

BP Energy Outlook

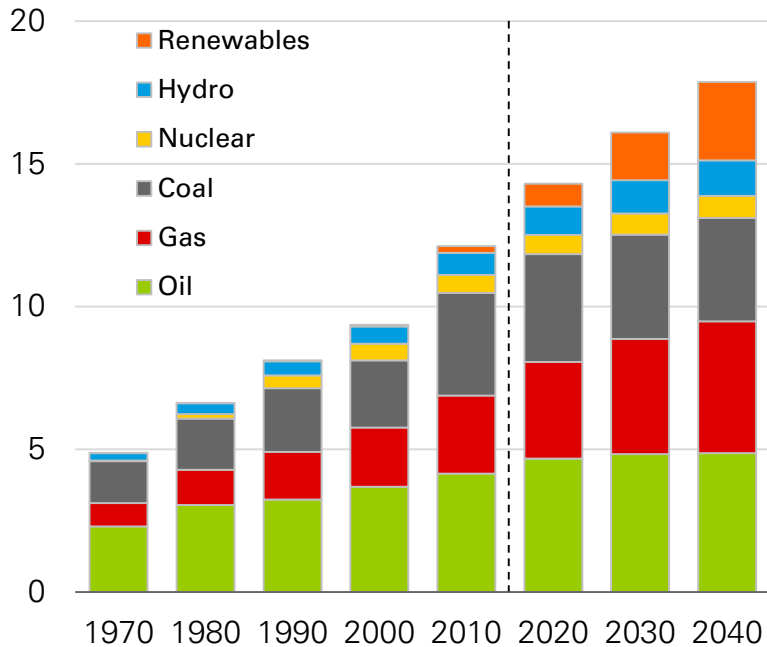
2019 edition

William Zimmern
Head of global macroeconomics

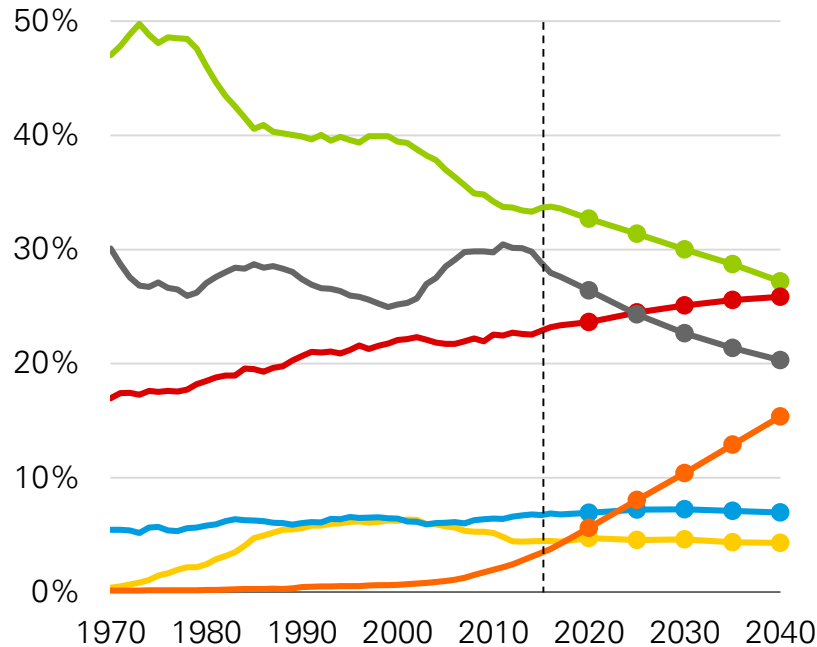
Global energy by fuel type

Primary energy consumption by fuel

Billion toe



Shares of primary energy

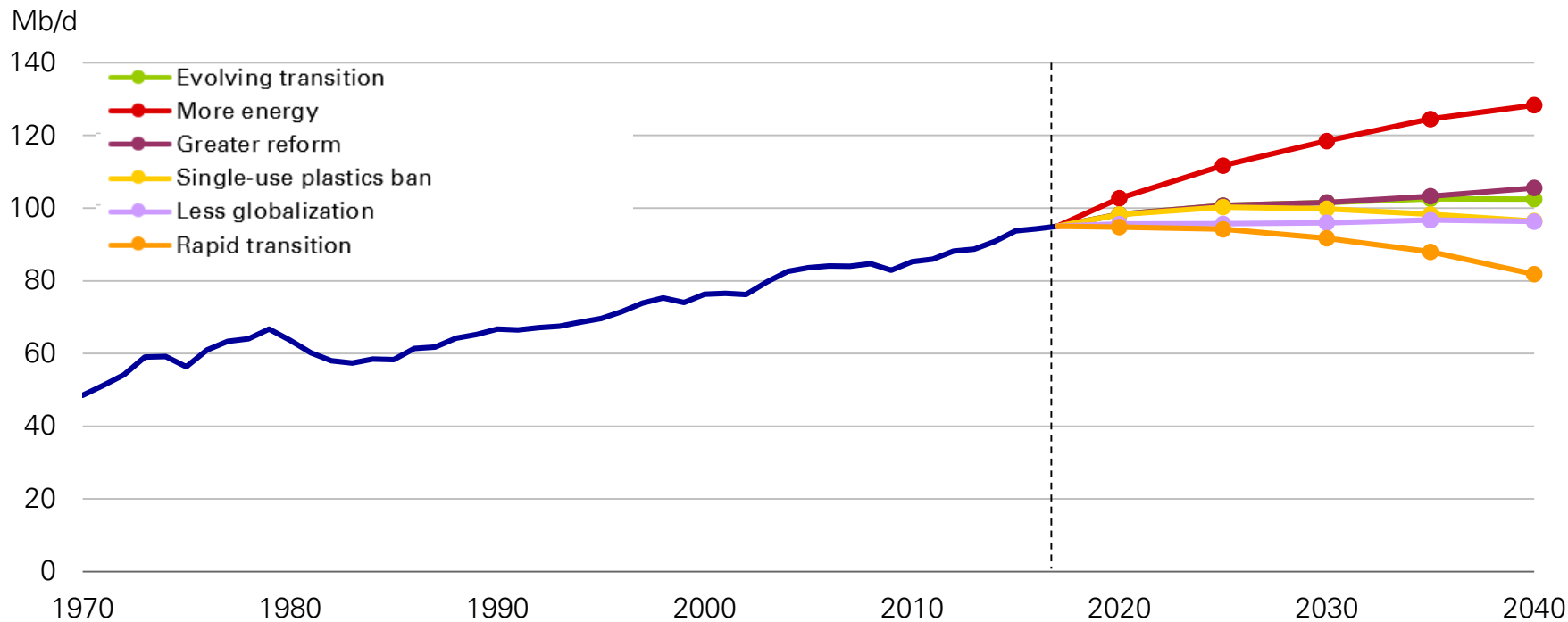




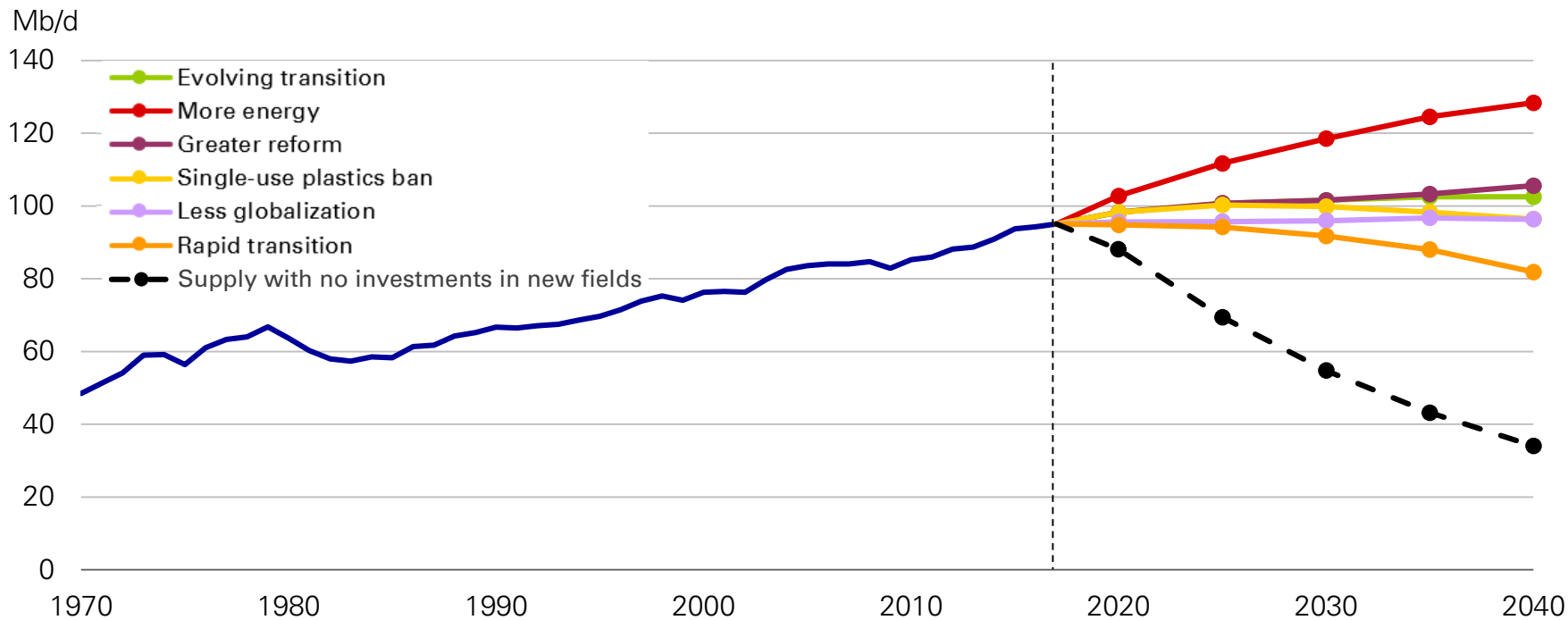
Three key questions and uncertainties

- ▶ What do and don't we know about future oil demand?
- ▶ How quickly could renewables grow?
- ▶ A low-carbon energy system: what more needs to be done?

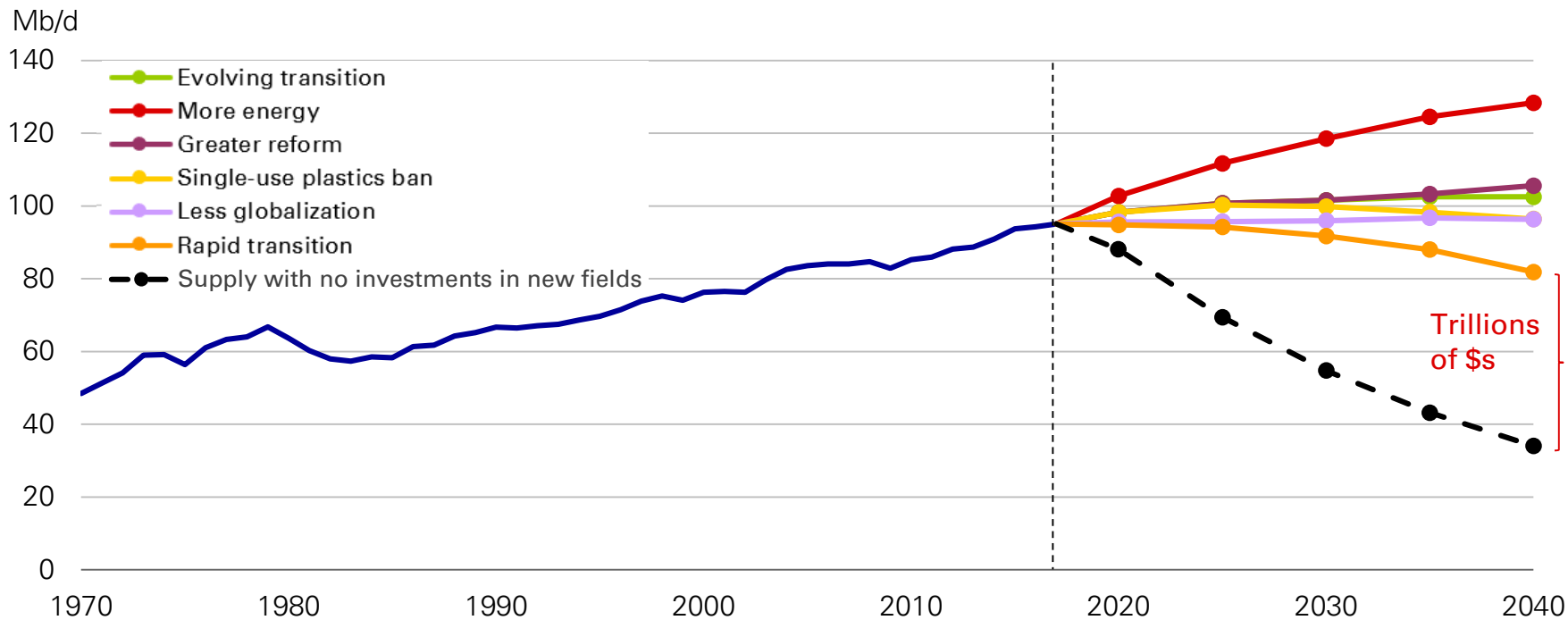
Demand and supply of oil



Demand and supply of oil



Demand and supply of oil





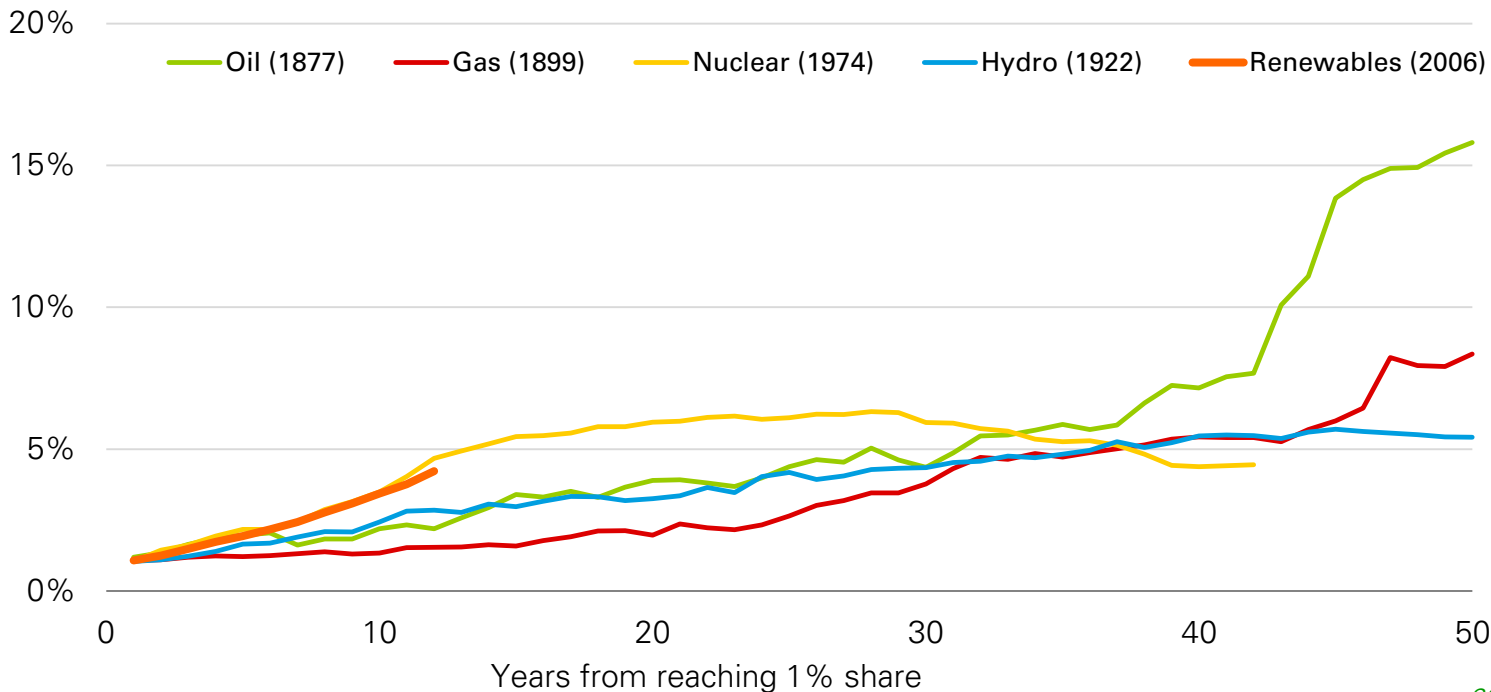
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Speed of energy transition

Speed of penetration of new fuels in global energy system

Share of world energy

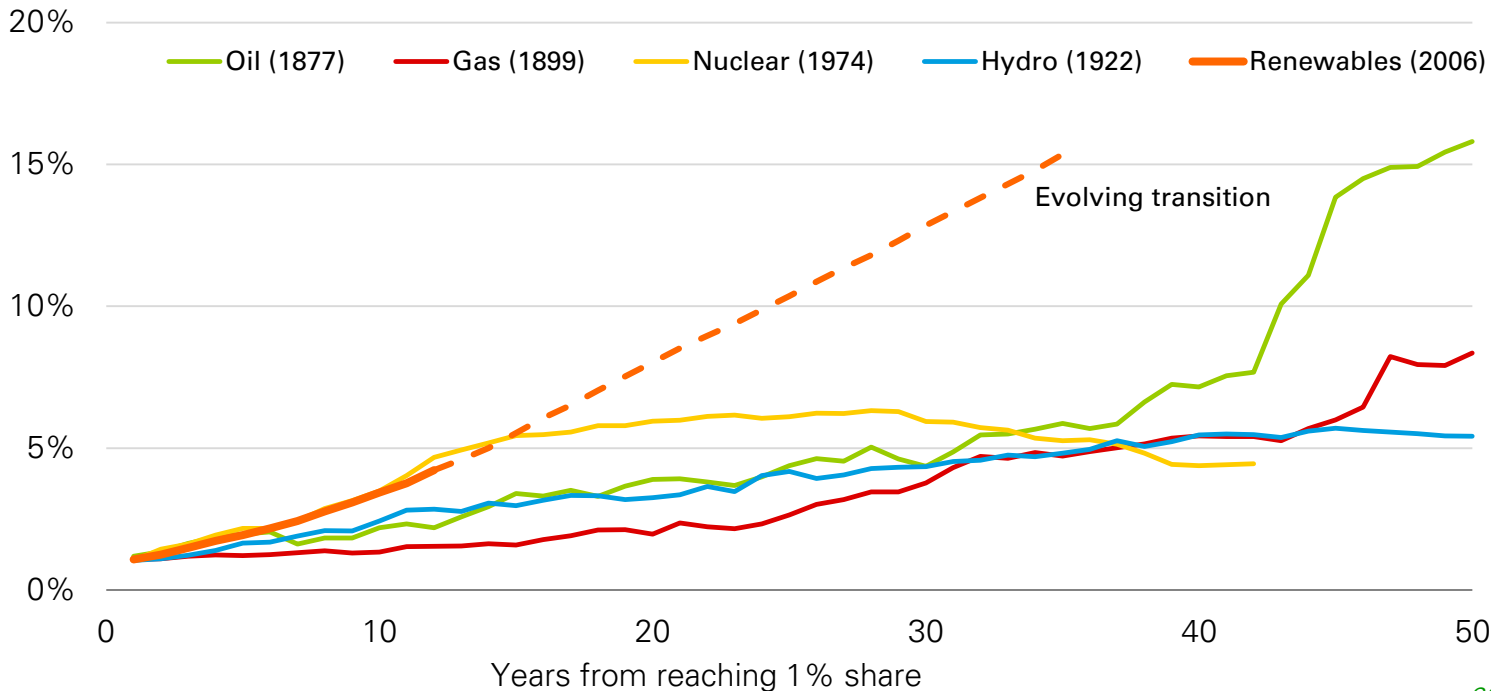




Speed of energy transition

Speed of penetration of new fuels in global energy system

Share of world energy

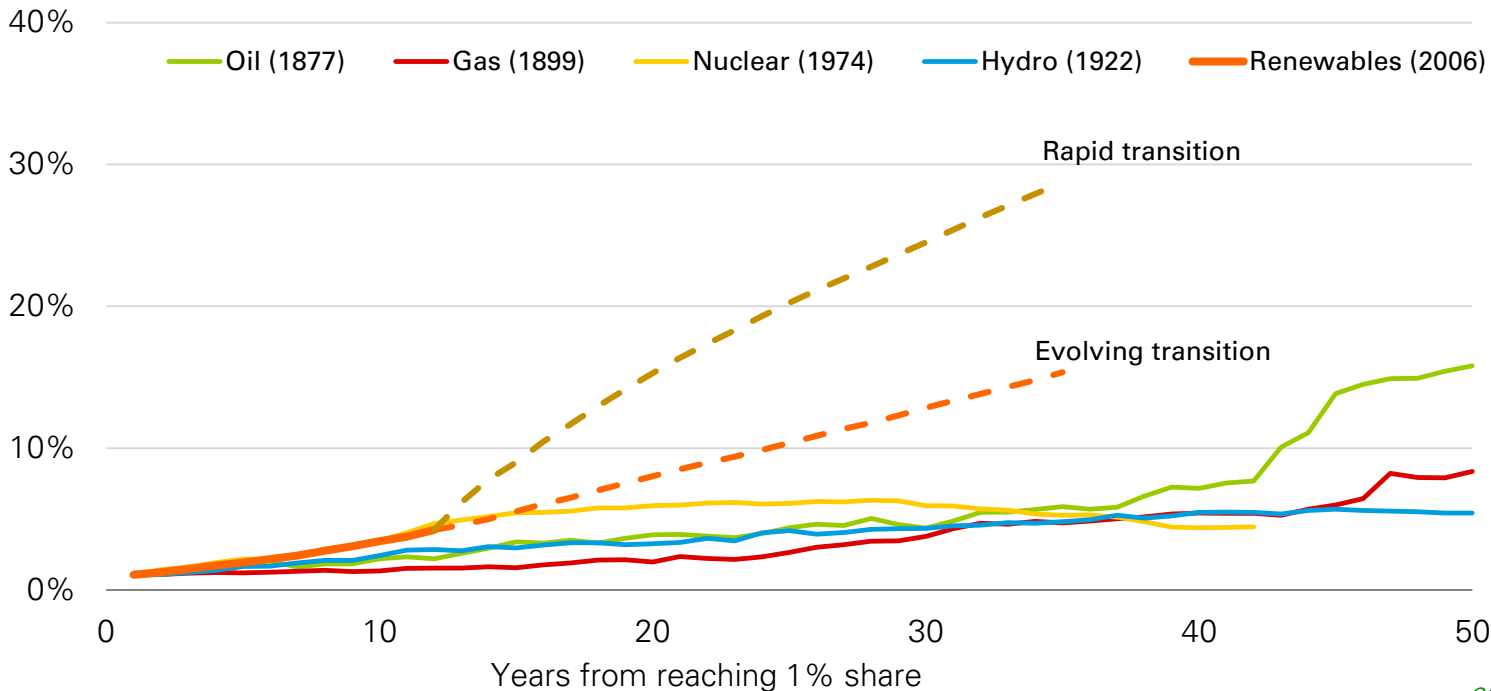




Speed of energy transition

Speed of penetration of new fuels in global energy system

Share of world energy





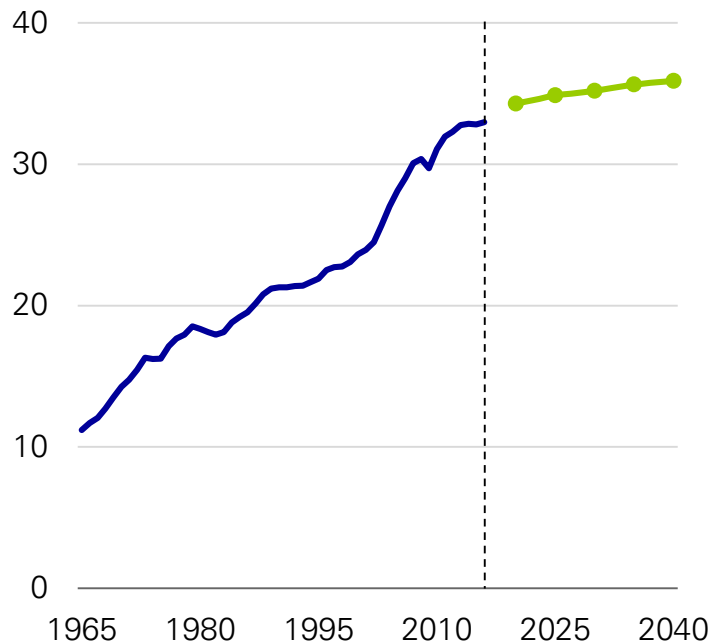
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Emission from energy sources

Emissions

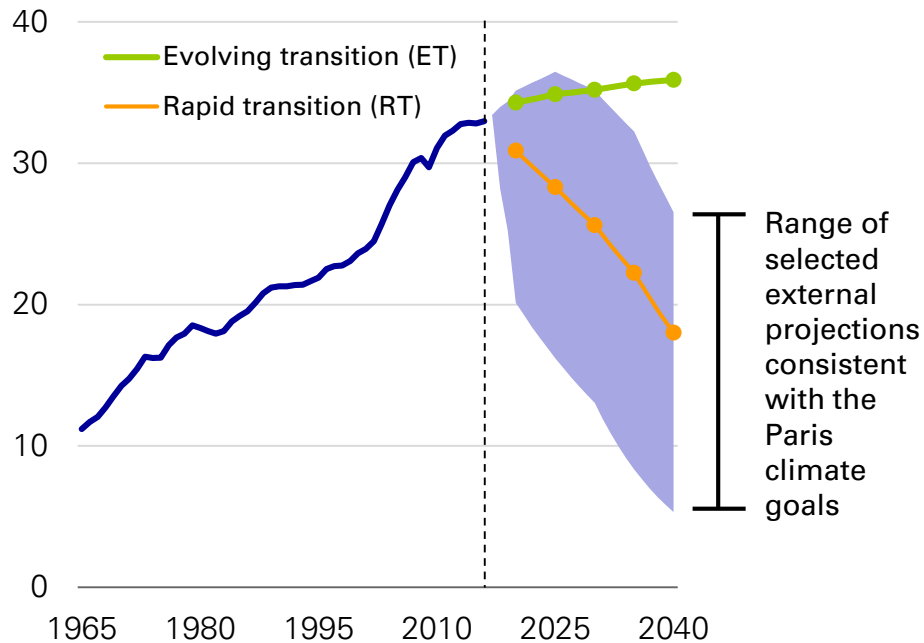
Gt of CO₂



Emission from energy sources

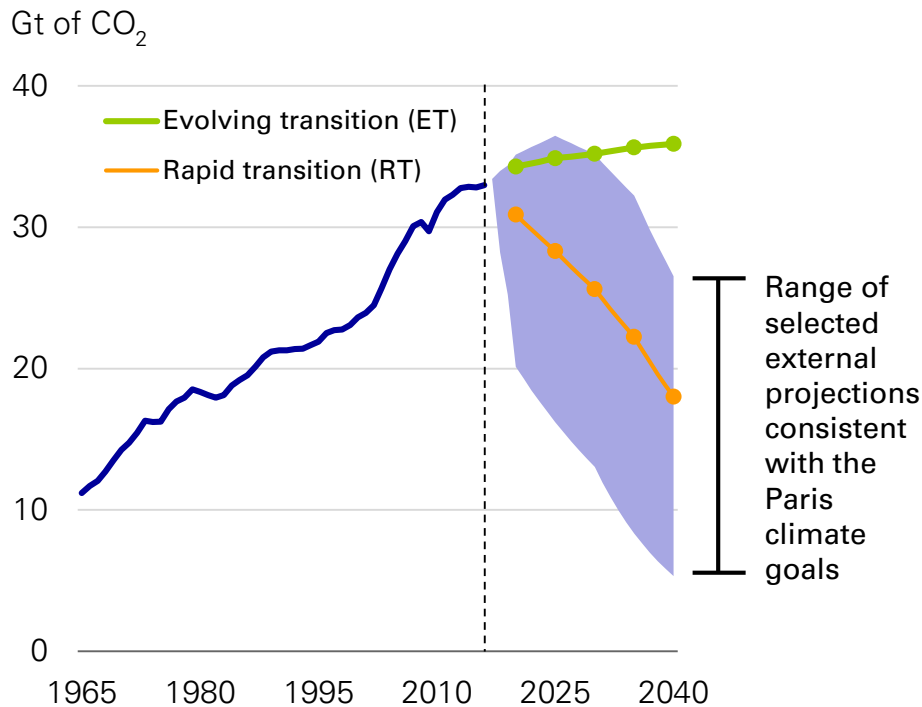
Emissions

Gt of CO₂

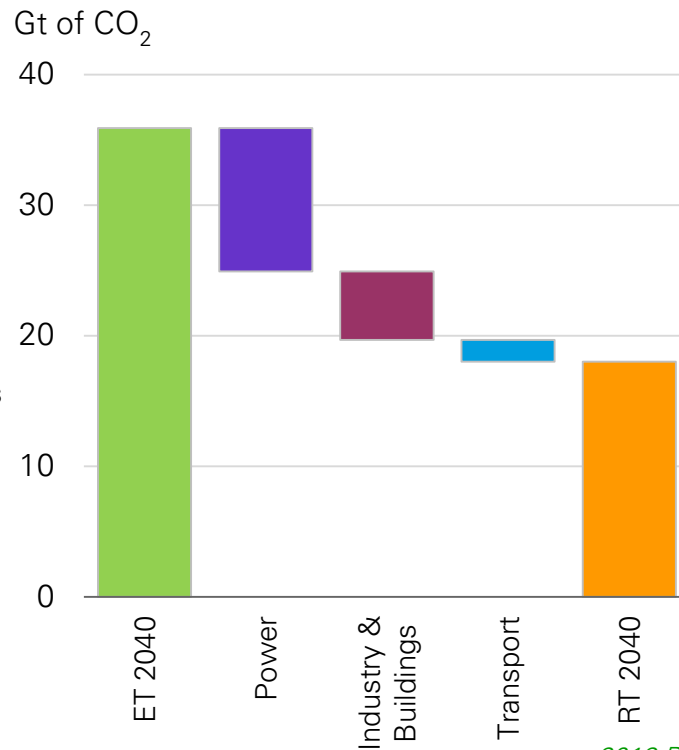


Emission from energy sources

Emissions

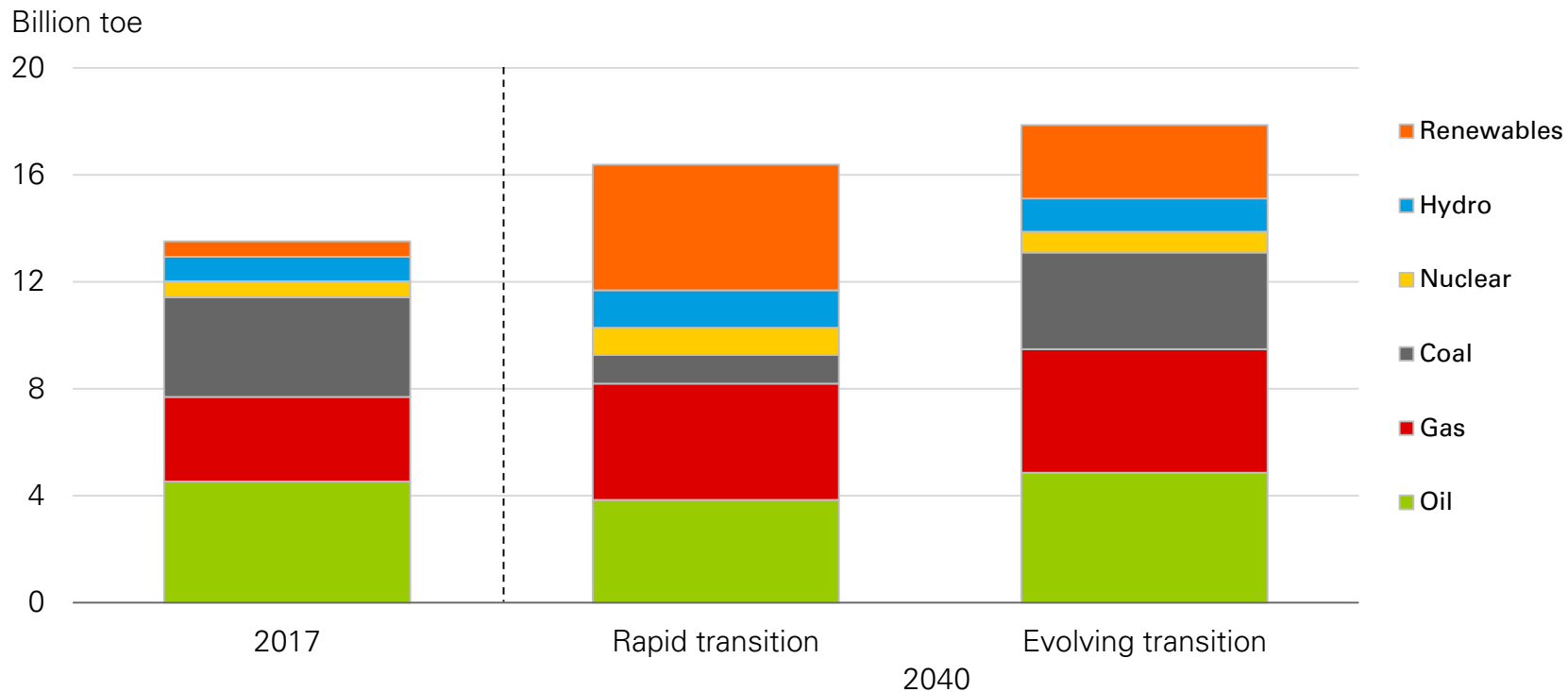


Emissions in 2040: ET vs. RT scenario



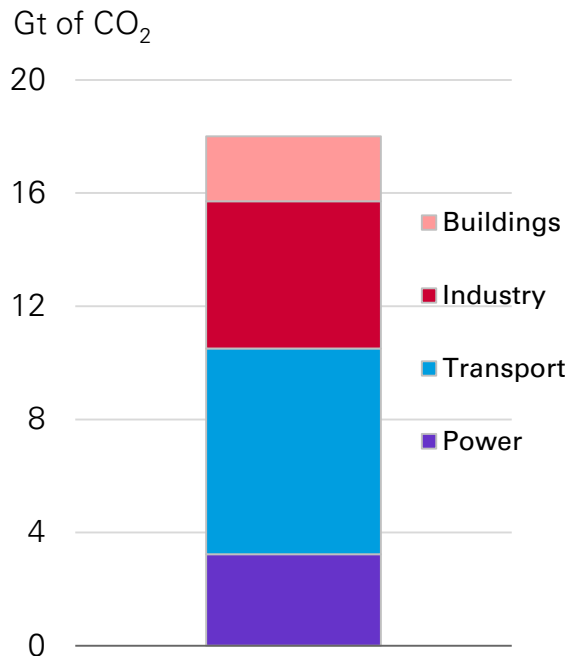
Global energy demand and fuel mix

Primary energy consumption by fuel



Hard-to-abate carbon emissions

Carbon emissions in RT scenario in 2040



Decarbonise power sector

- Renewables
- Gas (and coal) plus CCUS
- Energy storage and demand-side-response

Other low-carbon energy sources and carriers

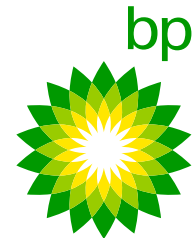
- Hydrogen
- Bioenergy

Efficiency

- Circular economy
- Process efficiency

Storage and removal of carbon

- CCUS
- Negative emission technologies, eg land carbon, bioenergy with CCS (BECCS)



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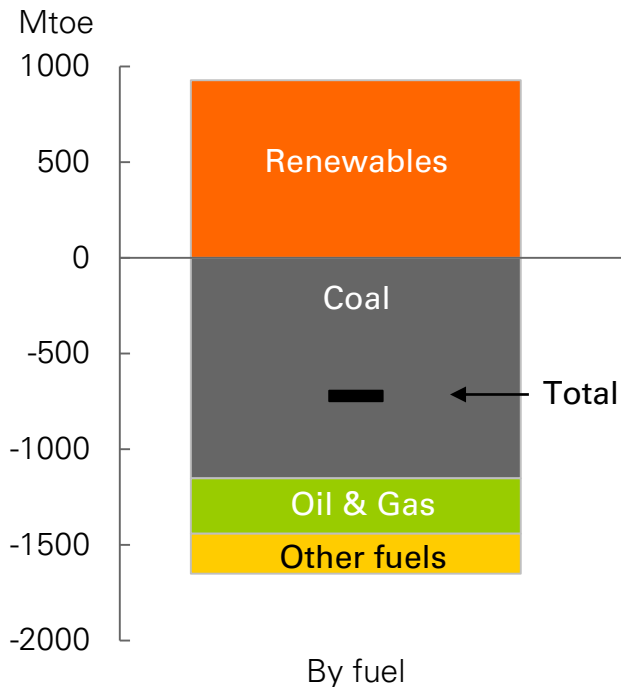
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Change in ET scenario over past five years

Revisions in 2035 energy demand versus 2014 Outlook:

World



China

