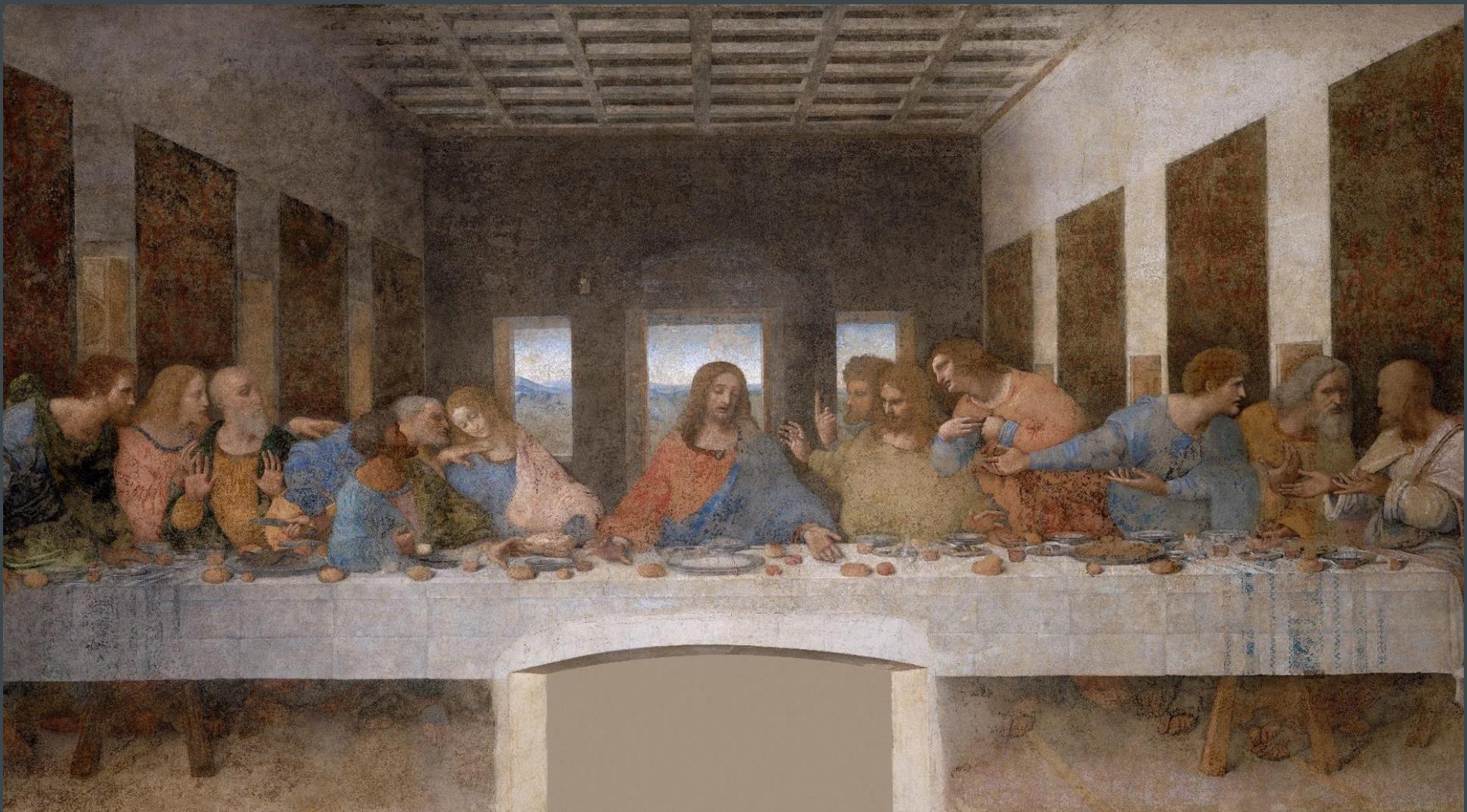


SODOM AND GOMORRAH ON THE ENERGY MARKETS: WRATH OF GOD OR ORGANIZED CHAOS? SAVE YOURSELF IF YOU CAN

Igor Sechin, Chief Executive Officer
Rosneft Oil Company



“The Last Supper”, Leonardo da Vinci

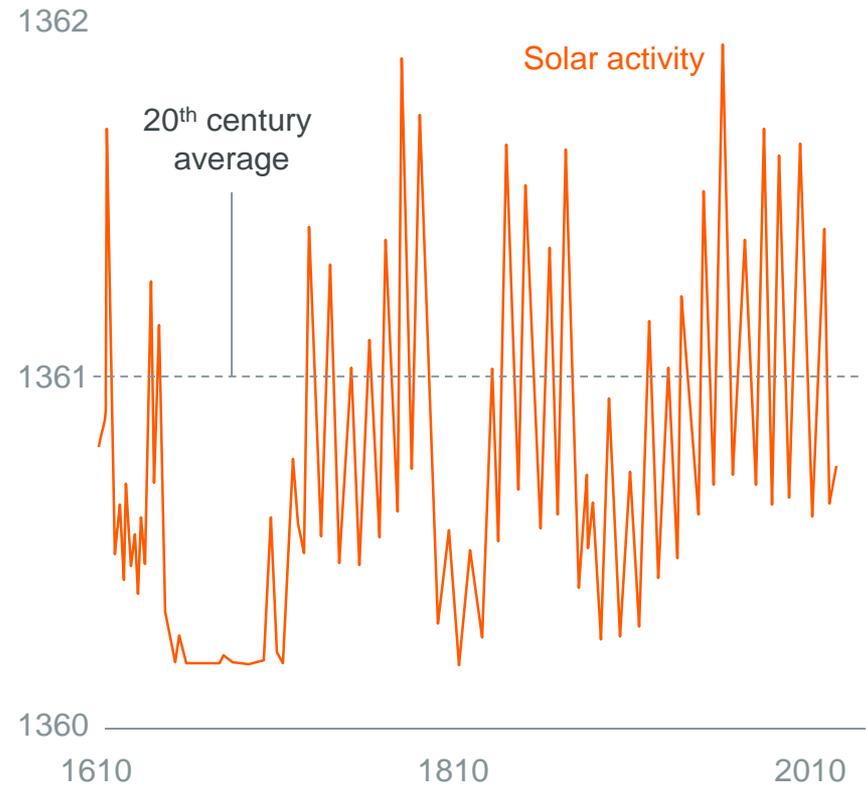
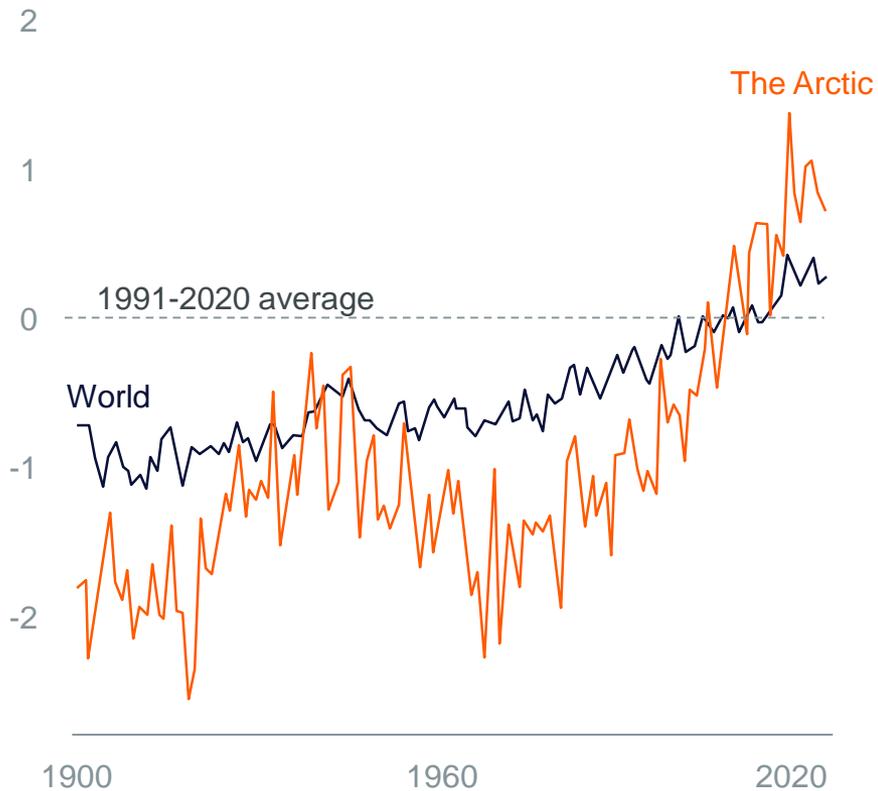
The Constantly Changing Climate



Temperatures in the Arctic Increase Faster

Difference from Average Temperature
°C

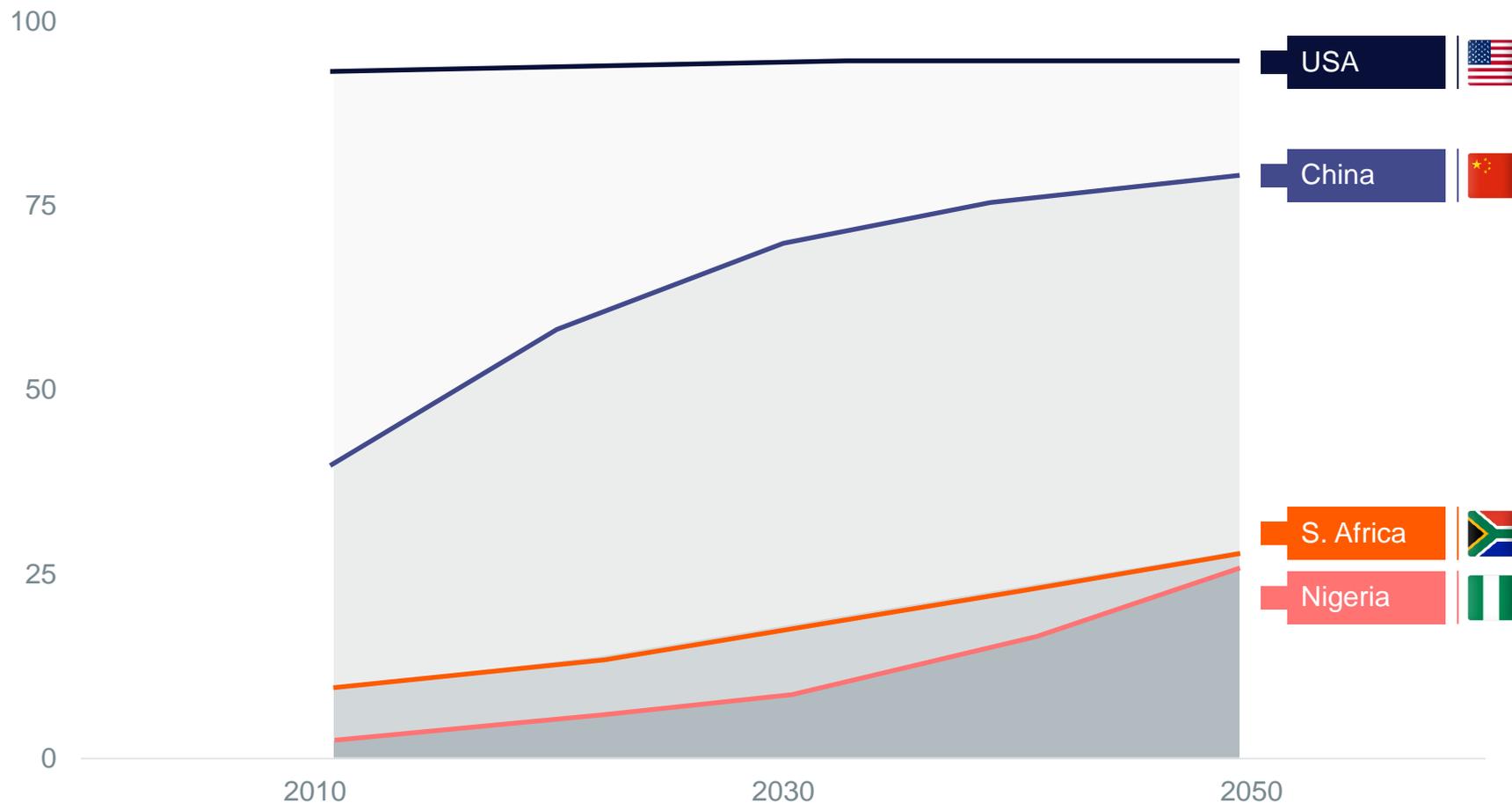
Solar Irradiance
Watts/m²



Global Warming Stimulates Energy Demand

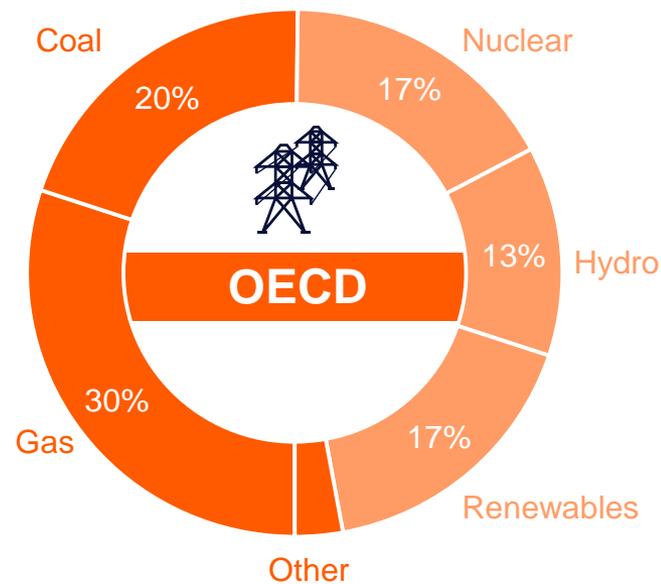
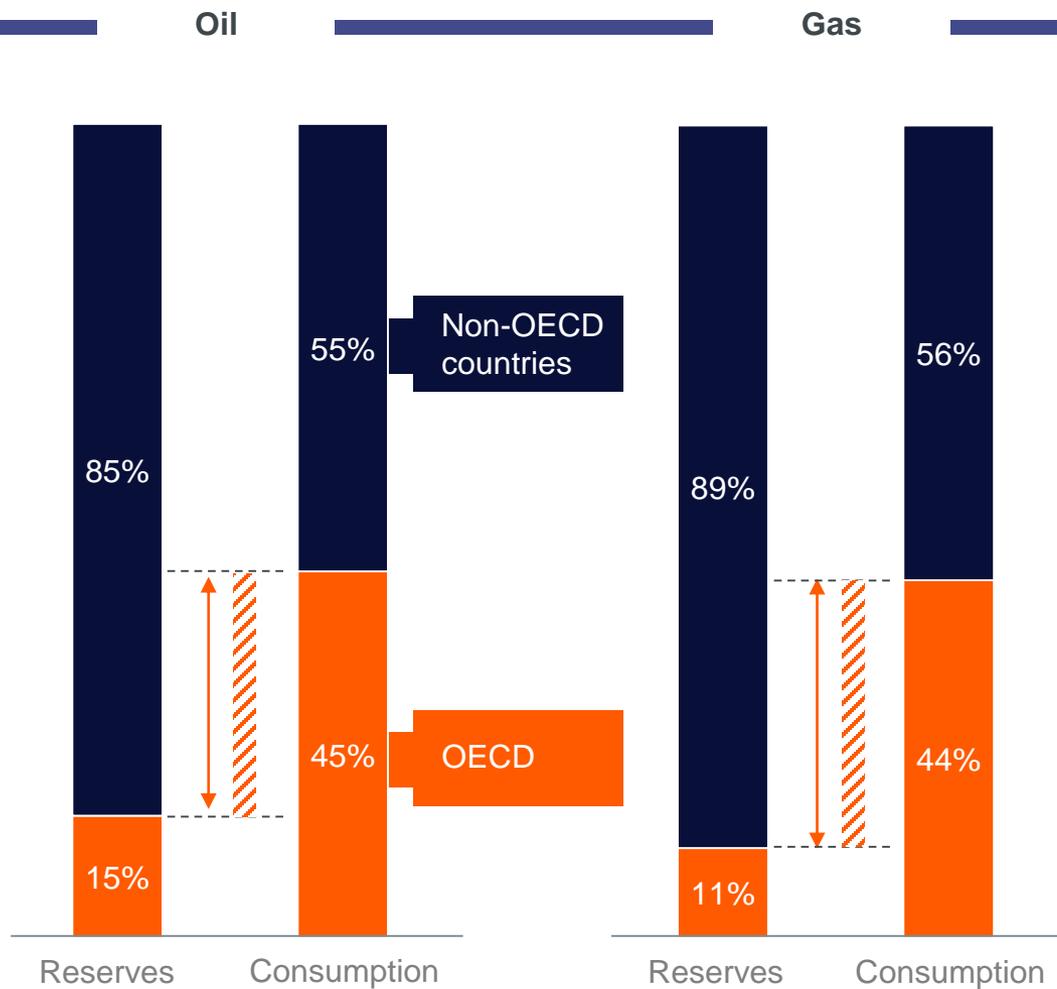
Air Conditioning Coverage

Share of high-income households with air conditioning, % of total



Energy Transition Is Not Backed by Resources and Technologies

OECD Countries in the Global Energy Resources Markets



Cost of Energy Transition

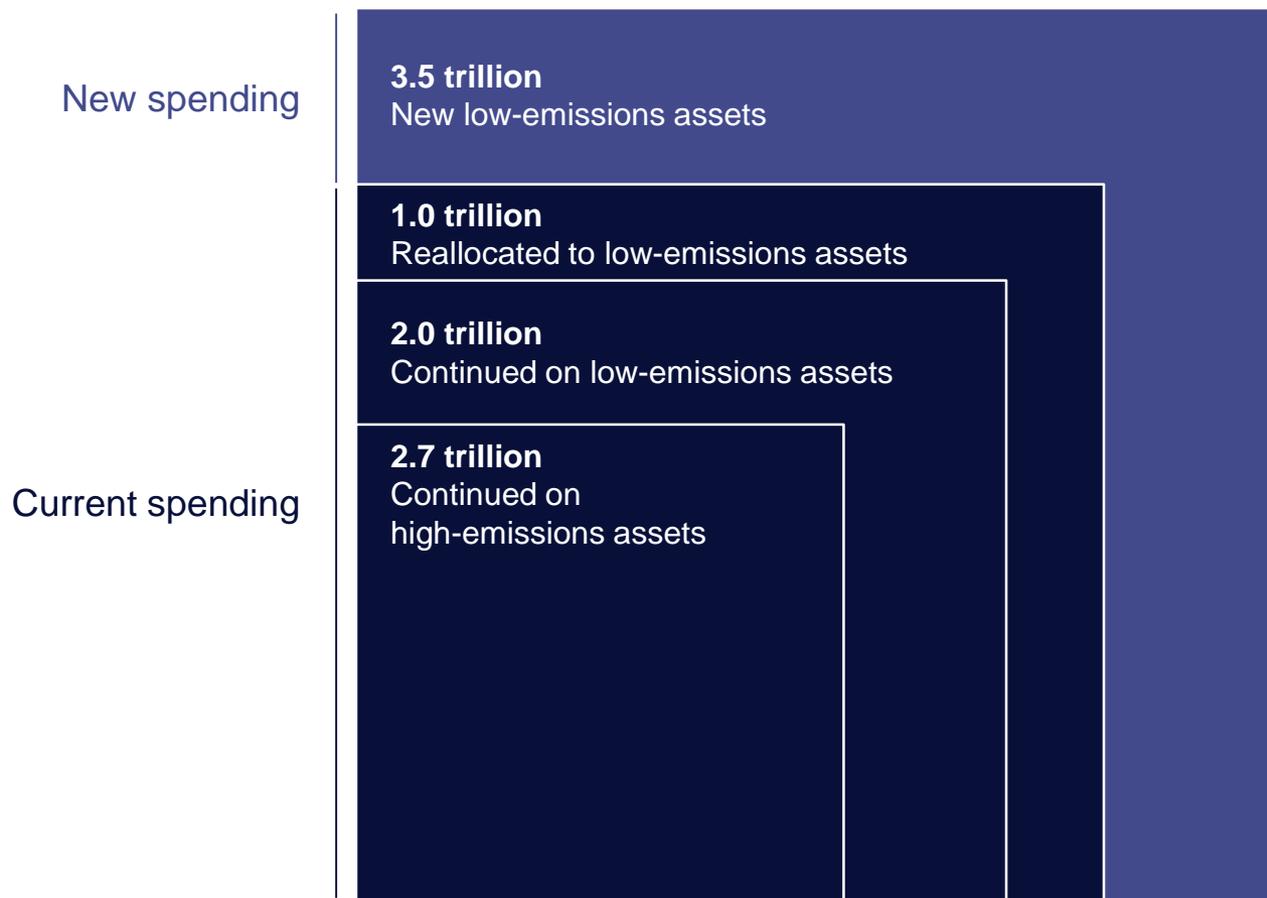
Total Annual Spending to Achieve Net Zero by 2050

\$

\$9.2trln x 27 years

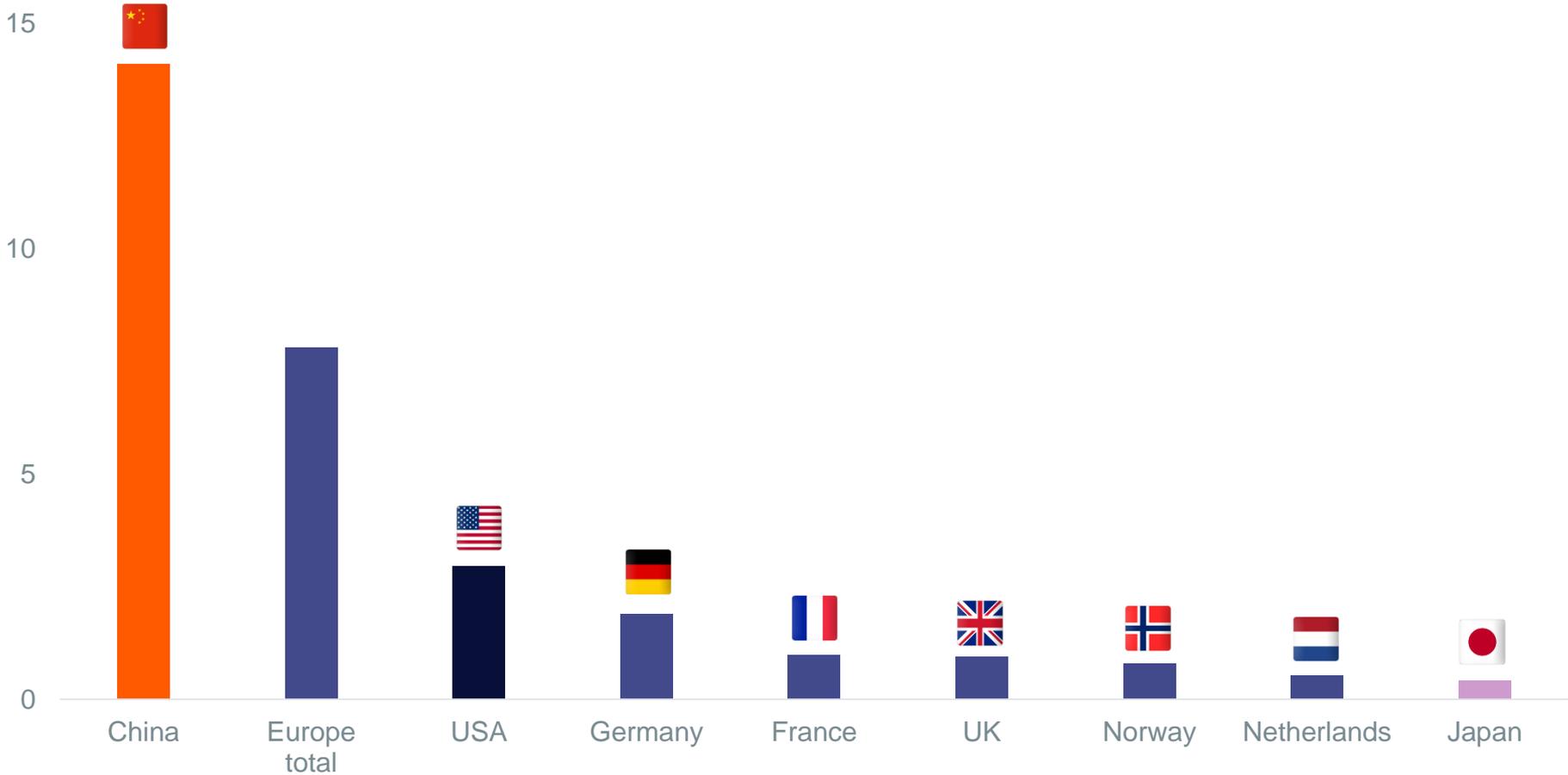
\$250 trln

by 2050



EVs Are Still a Privilege

EV Passenger Car Fleet by Countries and Regions
million cars



Sources: IEA, Statista, Bloomberg

Additional Energy Demand Comes From Transport

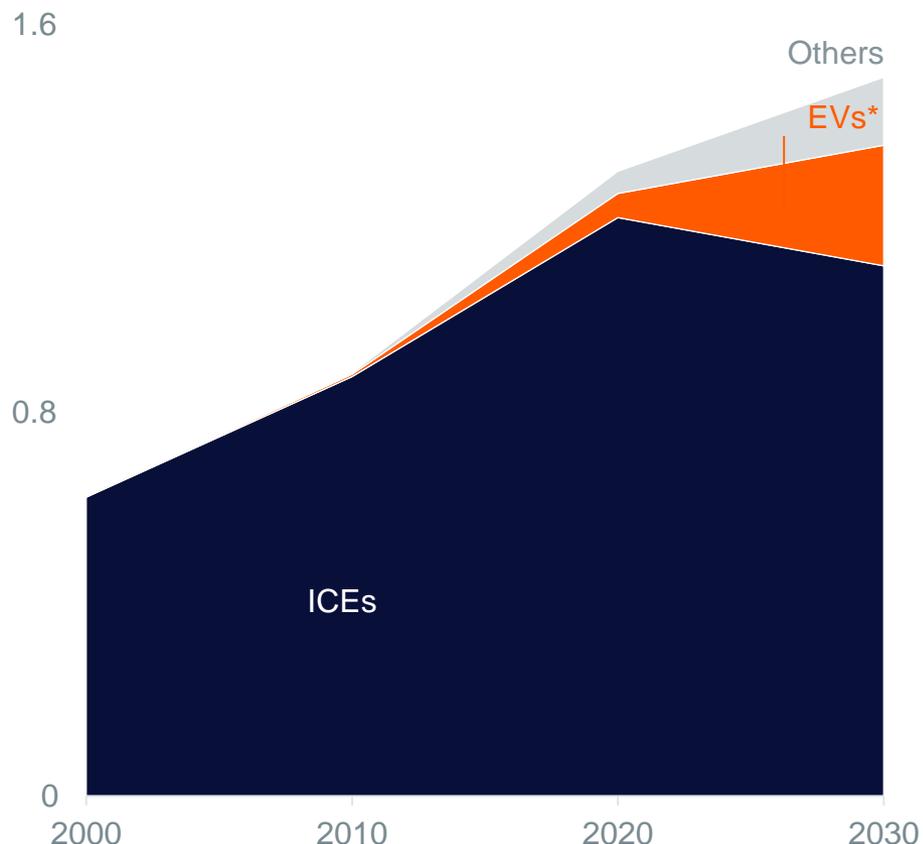
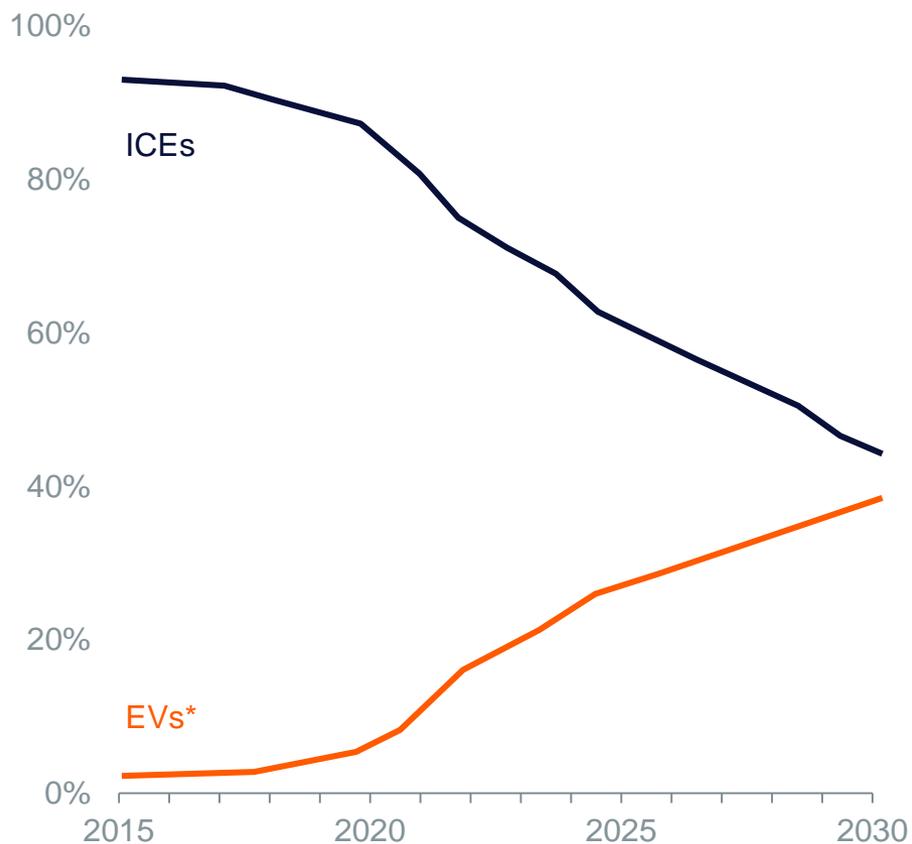
Share of Electric Vehicles in Sales

%



Growth of ICE and Electric Vehicles Fleet

billion vehicles



* Including plug-in HEVs
Sources: IEA, Bloomberg, Wood Mackenzie

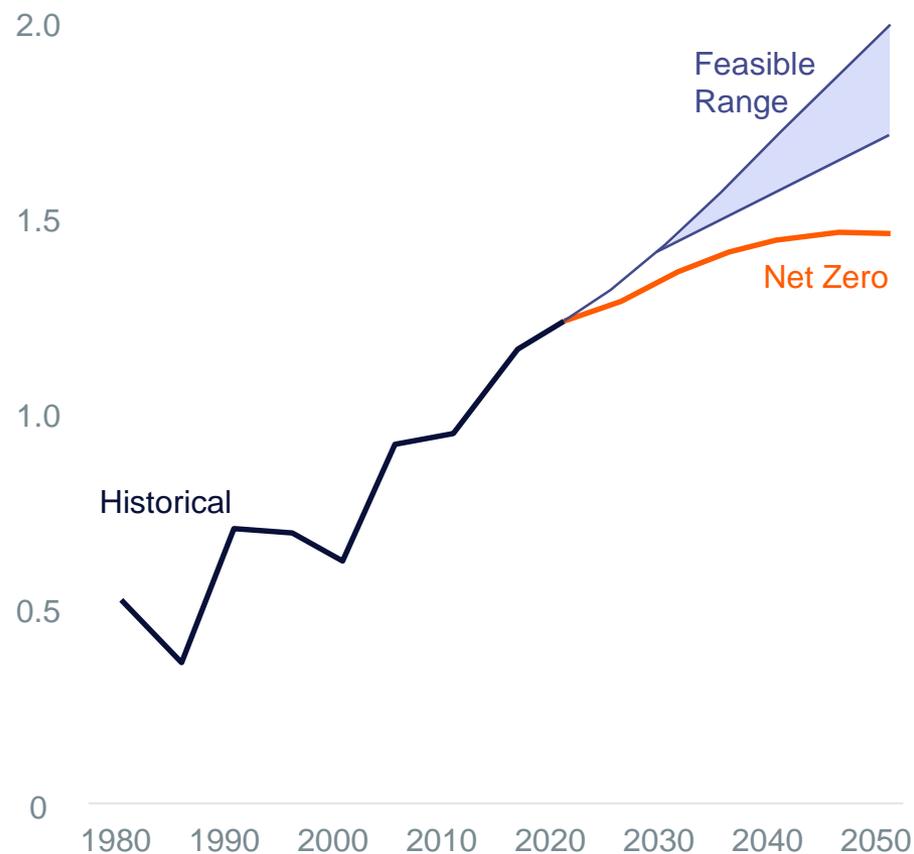
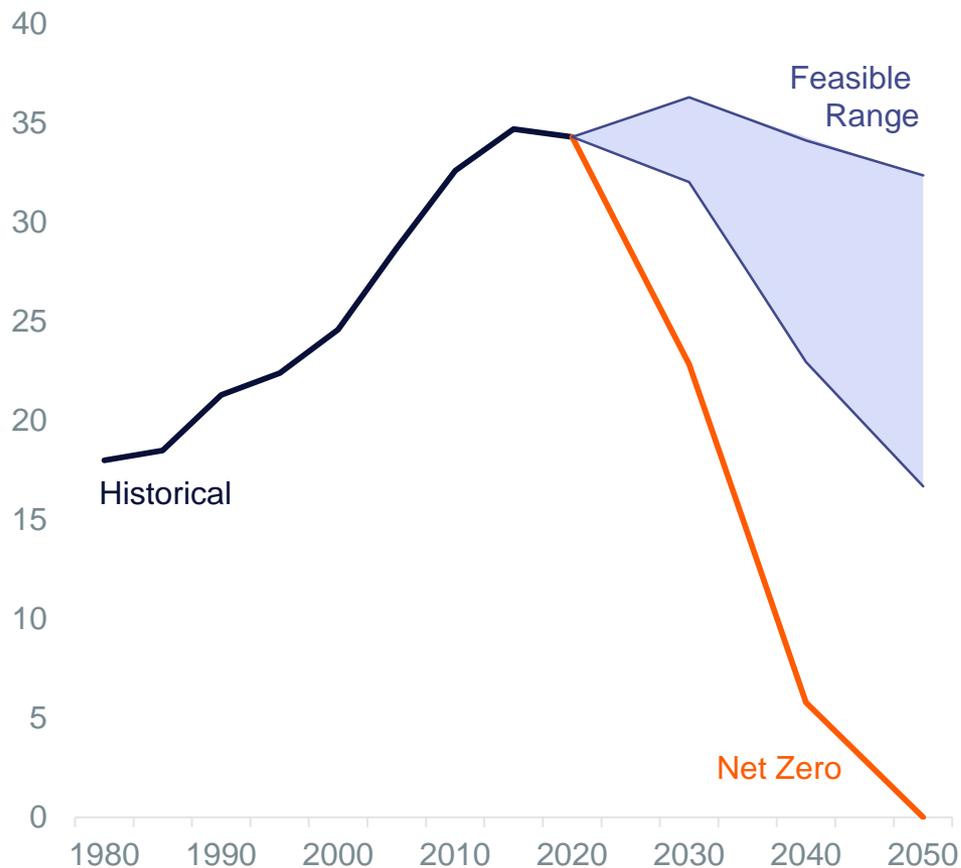
Current State of Technologies Cannot Facilitate Net Zero by 2050

GHG Emissions Forecast

Gt CO₂

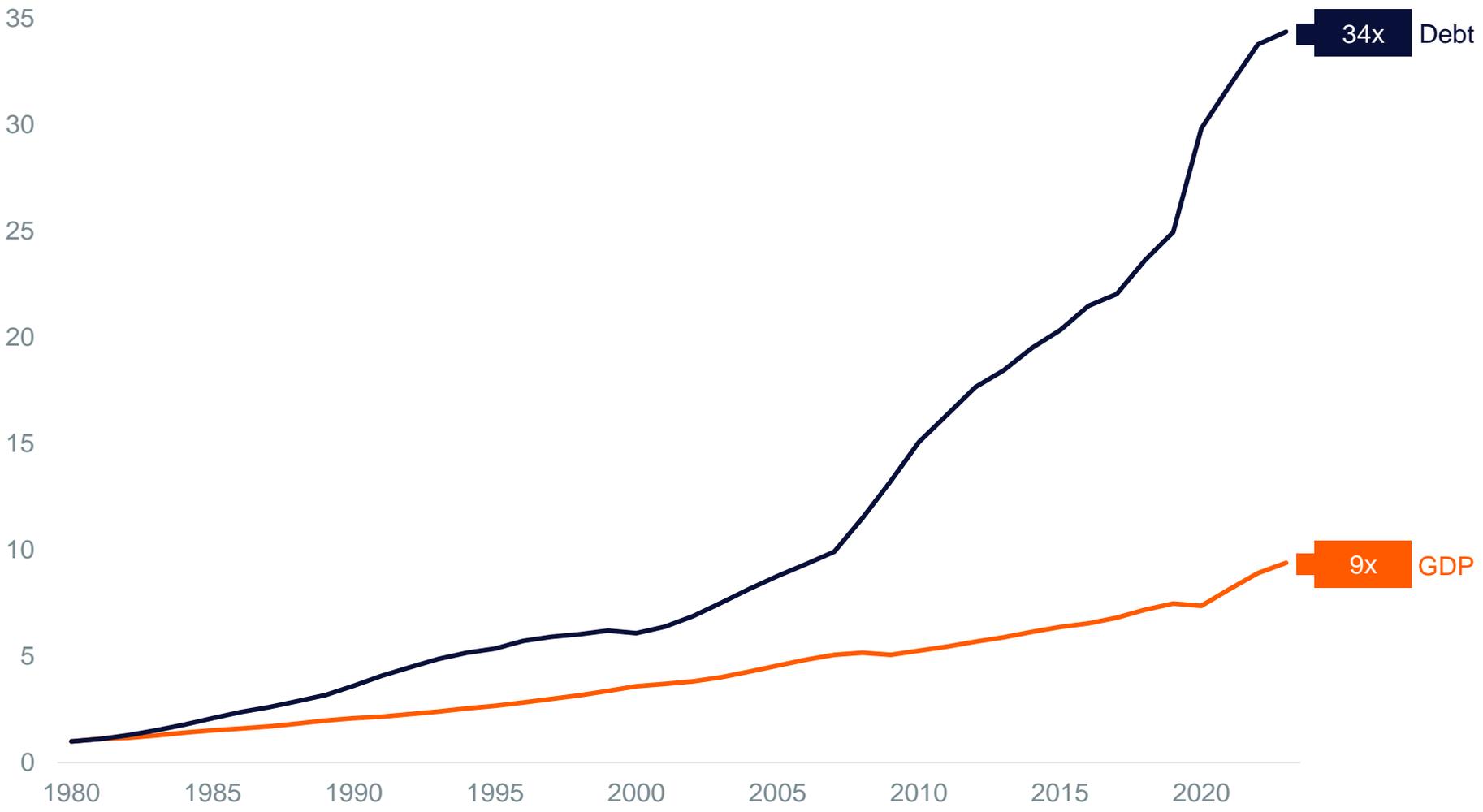
Global Temperature Growth

°C



US Debt Default Issues: Deferred Bankruptcy

US Nominal GDP and National Debt
1980 = 1.0

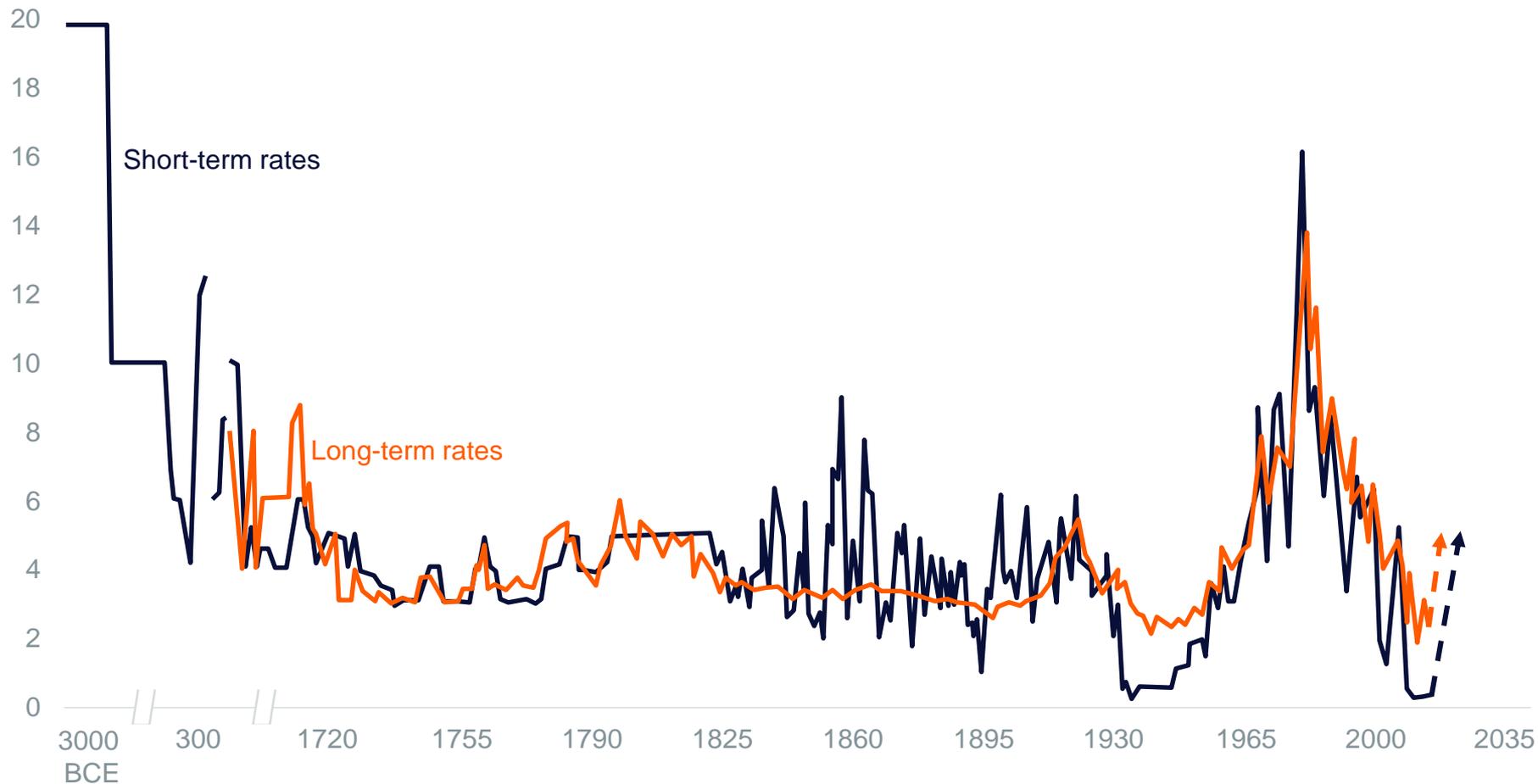


Source: U.S. FRS

The Era of Low Interest Rates Has Come to an End

Interest Rates

%



Sources: Bank of England, Global Financial Data, Homer and Sylla "A History of Interest Rates"

Ways Out of Debt: Inflation, Default or... War

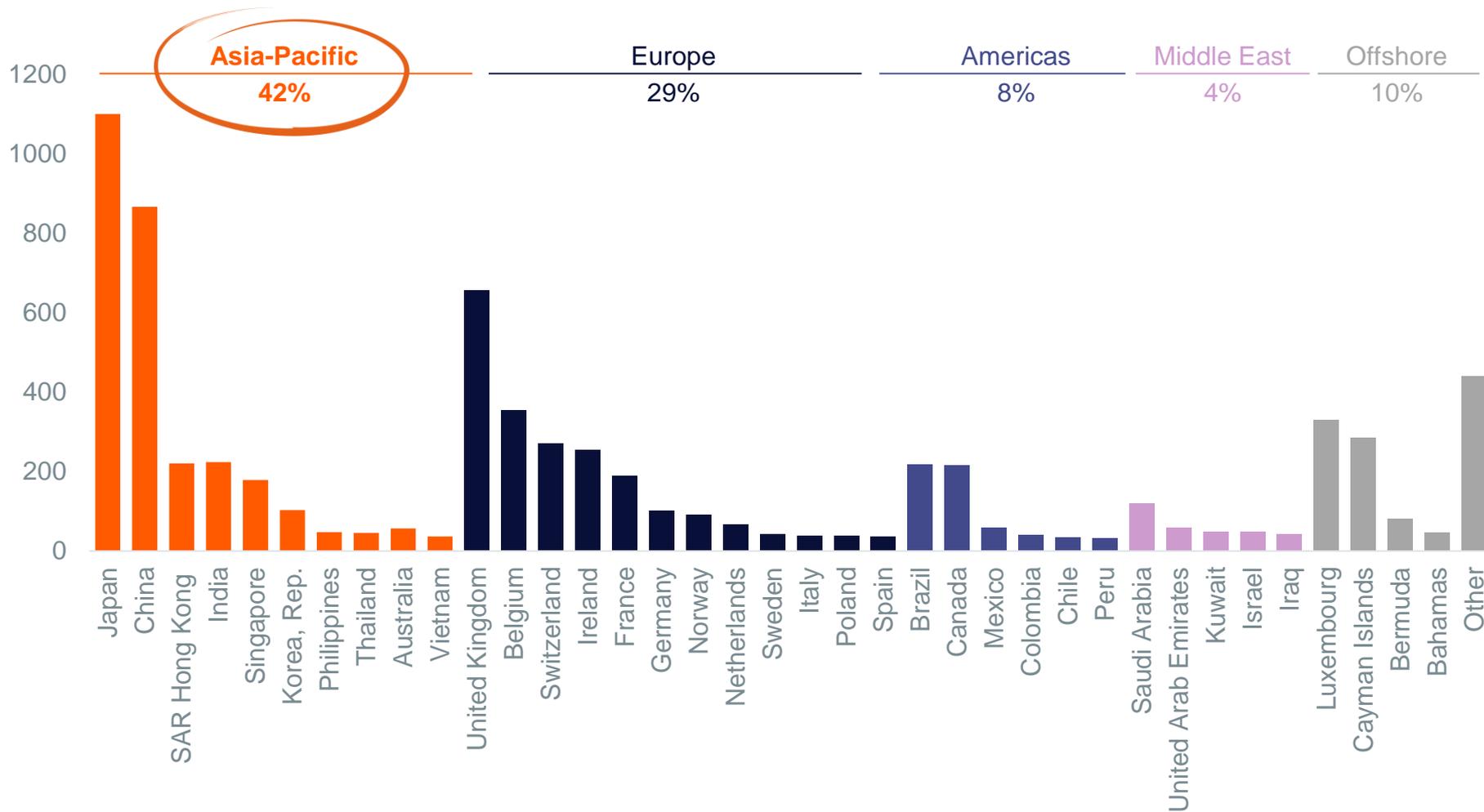
US Federal Debt Held by the Public
% of GDP



Who is the Major Holder of US Debt?

Foreign Holders of US Treasury Securities

Billion USD

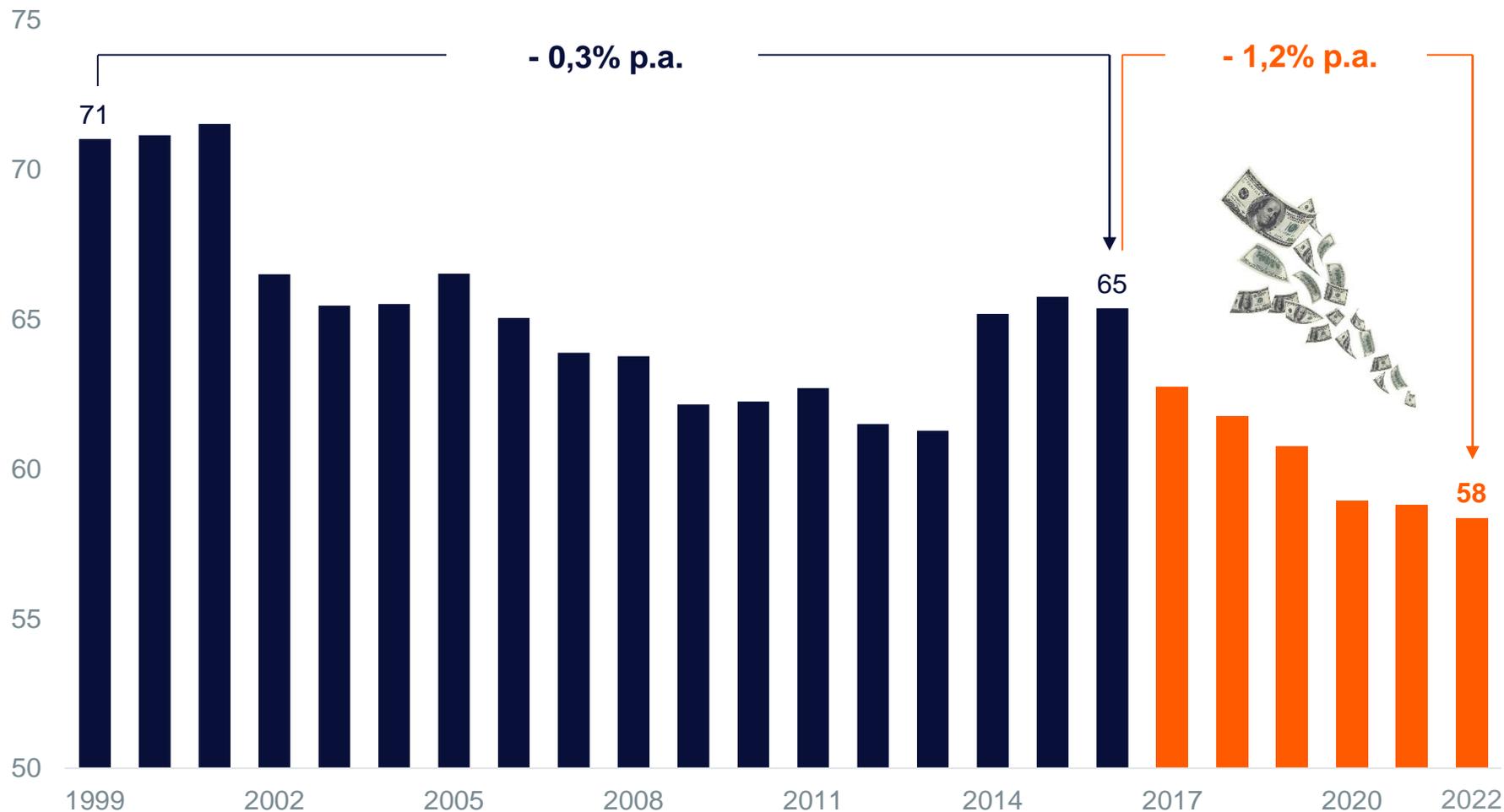


Source: U.S. Department of the Treasury

Reserve Currency Decline

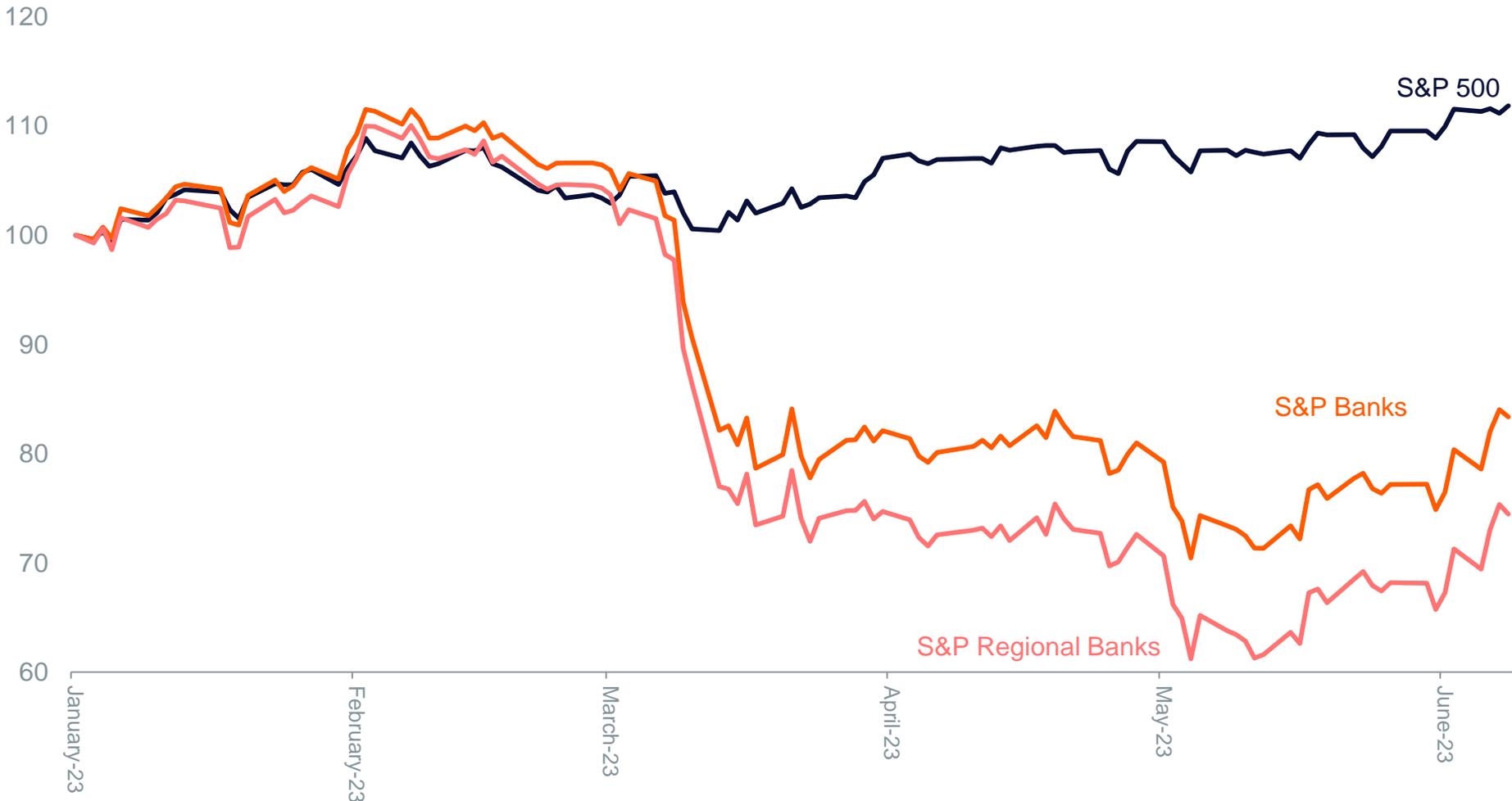
Dollar Share in International Gold and Foreign Exchange Reserves

%



Systemic Risks for US Banking System

S&P 500 Index
Index (01.01.2023 = 100)



Source: S&P Global

What Will Replace the Dollar?



"The Fortune Teller", Caravaggio

Market Economy Disruption. State Instead of Market

Effectiveness

Security

Free Markets

State Regulation



Competition

- Openness
- Transparency



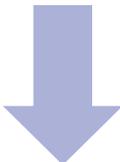
Dirigisme

- Trustworthiness
- Confidentiality



Globalization

Unipolarity



Dollar

The Fed as a single regulator



Fragmentation

Multipolarity



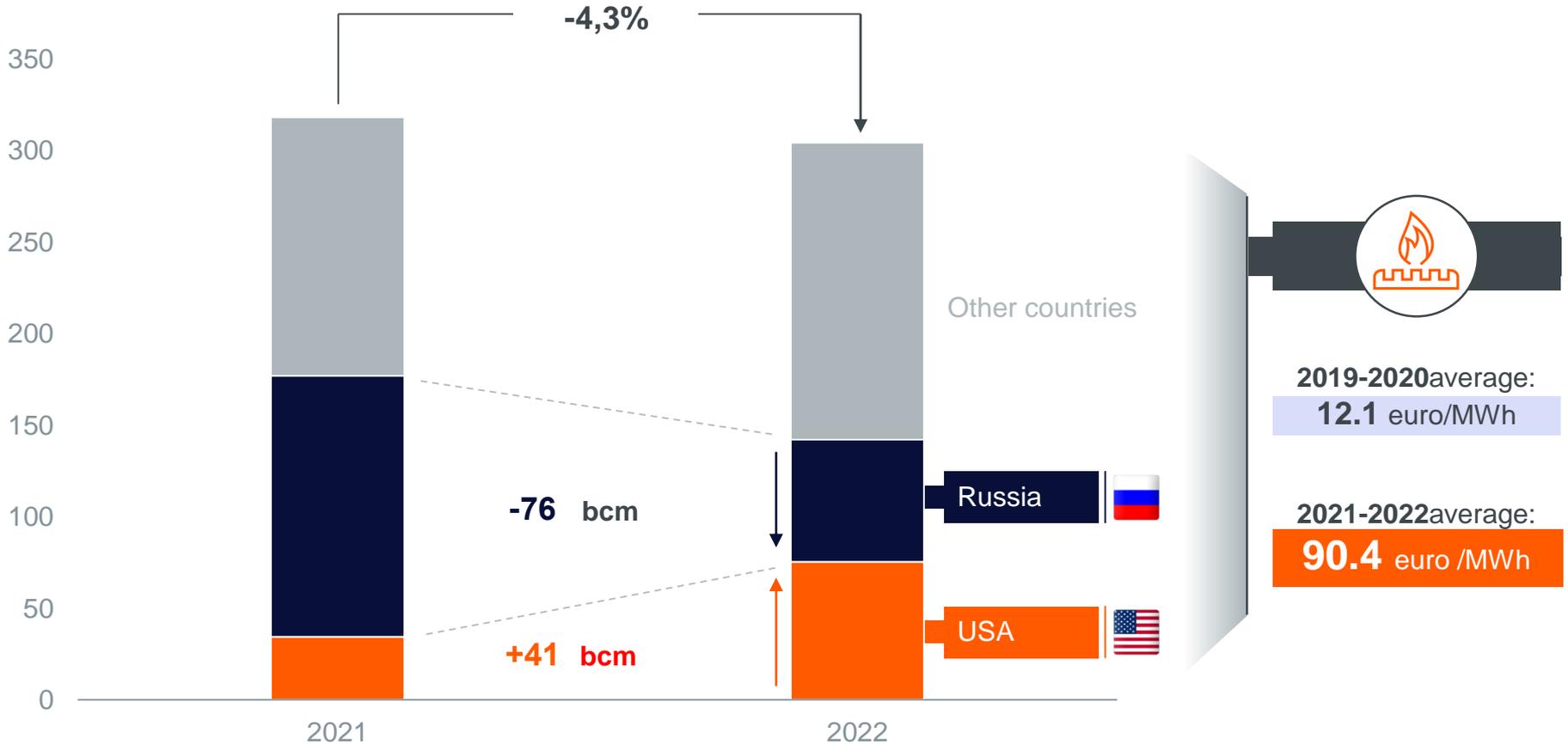
“Currency areas”

“Horizontal” payment and settlement systems

US Has Successfully Hooked Europe On Its Gas, and Facilitates Closure of EU's Energy-Intensive Industries

Natural Gas Imports to the EU

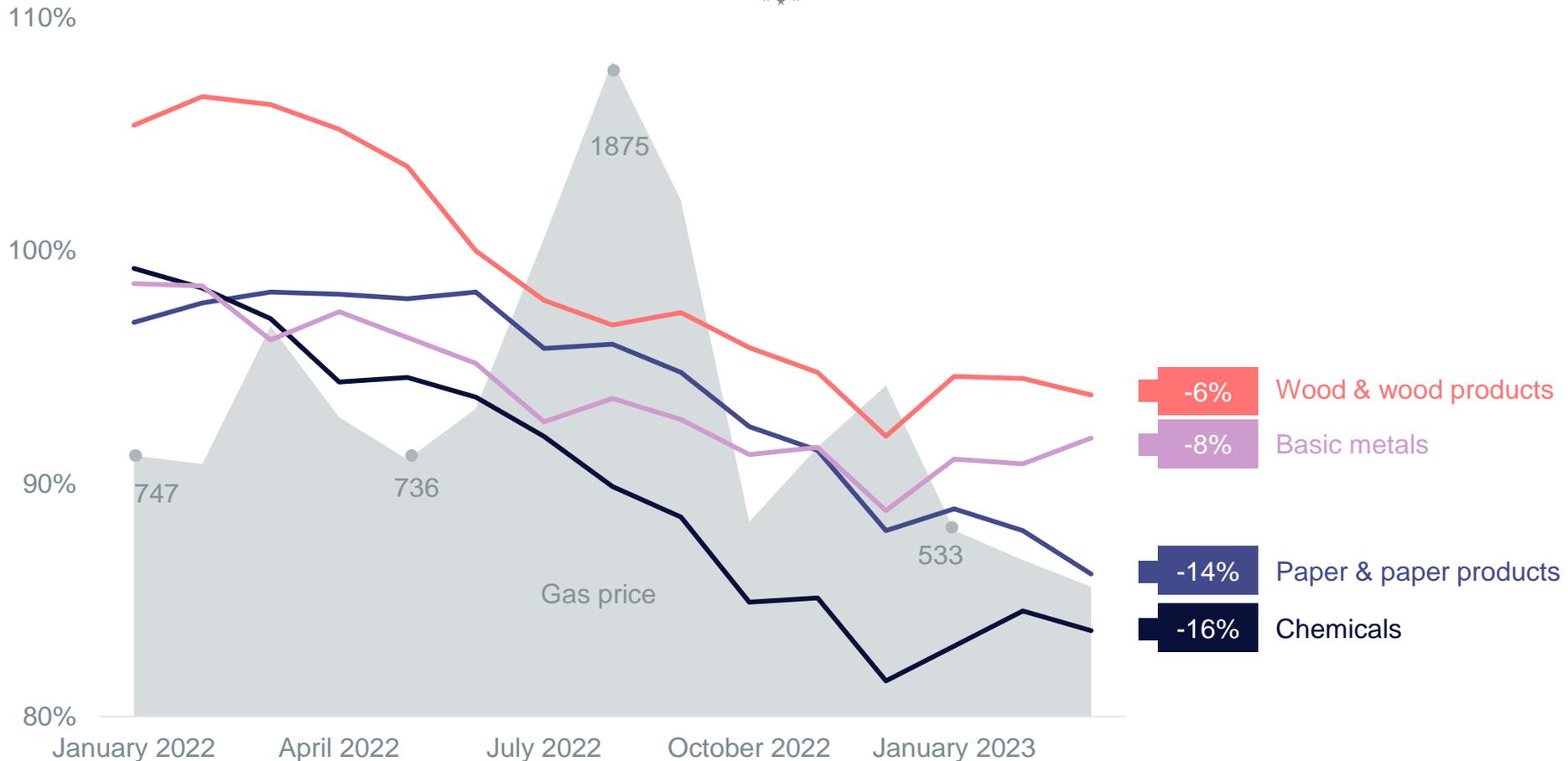
bcm



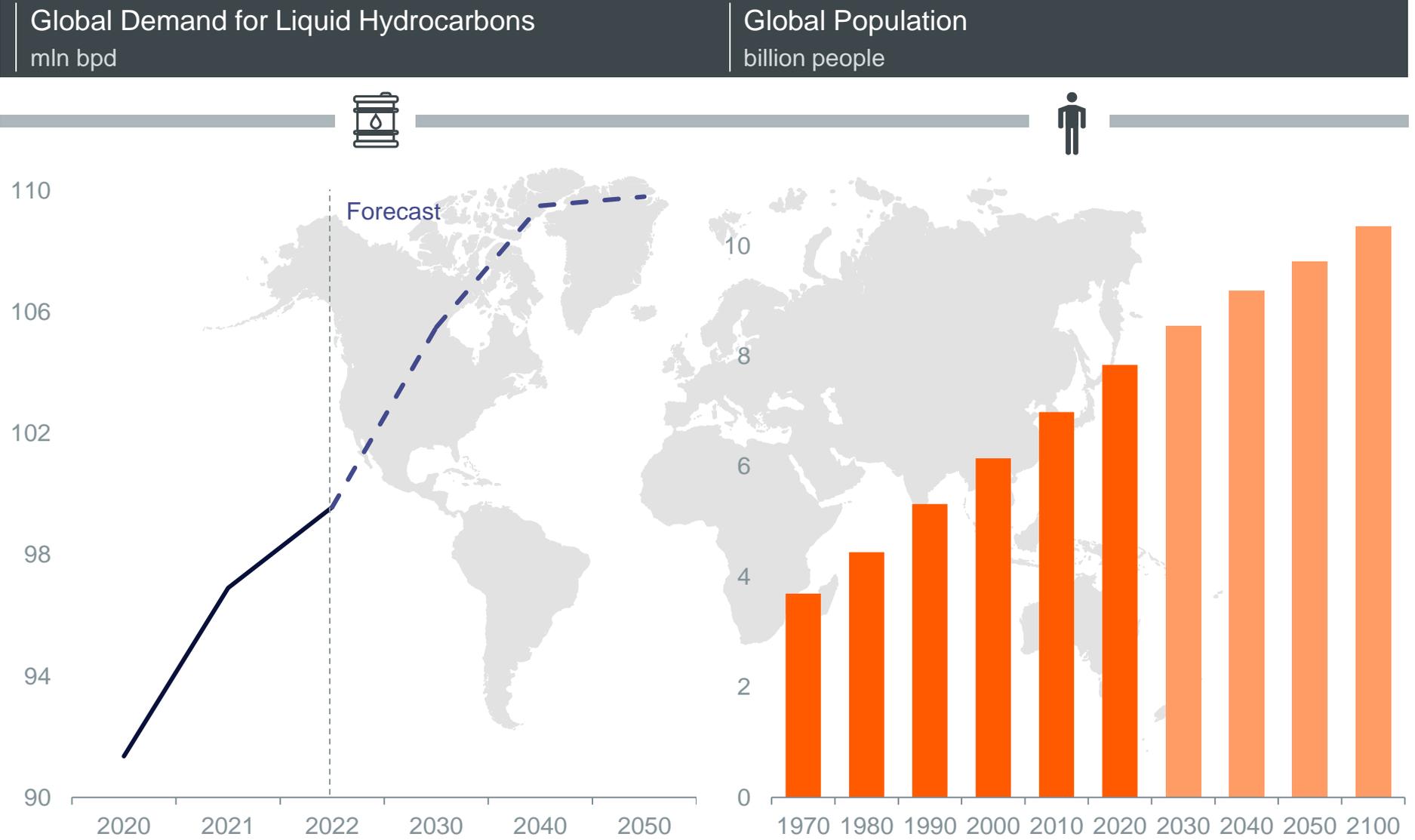
Drop In Gas Prices Is Not Helping to Restore Industrial Growth in Europe

EU Industrial Production and Gas Prices

December 2021 = 100%, gas prices in dollars per one thousand cub. m.



Global Oil Demand Continues to Grow



Sources: OPEC, IEA, UN

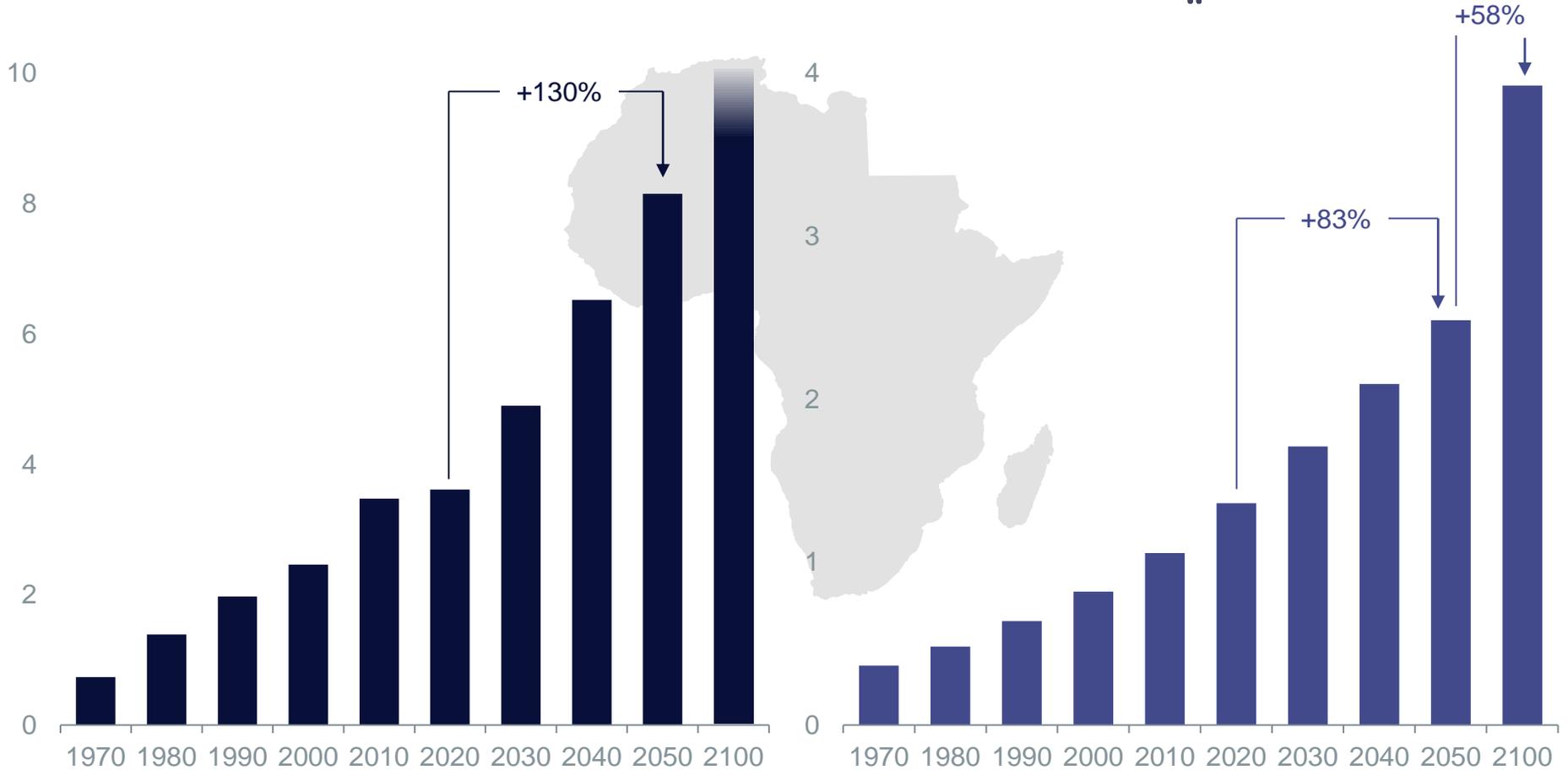
Potential of Demand Growth in Africa

Demand for Liquid Hydrocarbons in Africa

mln bpd

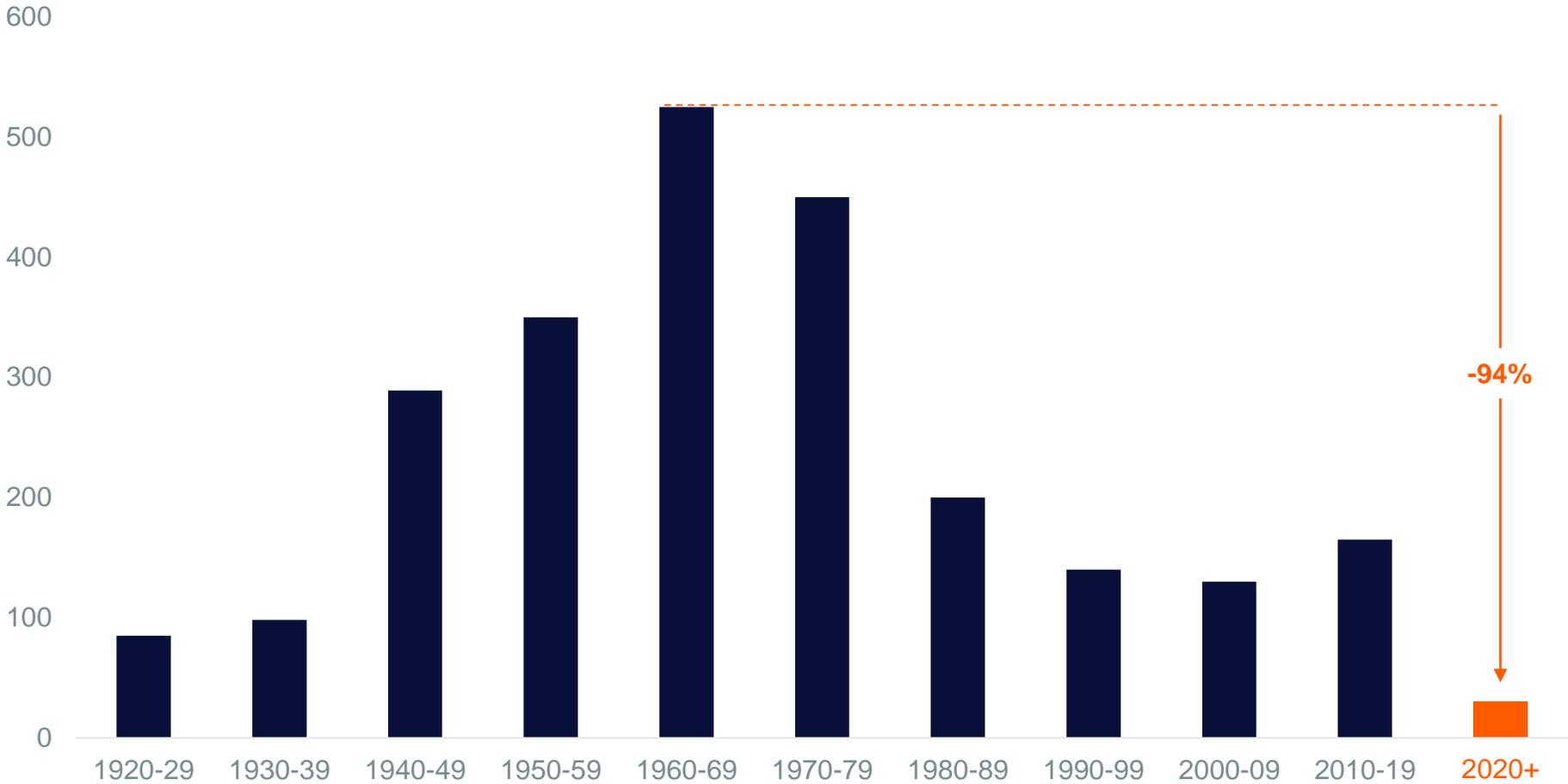
Population in Africa

billion people



Declining Reserve Replacement Rate

New Liquid Hydrocarbons Reserves Discovered
billion boe

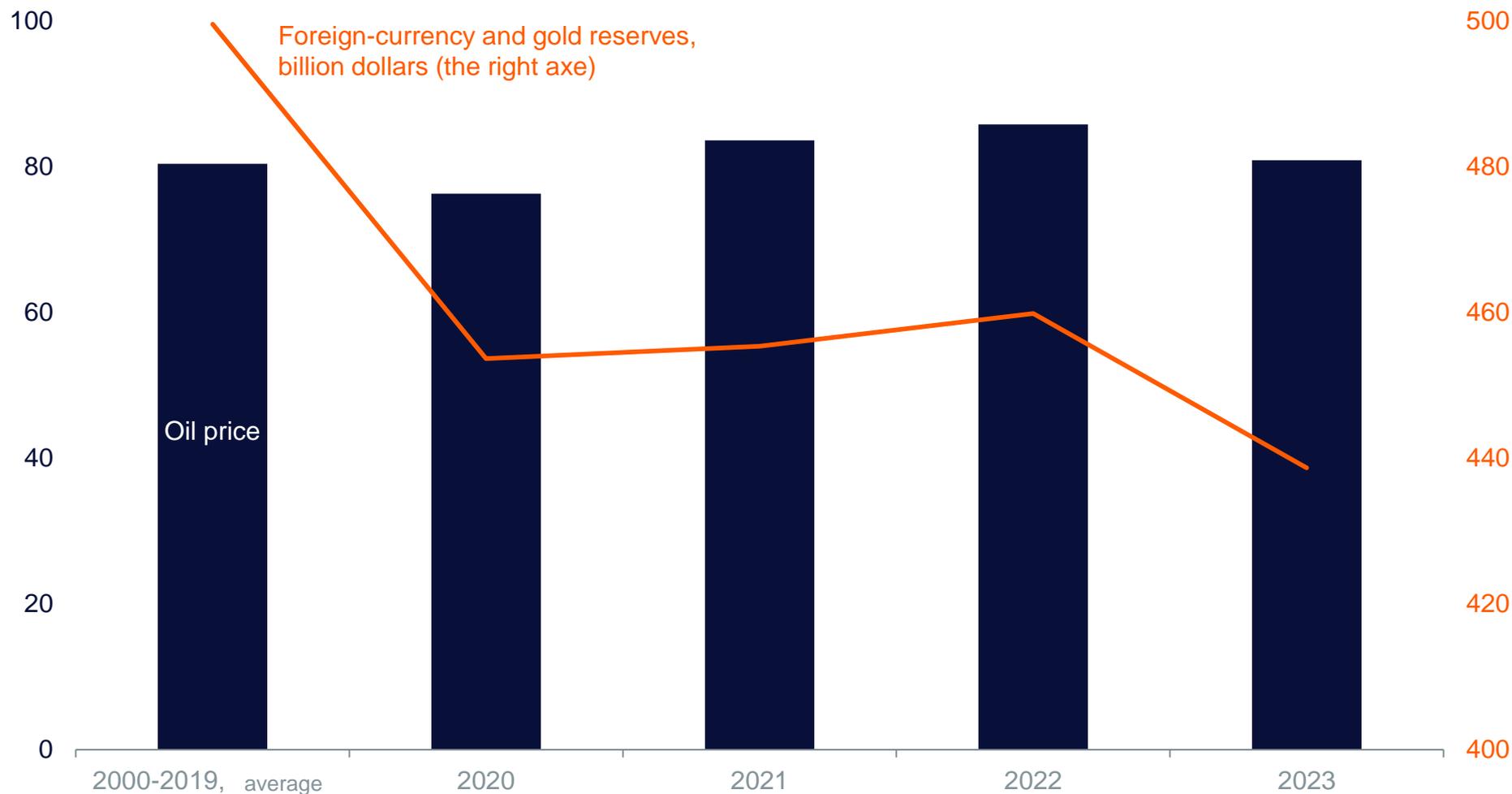


Sources: Wood Mackenzie, S&P Global

Oil Price Growth Potential

Oil Price Ensuring Deficit-free Budget of the Saudi Arabia

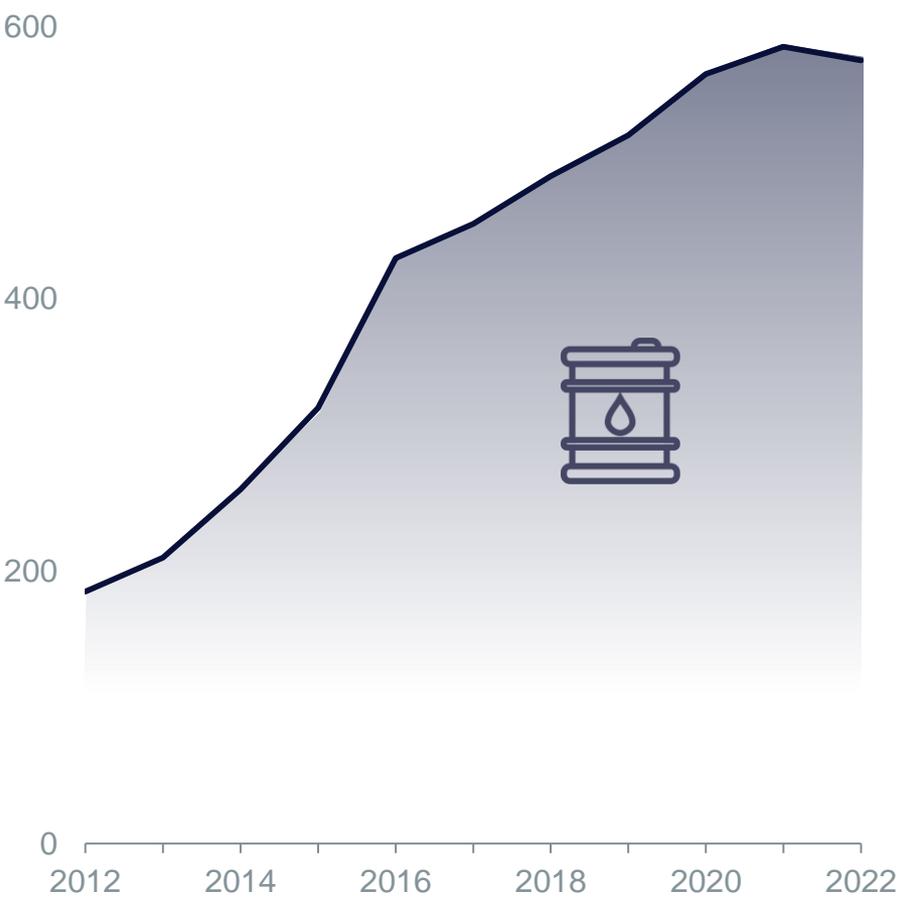
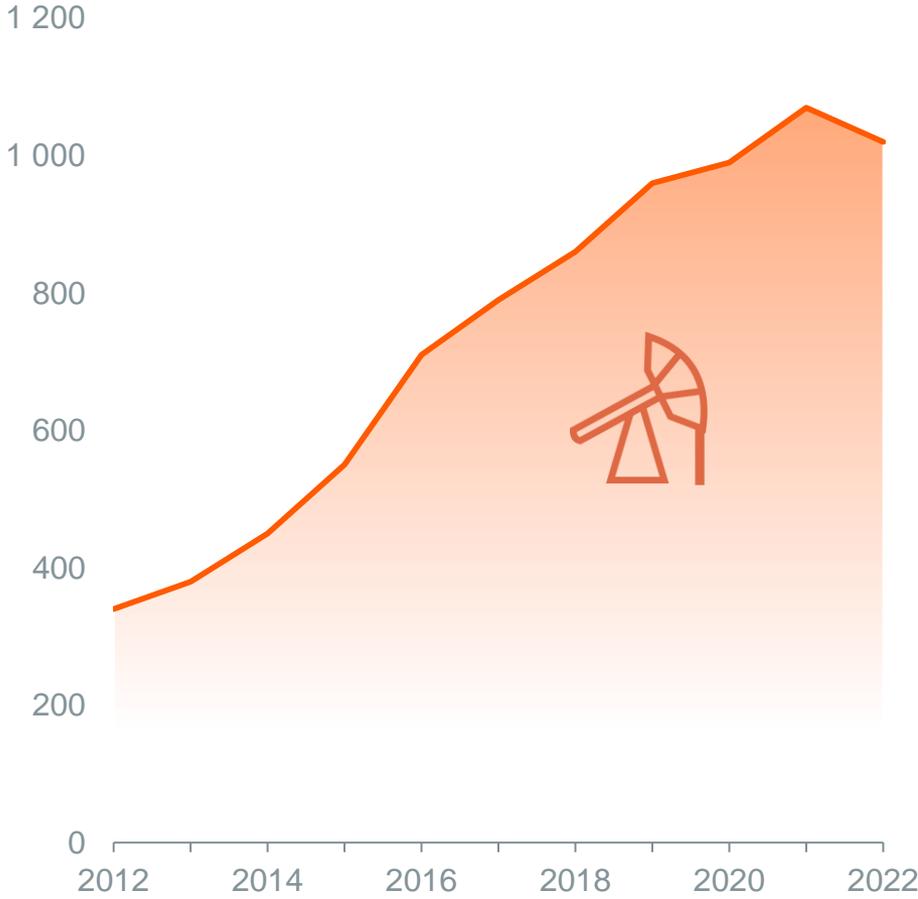
US dollar / bbl



US Production Is About to Plateau

Productivity trend of shale oil wells

Initial Flow Rate Thousand bpd (first 30 days of a well operation)	Recoverable Reserves per Well Thousand barrels
-----------------------------------------------------------------------	---------------------------------------------------

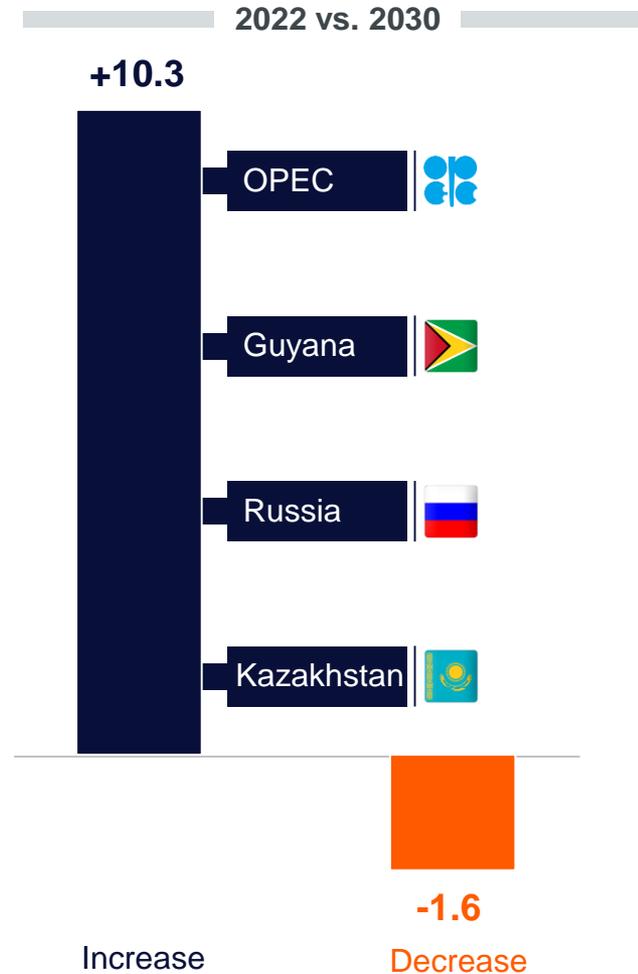
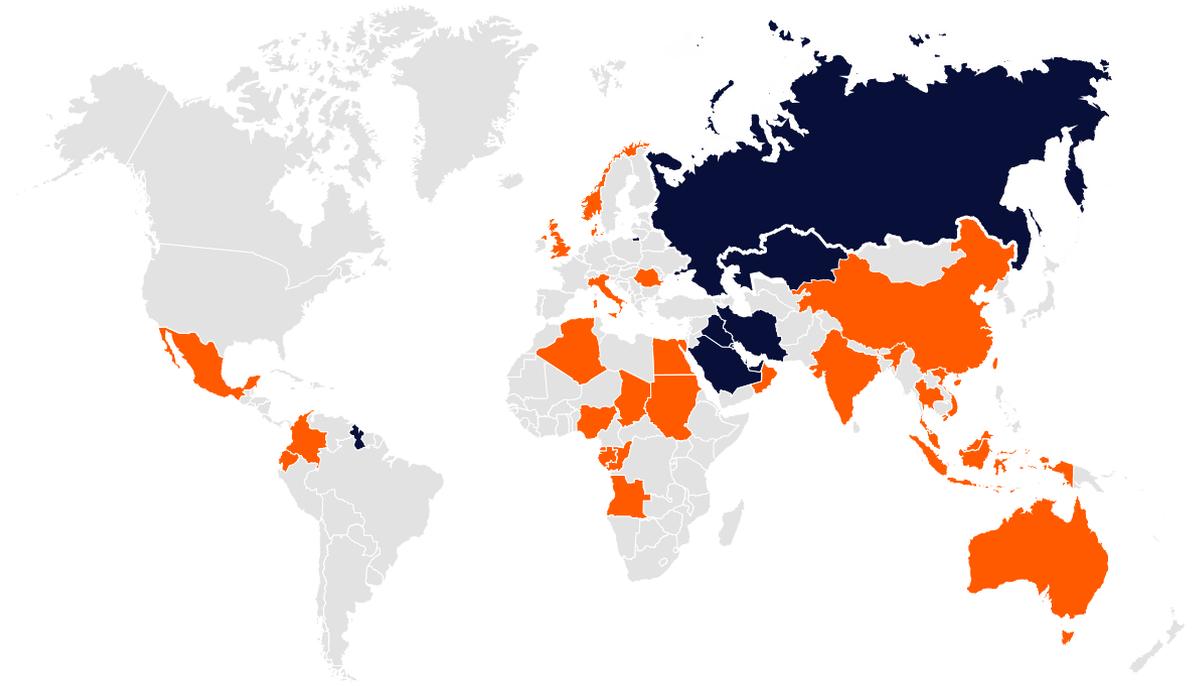


Source: Rystad Energy

Areas of Potential Growth

Incremental Oil Production 2022-2030

mIn bpd



Note: Countries having increase in production of more that 0.5 mIn bpd are depicted on the map
Sources: OPEC, IEA, Wood Mackenzie, S&P Global

Rosneft Is Ready for New Challenges

Share Price Dynamics

index, 01.01.2013 = 100



Based on local stock-exchange quotes
Sources: Bloomberg, MOEX

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