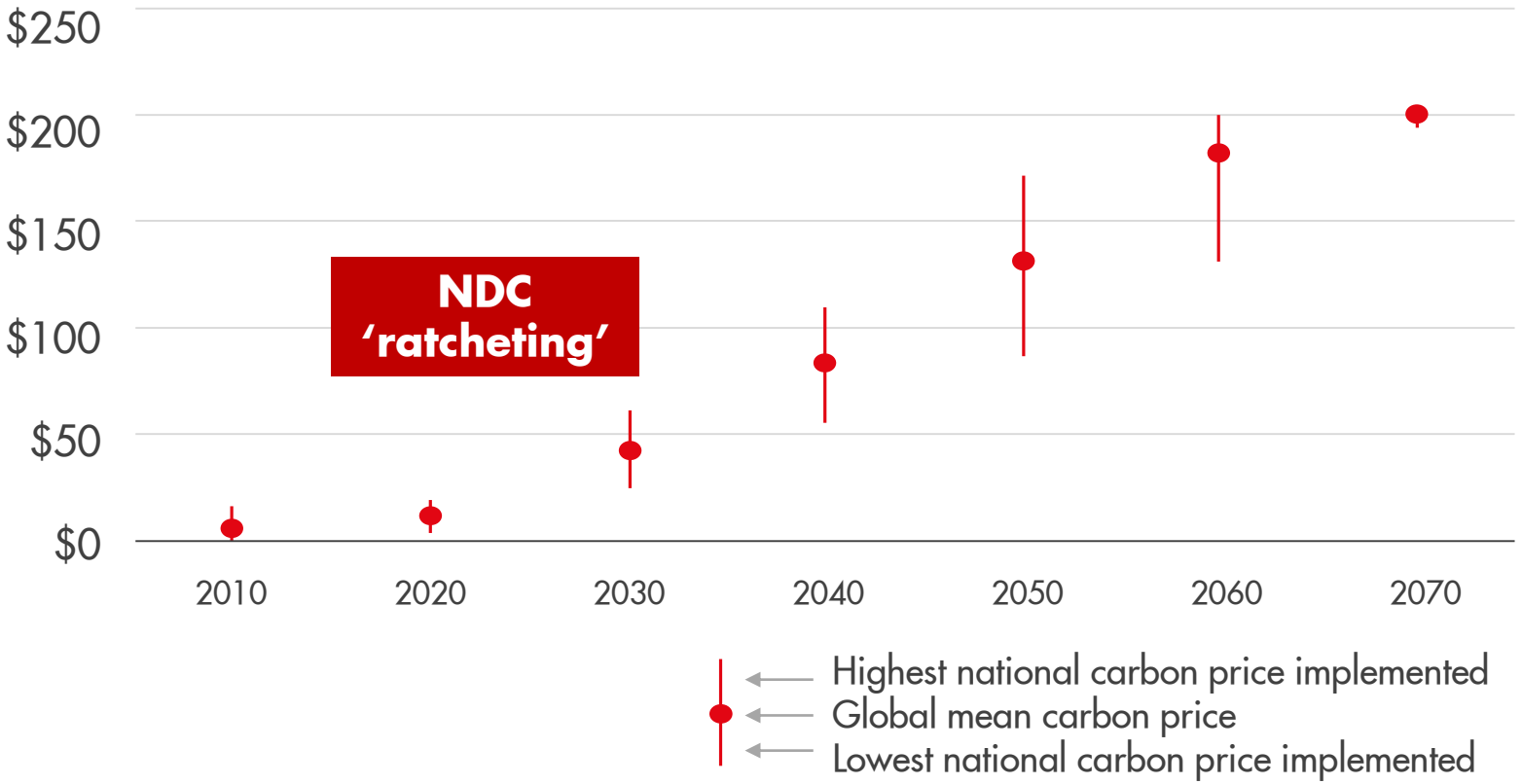
Source: Shell analysis, Sky scenario

- Rising incomes in developing regions drive global energy demand
- This is moderated by significant energy efficiency improvements

Sky Scenario: Essential policies are established

Governments rapidly adopt carbon-pricing mechanisms

Carbon equivalent price, $/tonne CO_2



Source: Shell analysis, Sky scenario

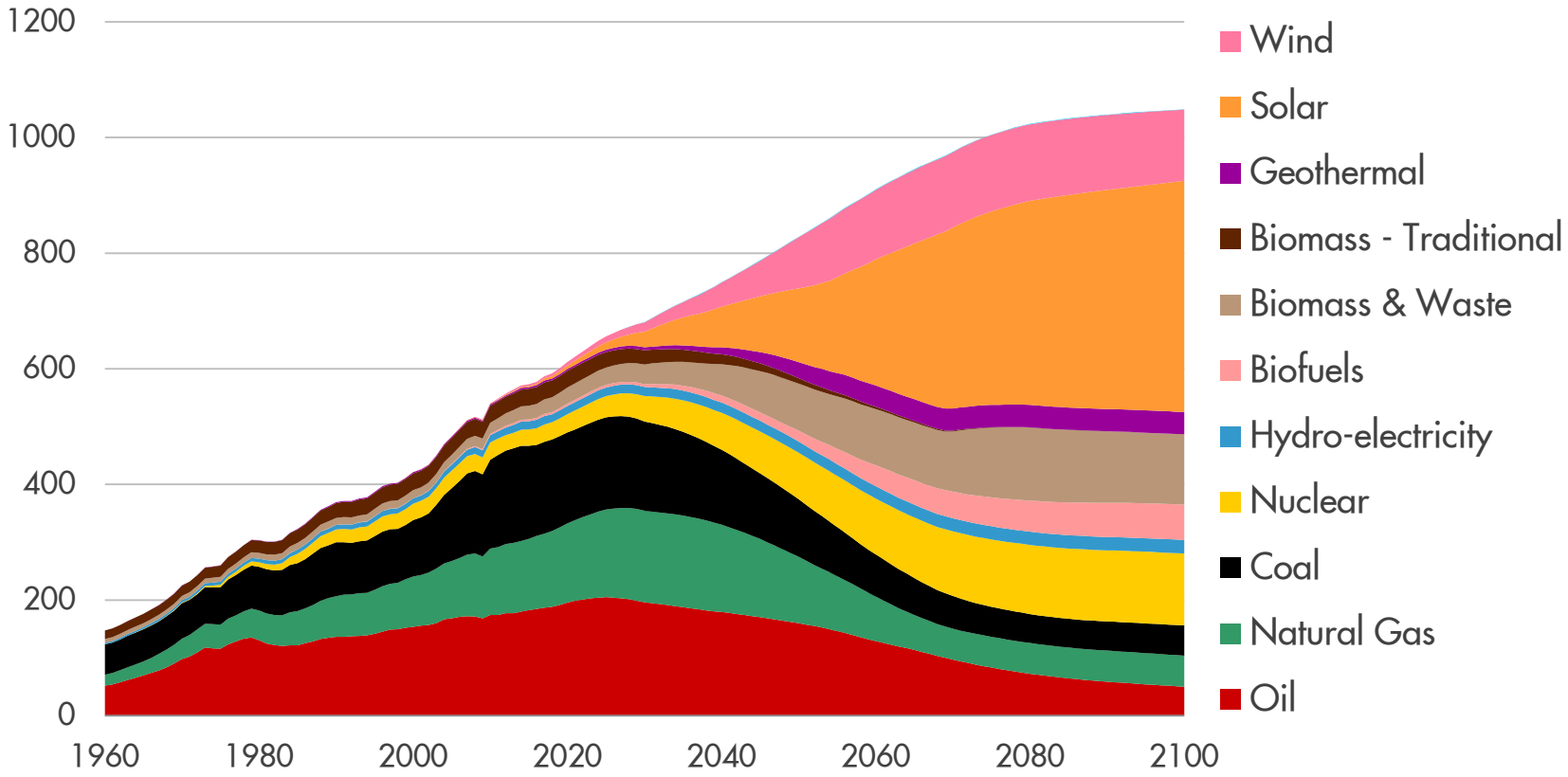
Unwavering acceleration and coordination:

- Market & fiscal mechanisms
- Standards & mandates
- Investments in infrastructure & technology

Sky Scenario: Major shifts in primary energy

By mid-century, renewables dominate

World total primary energy by source, EJ/year



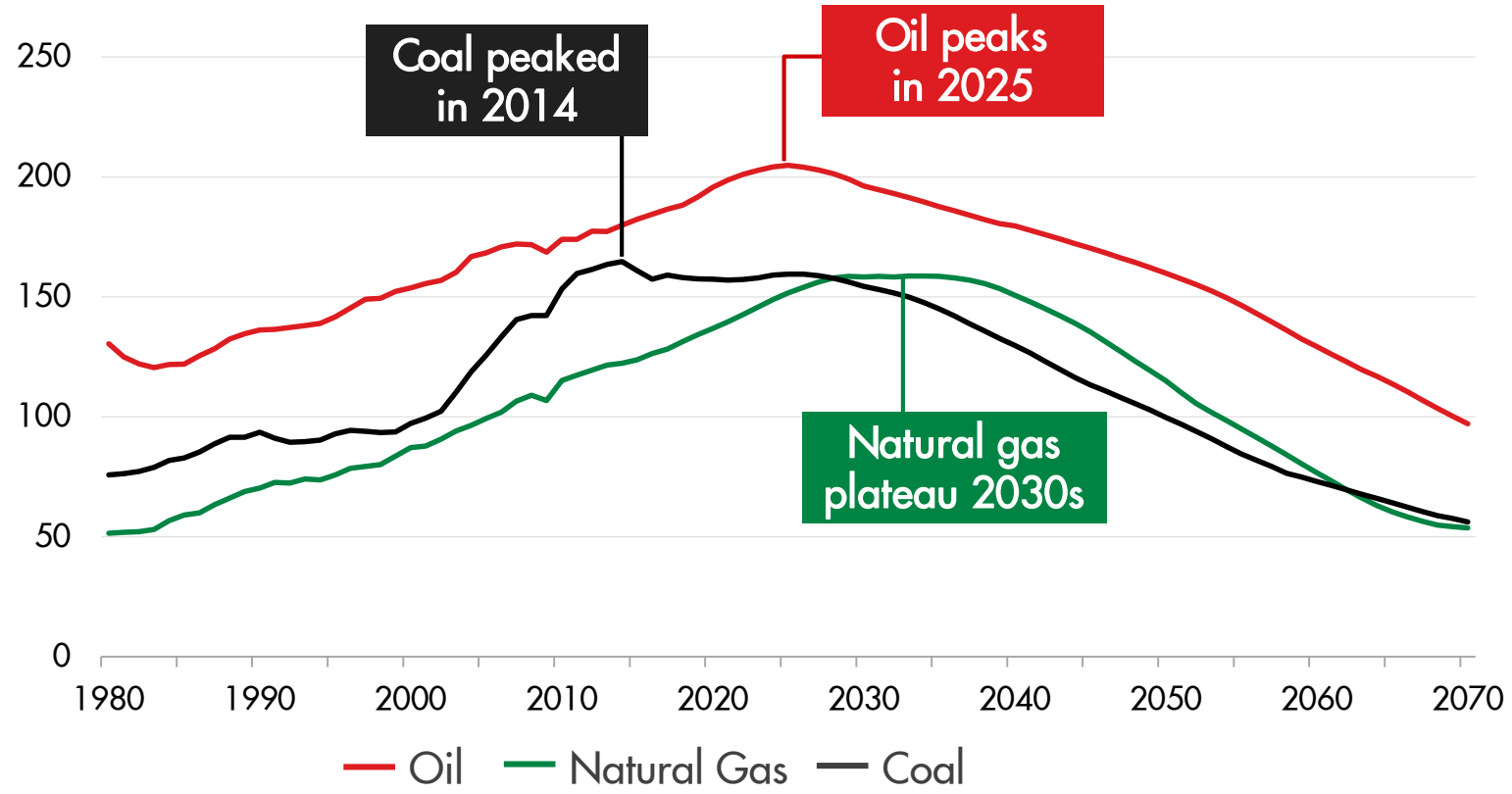
Source: Shell analysis, Sky scenario

- Natural gas is a transition fuel as wind and solar deployment ramps-up
- Solar PV passes oil as the largest energy source in the 2050s

Sky Scenario: Fossil fuel demand peaks

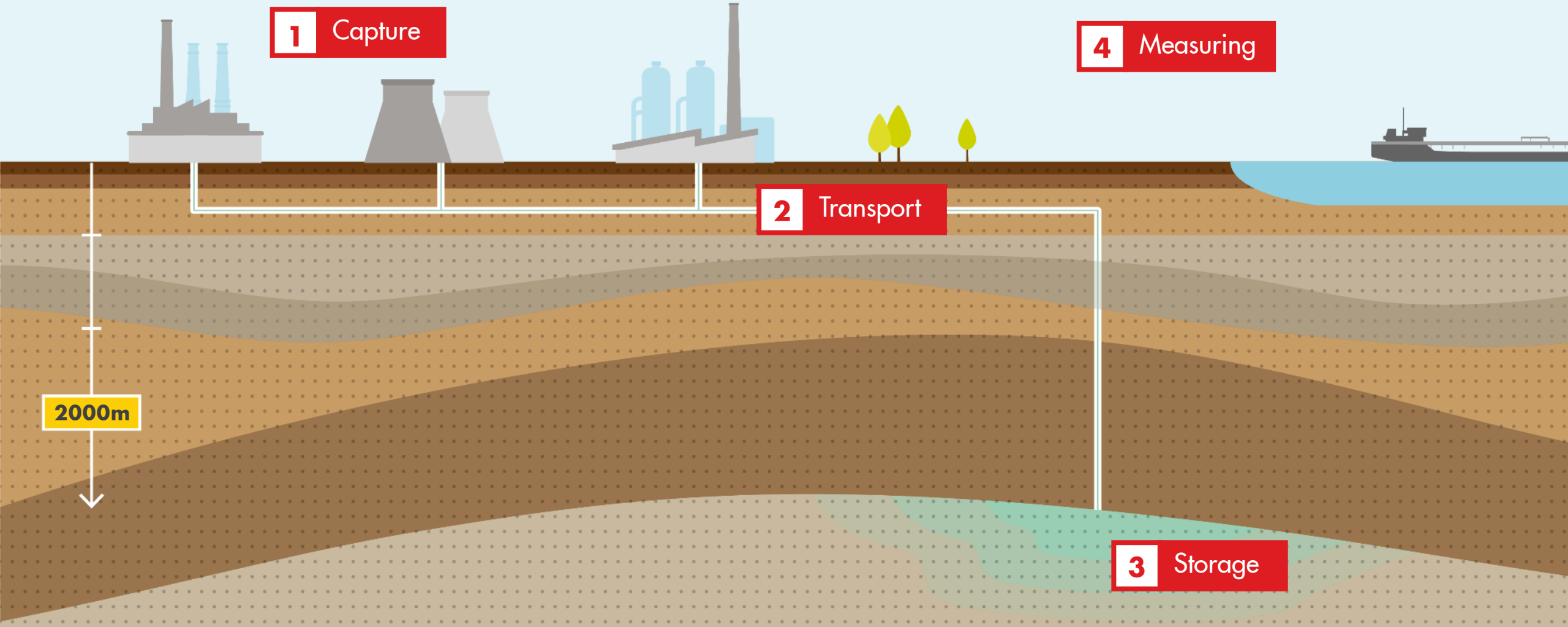
Needs continue where substitution is difficult

World total primary energy, EJ/year

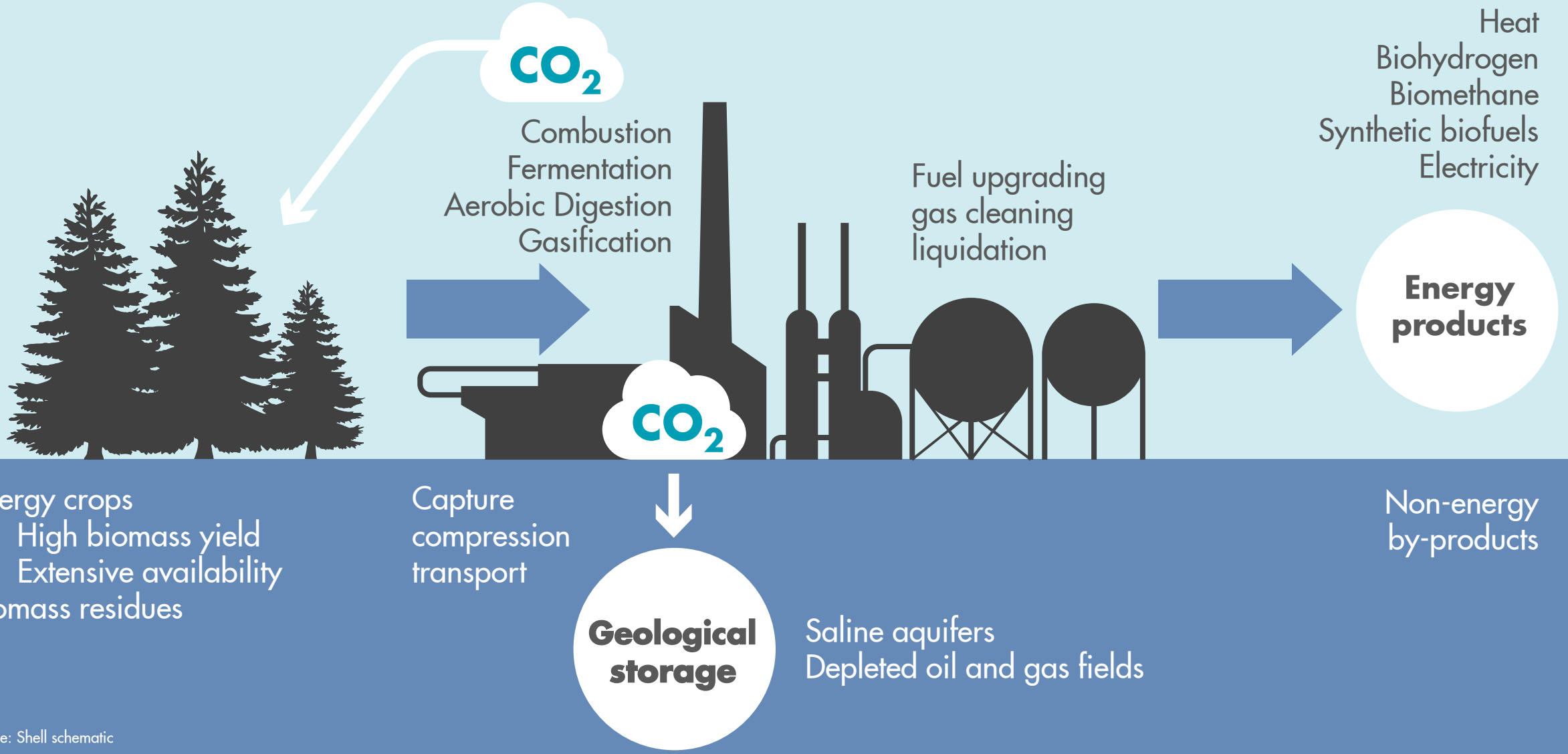


Source: Shell analysis, Sky scenario

Sky Scenario: Carbon capture and storage (CCS) as a man-made sink



Sky Scenario: Bioenergy with CCS has an important role to play



Source: Shell schematic

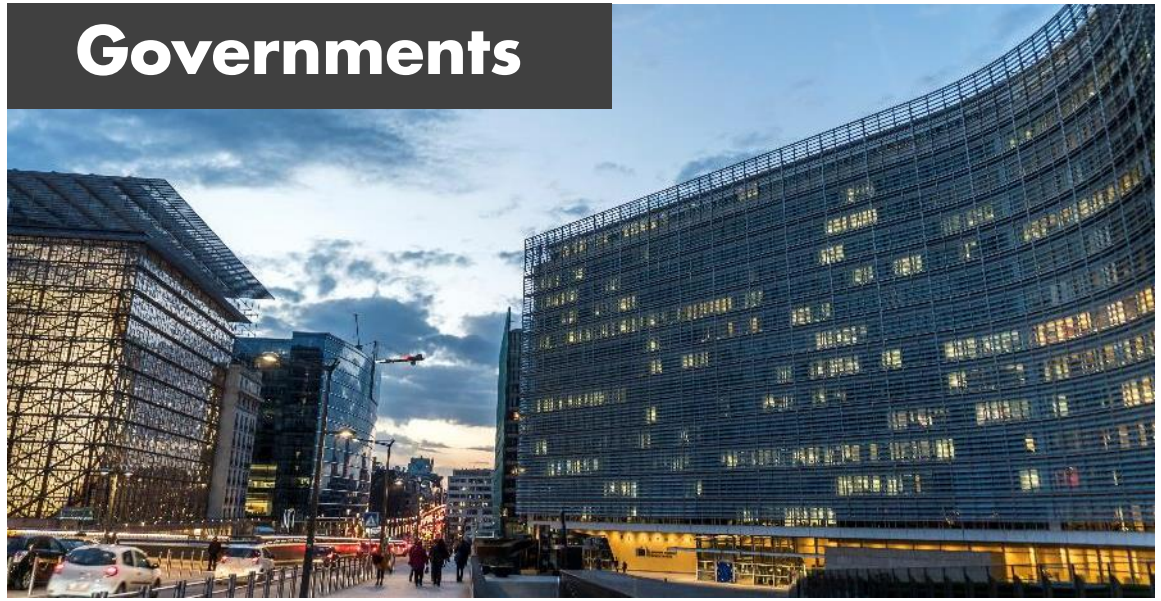
Sky Scenario: An end to deforestation by 2070





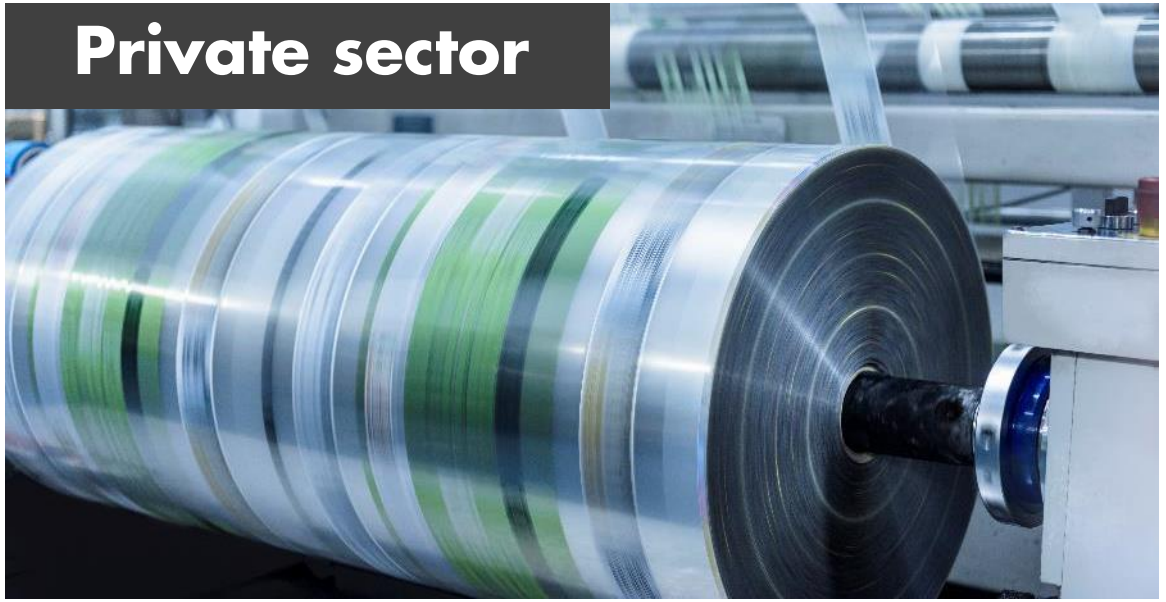
Meeting the Paris ambition = re-wiring the global economy in 50 years

Governments



- Promoting critical new pre-commercial technologies
- Developing key infrastructures
- Framing new market structures

Private sector



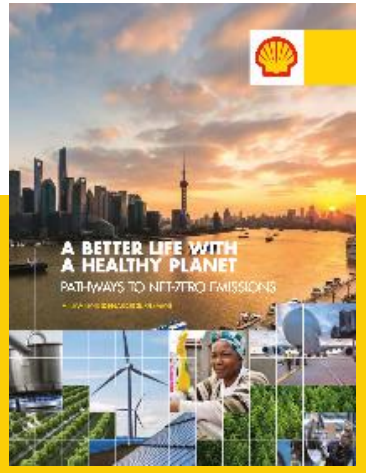
- The engine for commercial innovation and scaling
- Mass-deployment and integration of new technologies
- Providing customers with new possibilities

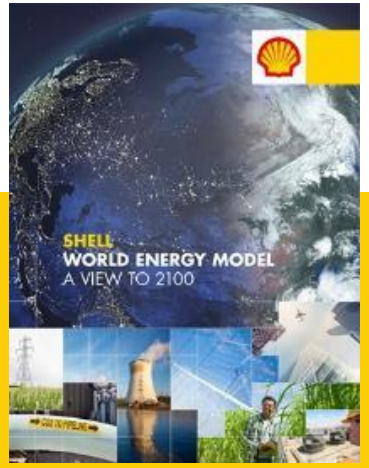
Acceleration is achieved through policy and technology uptake, and unprecedented degrees of cross-boundary collaboration

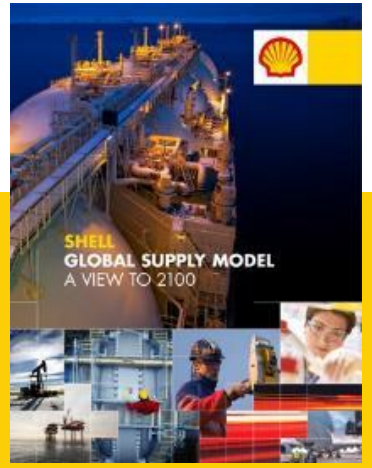
Read more about Sky and download the data-set

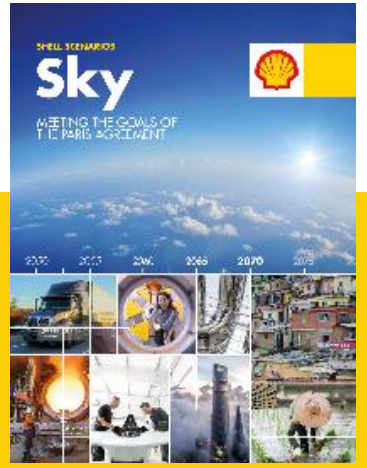
www.shell.com/skyscenario

Q&A









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