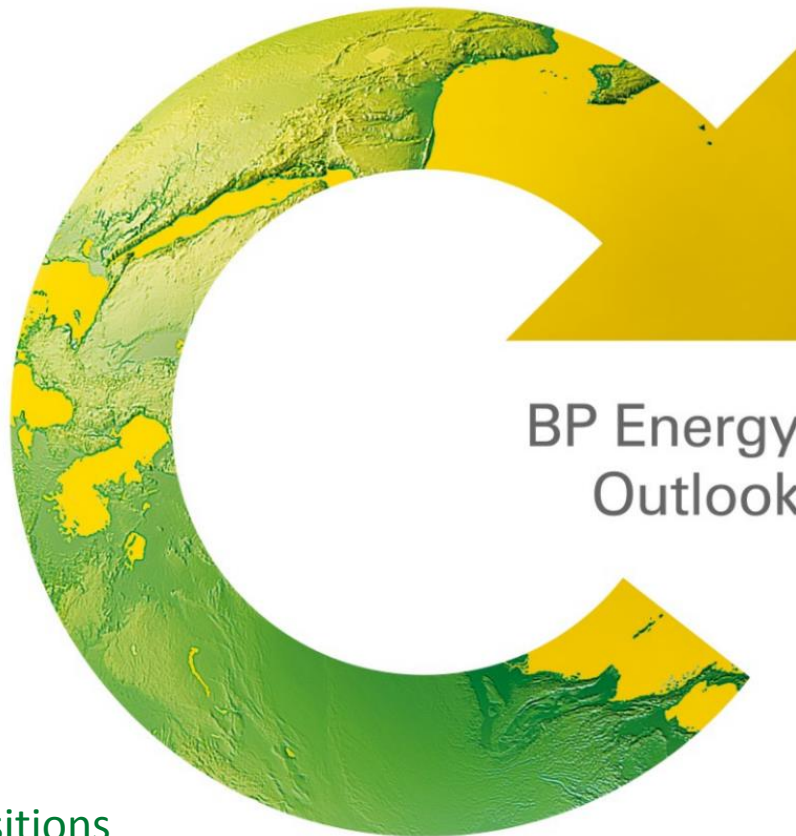


BP Energy Outlook

2018 edition



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William Zimmern
Lead Economist Energy Transitions

Agenda

- Today's energy landscape
- Future energy trends
- Key questions
- Q&A



Today's energy landscape



Question 1

The transport sector made up what proportion of global primary energy demand in 2016?

- A. 20%
- B. 50%
- C. 75%

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C. 75%



Question 2

Passenger cars made up what proportion of liquids (oil) demand in 2016?

- A. 20%
- B. 50%
- C. 80%



Question 2

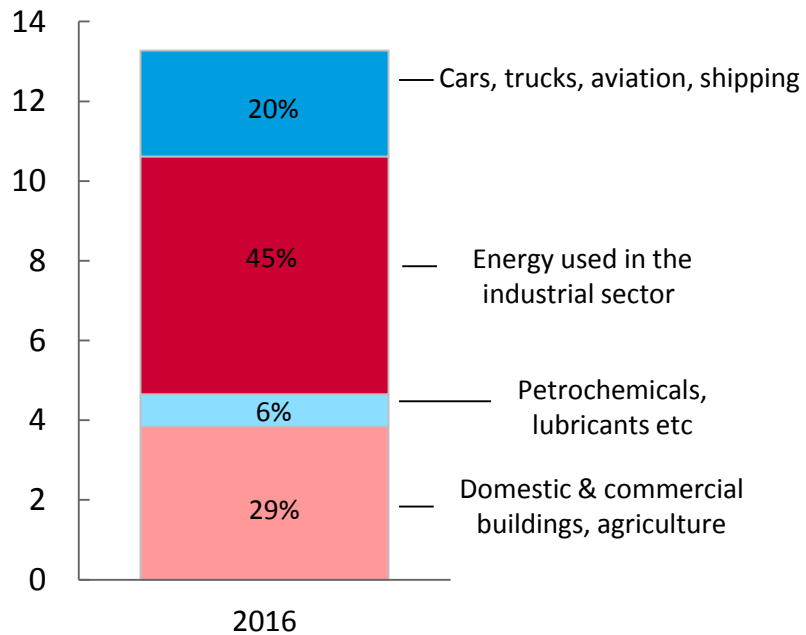
Passenger cars made up what proportion of liquids (oil) demand in 2016?

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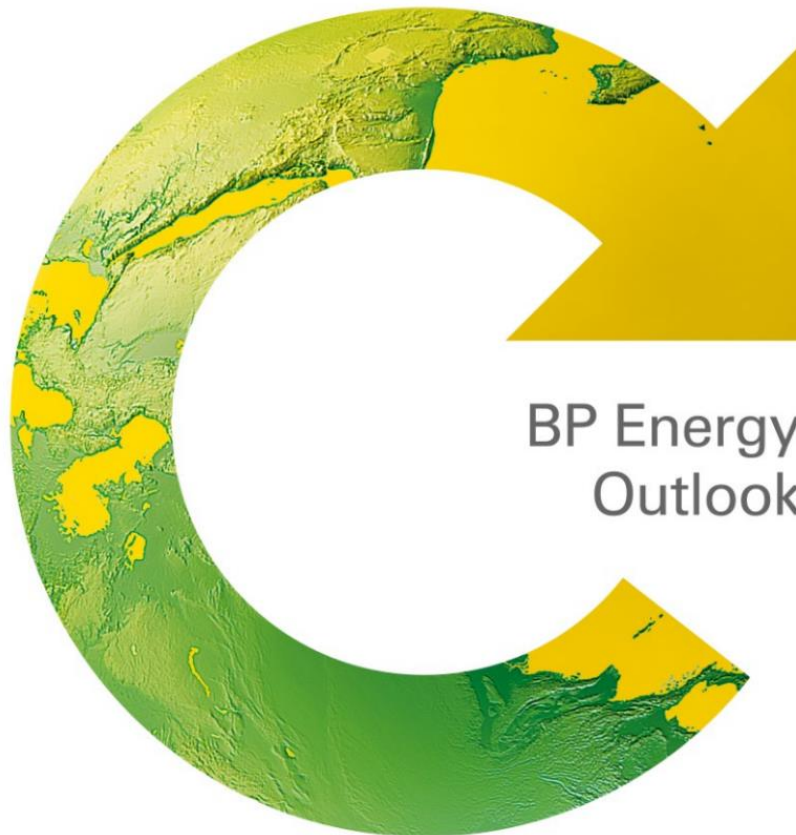
Primary energy demand by end-use sector





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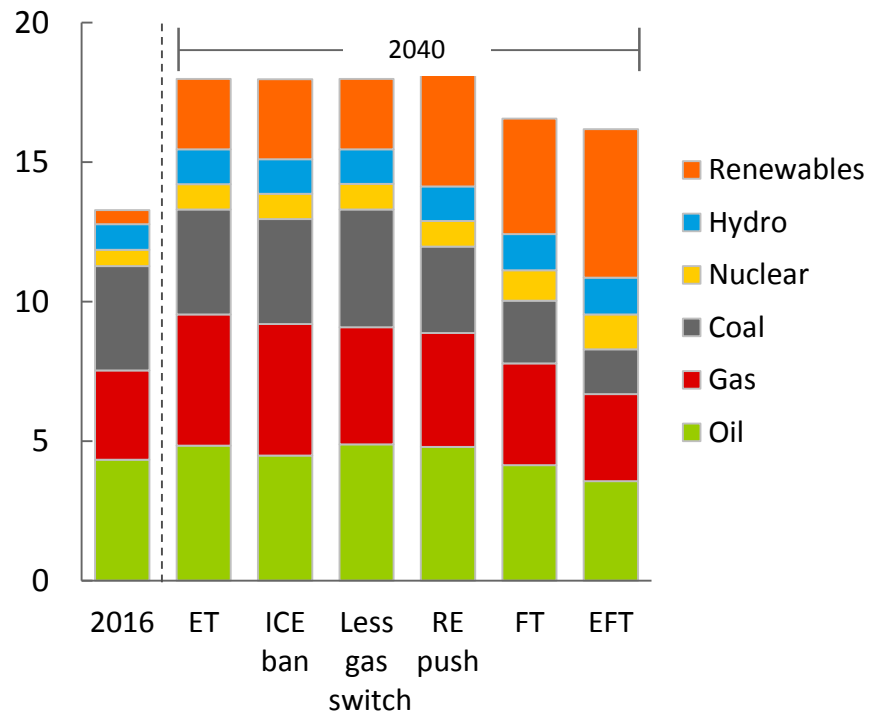
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Alternative scenarios



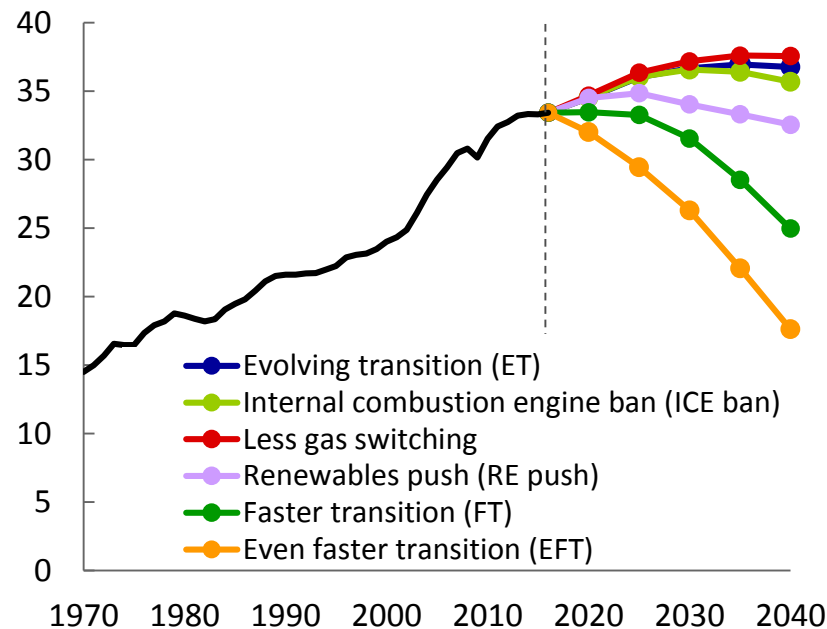
Primary energy consumption by fuel

Billion toe



Carbon emissions

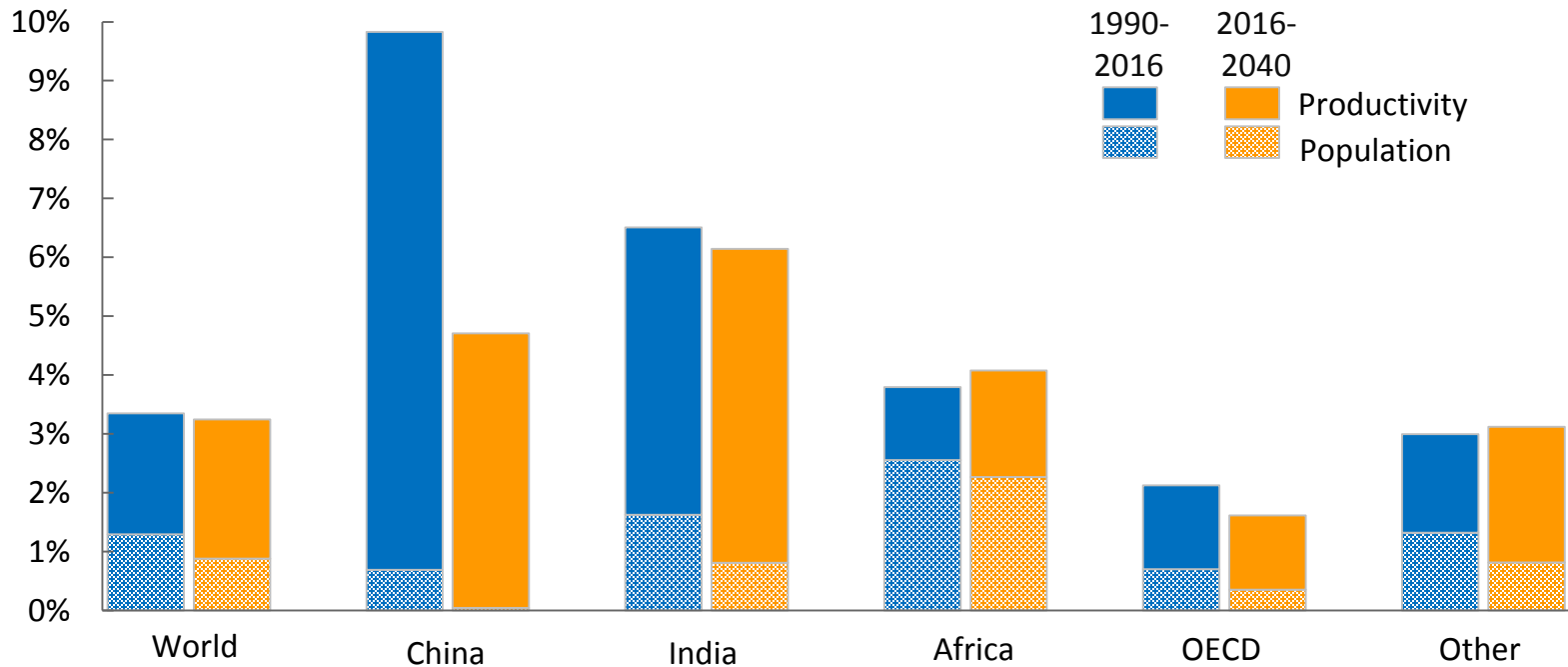
Billion tonnes CO₂



Economic backdrop

GDP growth by region and factor

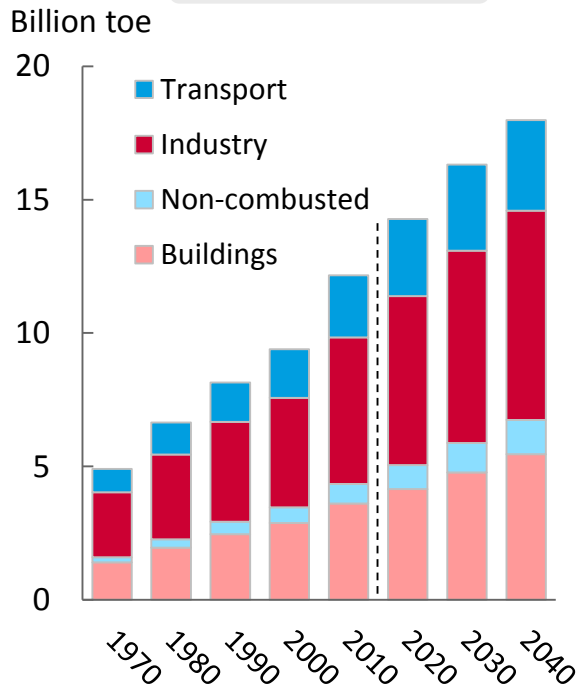
% per annum



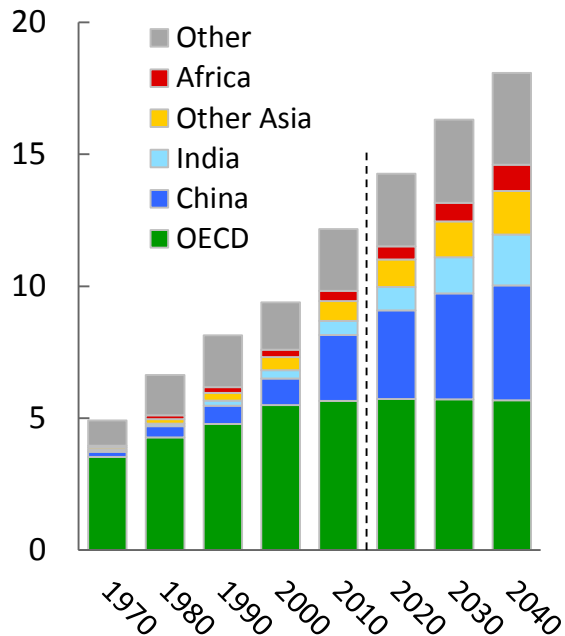
Three windows on the energy transition

Primary energy demand

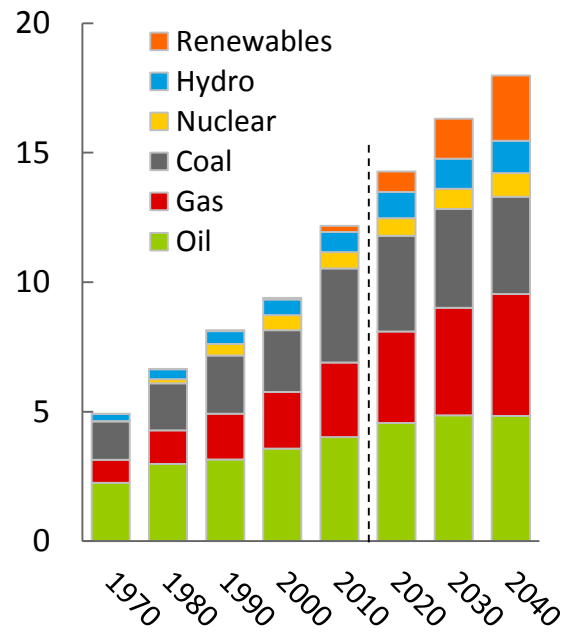
End-use sector



Region

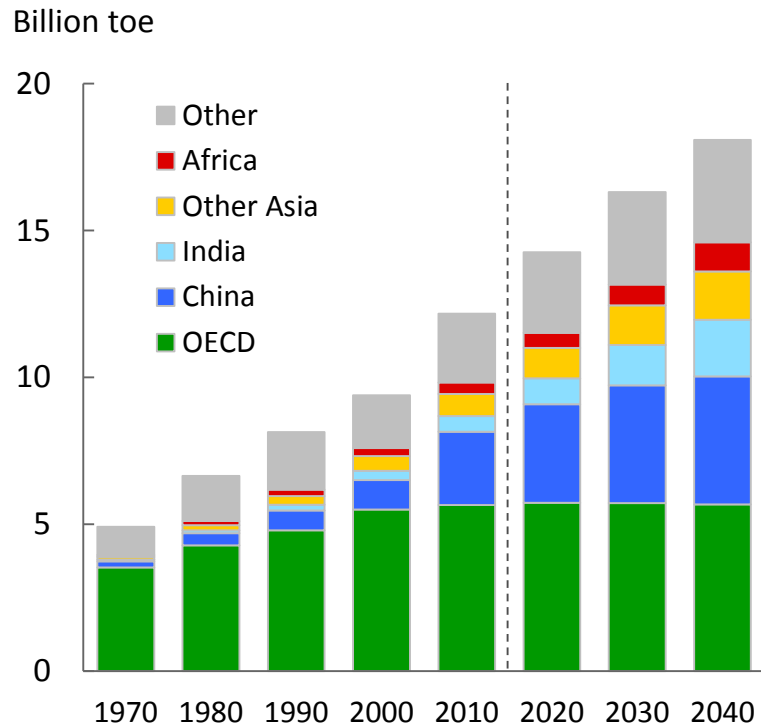


Fuel

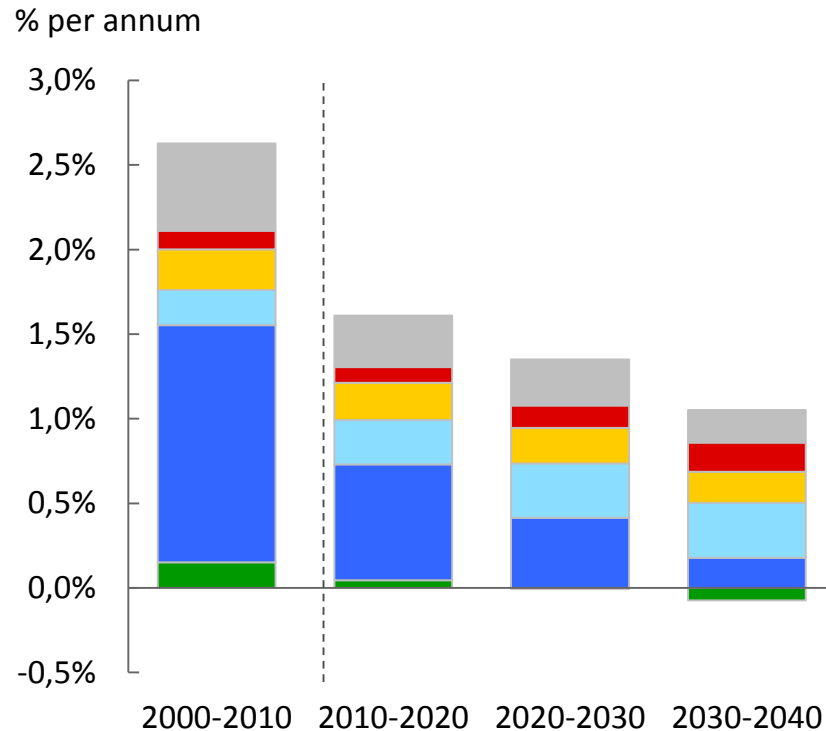


Region

Primary energy consumption by region



Primary energy growth and regional contributions

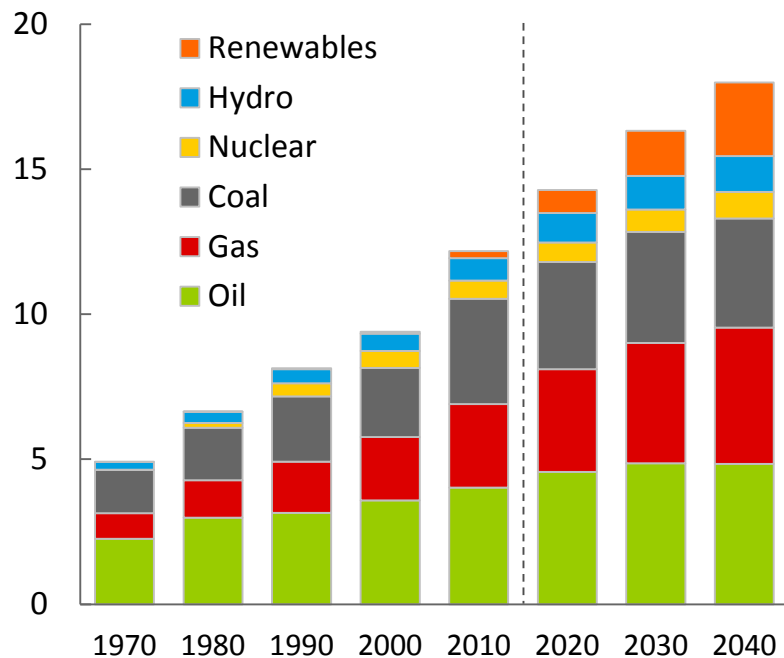


Fuel

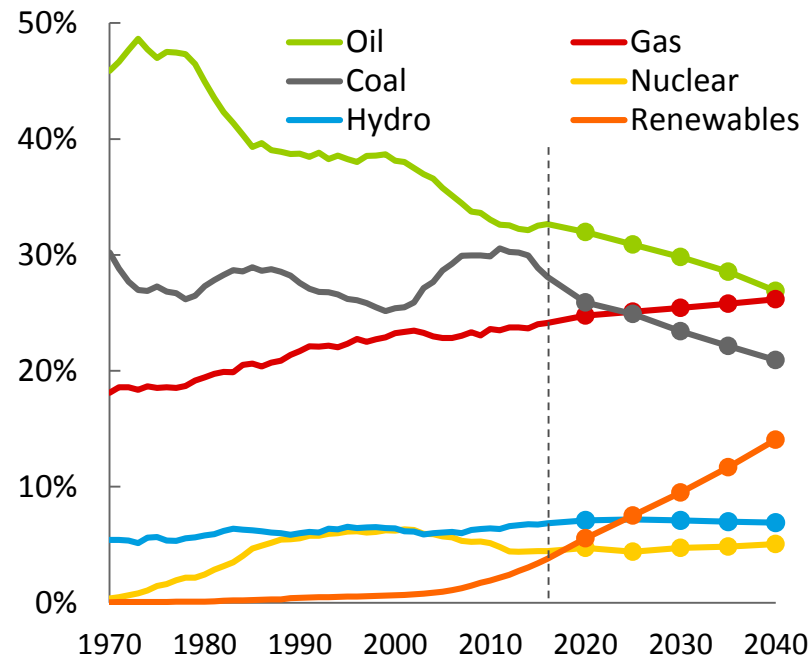


Primary energy consumption by fuel

Billion toe

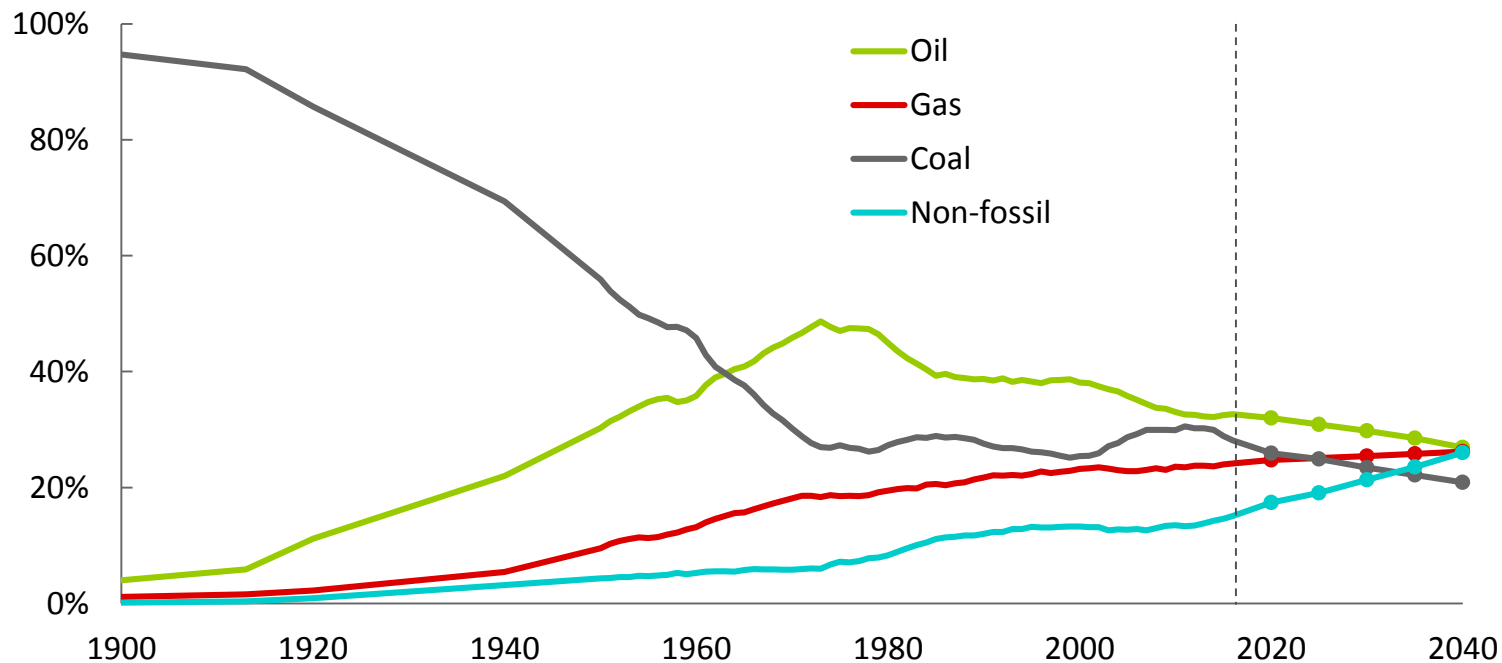


Shares of primary energy



Diversified fuel mix

Shares of primary energy



Key questions

- **What have we learnt about electric cars and the mobility revolution?**
- **When is global oil demand likely to stop growing?**
- **What does this mean for carbon emissions?**

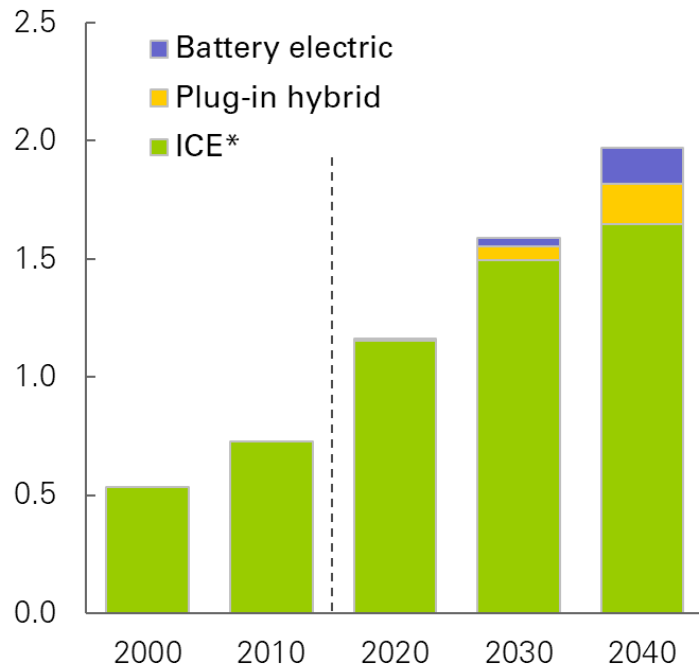
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Electric vehicles

Passenger car parc by type

Billions of vehicles

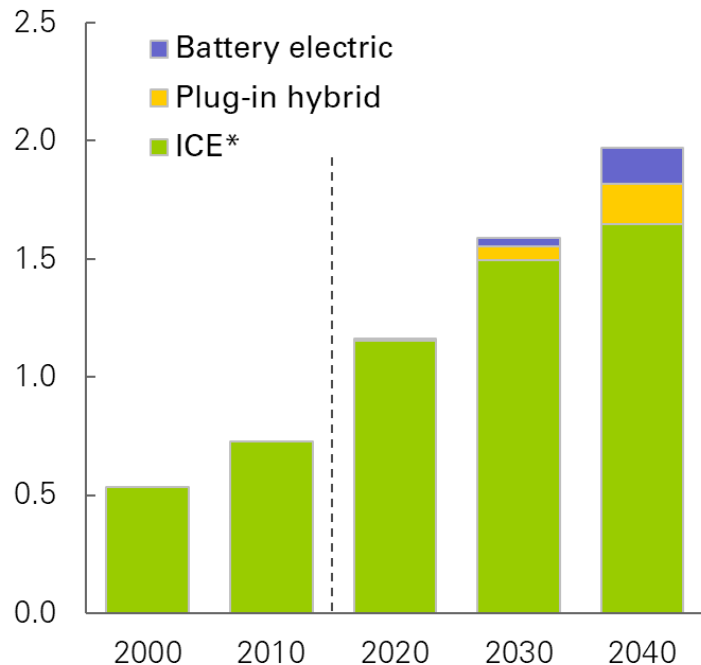


*Internal combustion engine

Electric vehicles

Passenger car parc by type

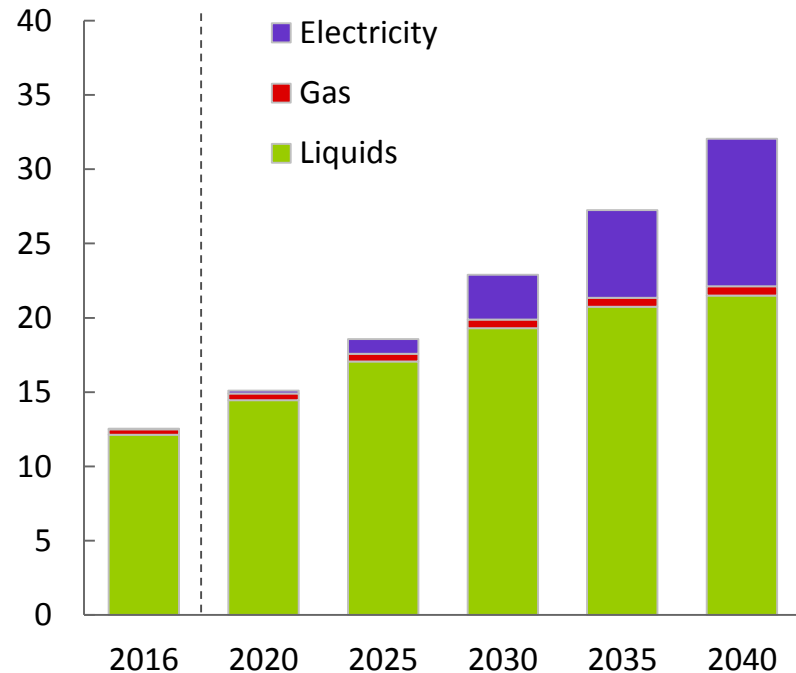
Billions of vehicles



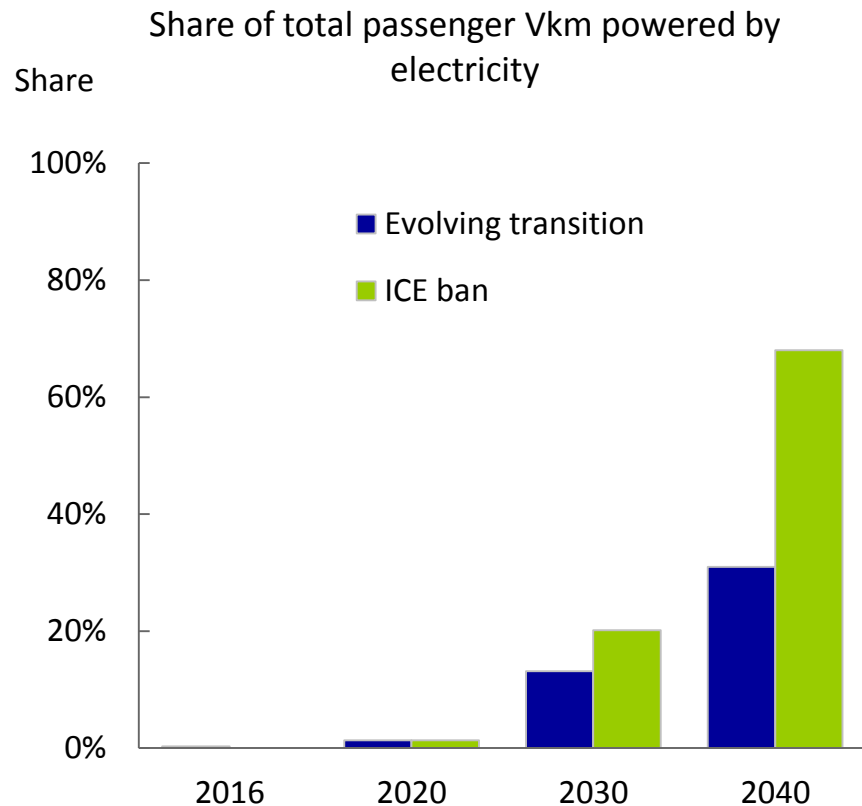
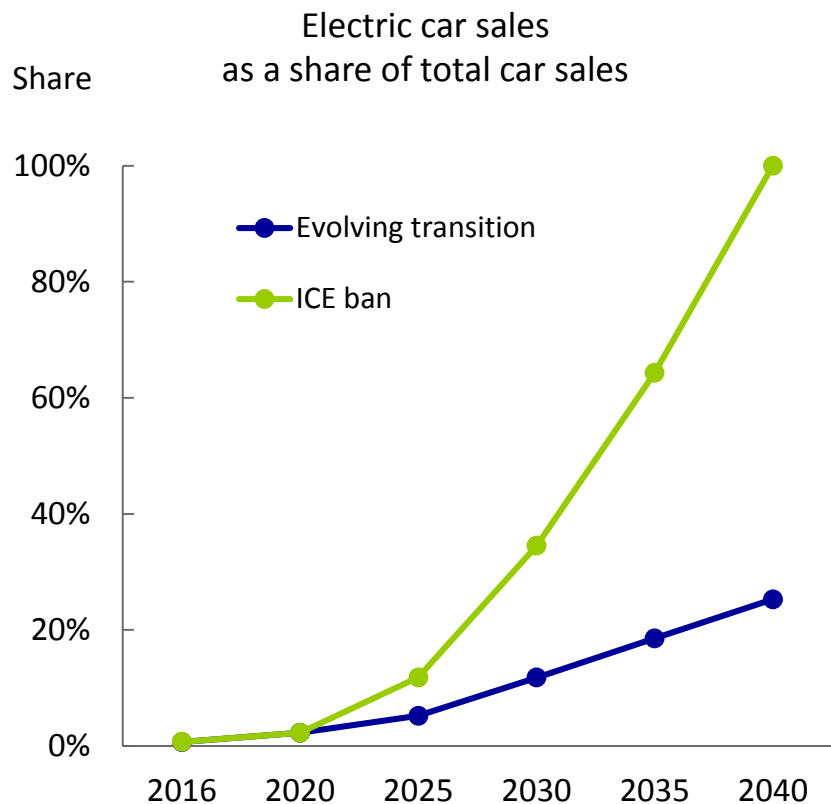
*Internal combustion engine

Car kilometres by fuel type

Trillion km



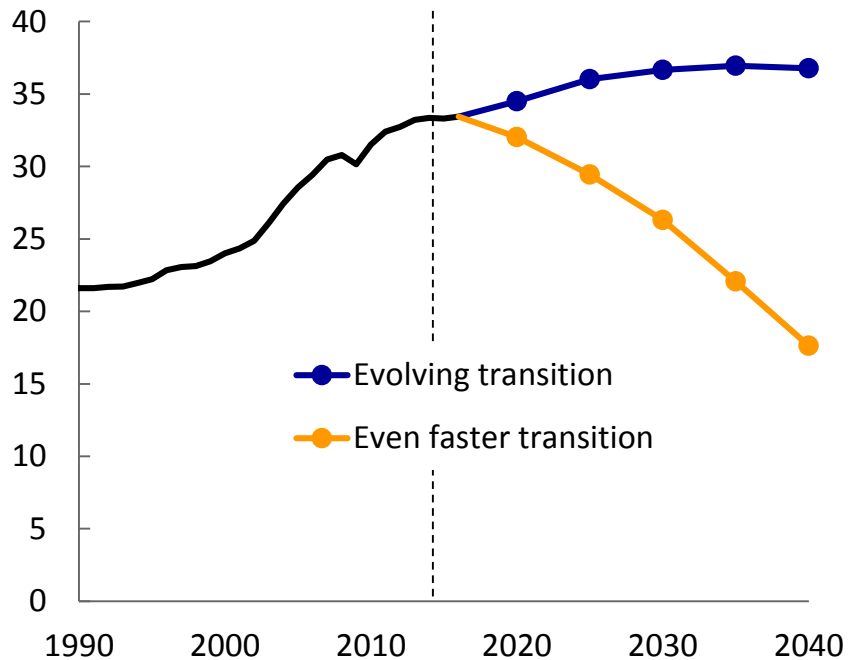
Global ban on internal-combustion engine (ICE) cars



Global ban on internal-combustion engine (ICE) cars

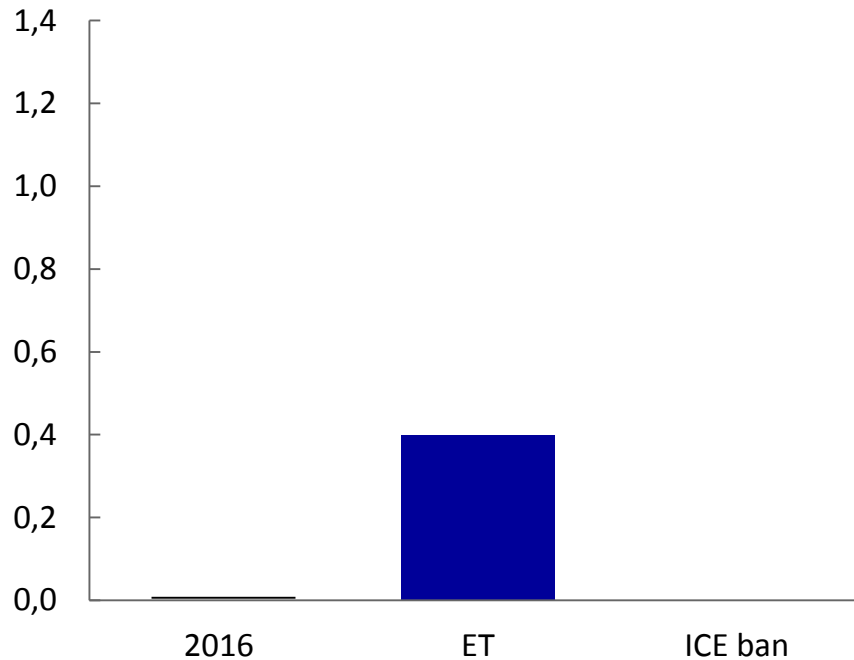
Carbon emissions from energy

Billion tonnes CO₂



Number of EV's

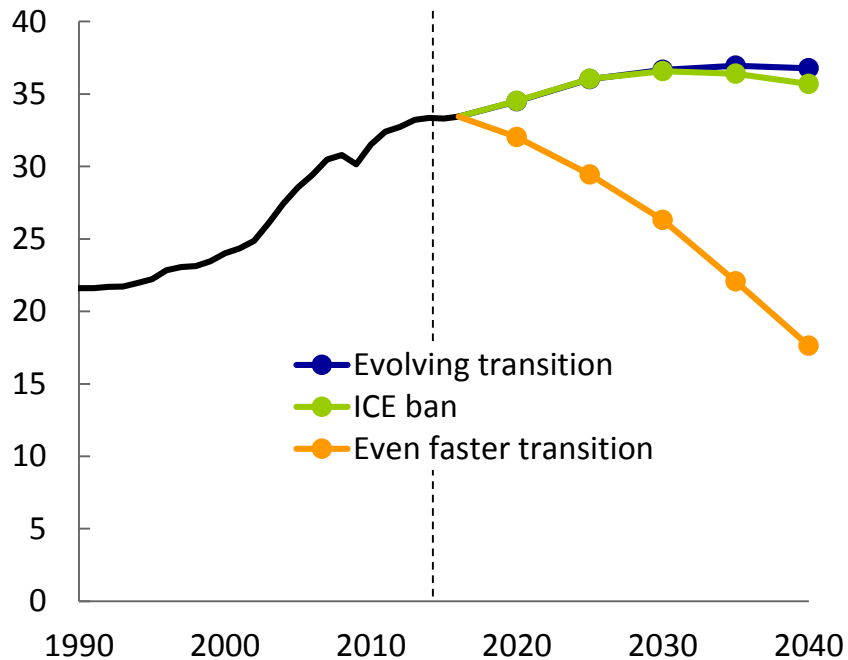
Billion



Global ban on internal-combustion engine (ICE) cars

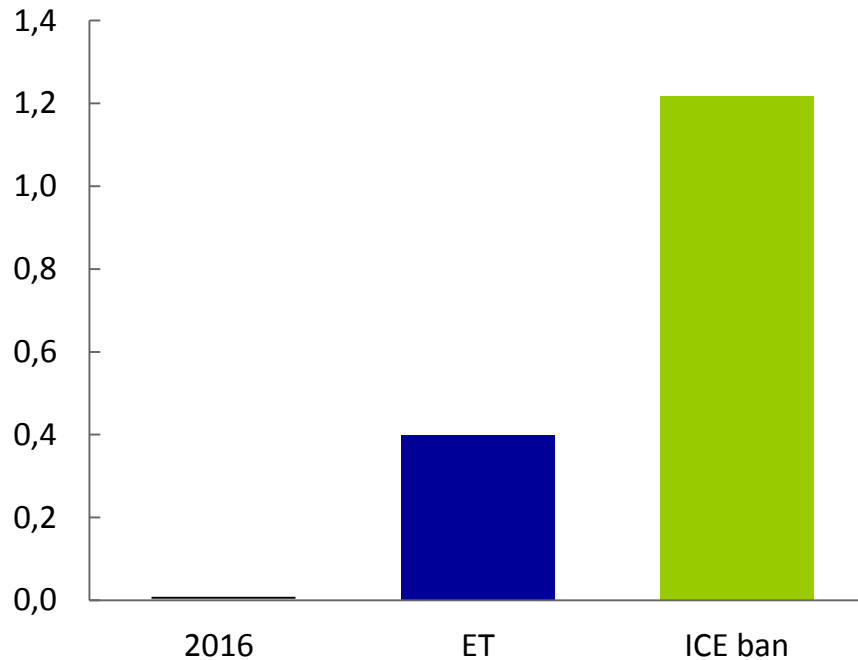
Carbon emissions from energy

Billion tonnes CO₂



Number of EV's

Billion

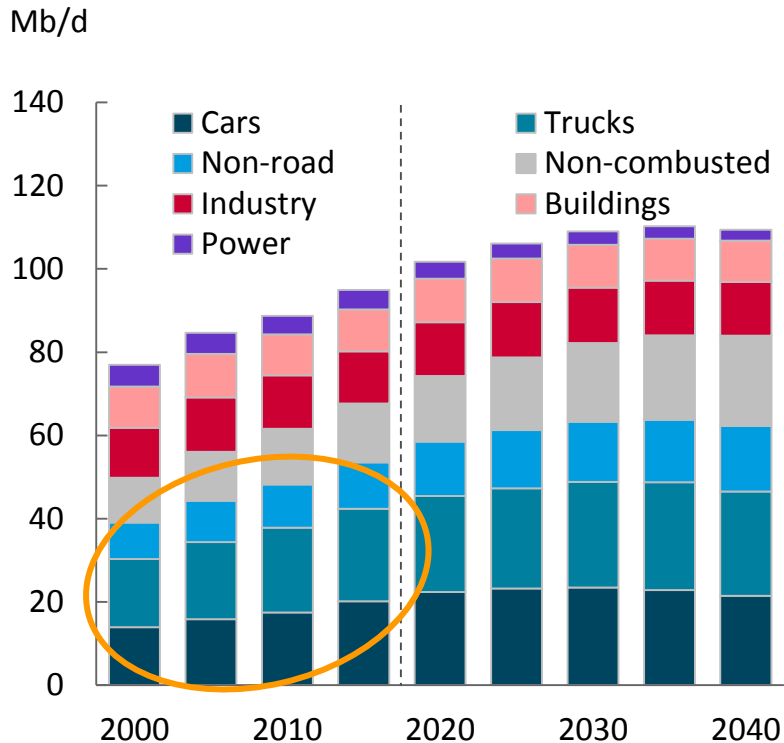


Key questions

- **What have we learnt about electric cars and the mobility revolution?**
- **When is global oil demand likely to stop growing?**
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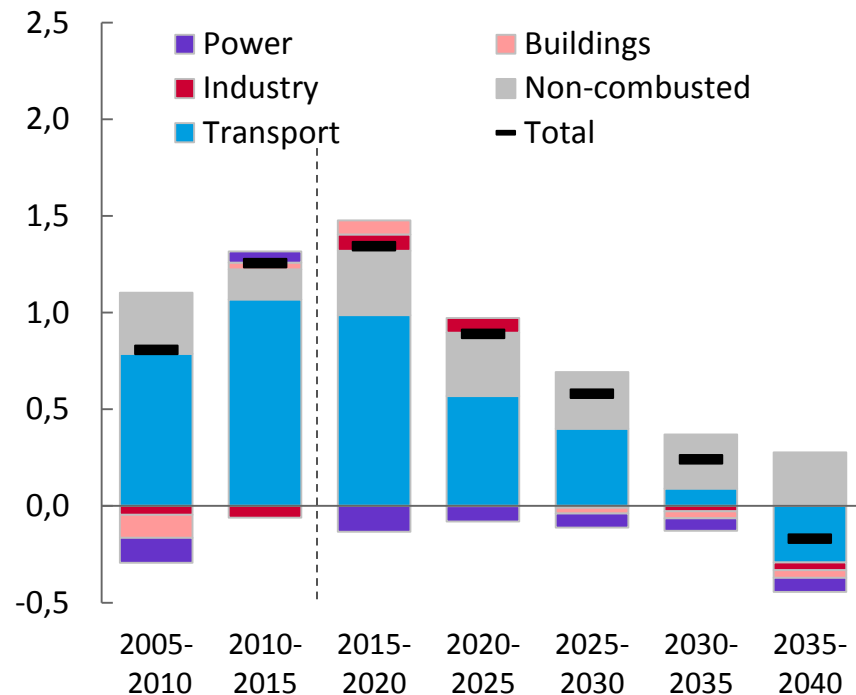
Demand for oil and other liquid fuels

Liquids demand



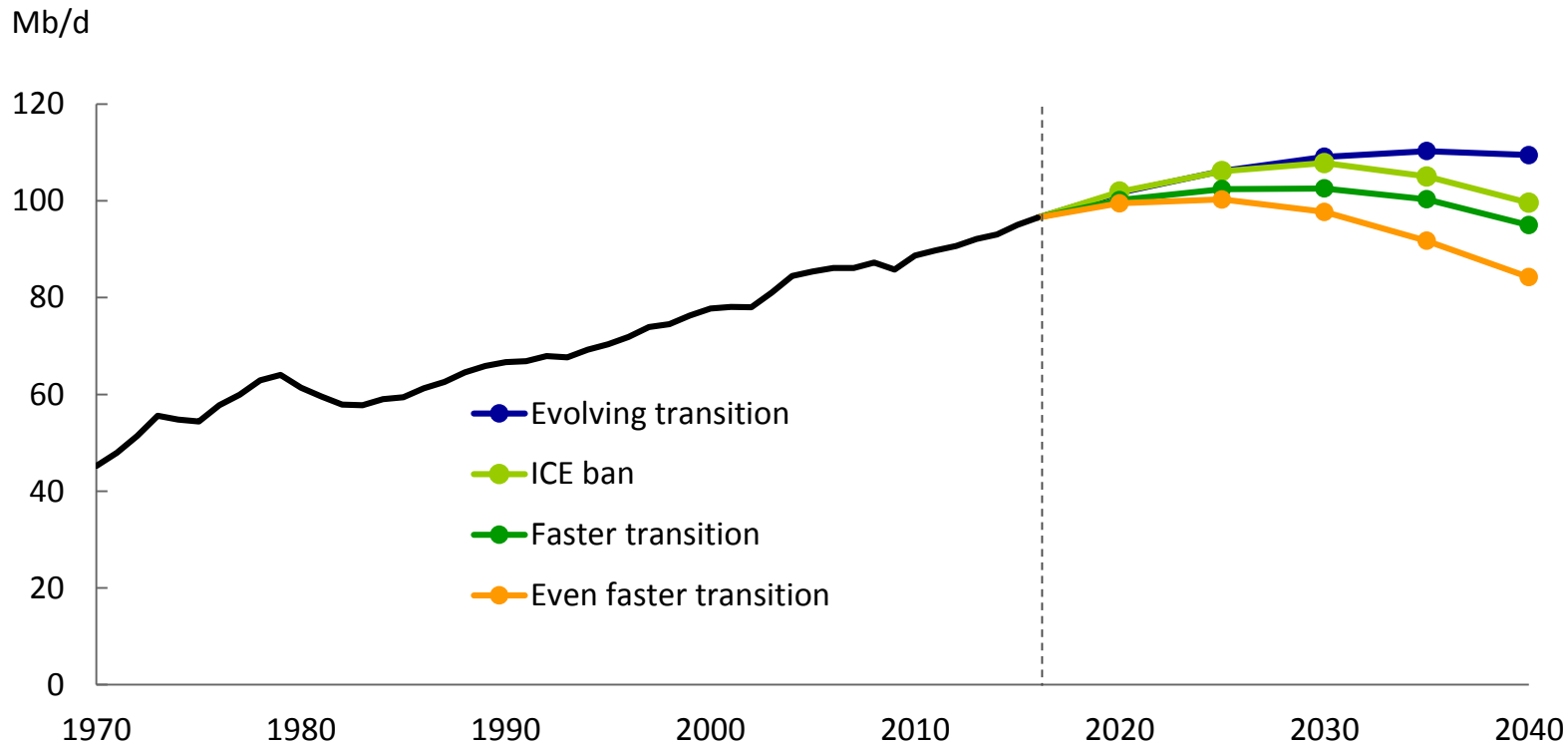
Liquids demand growth

Mb/d, average annual growth



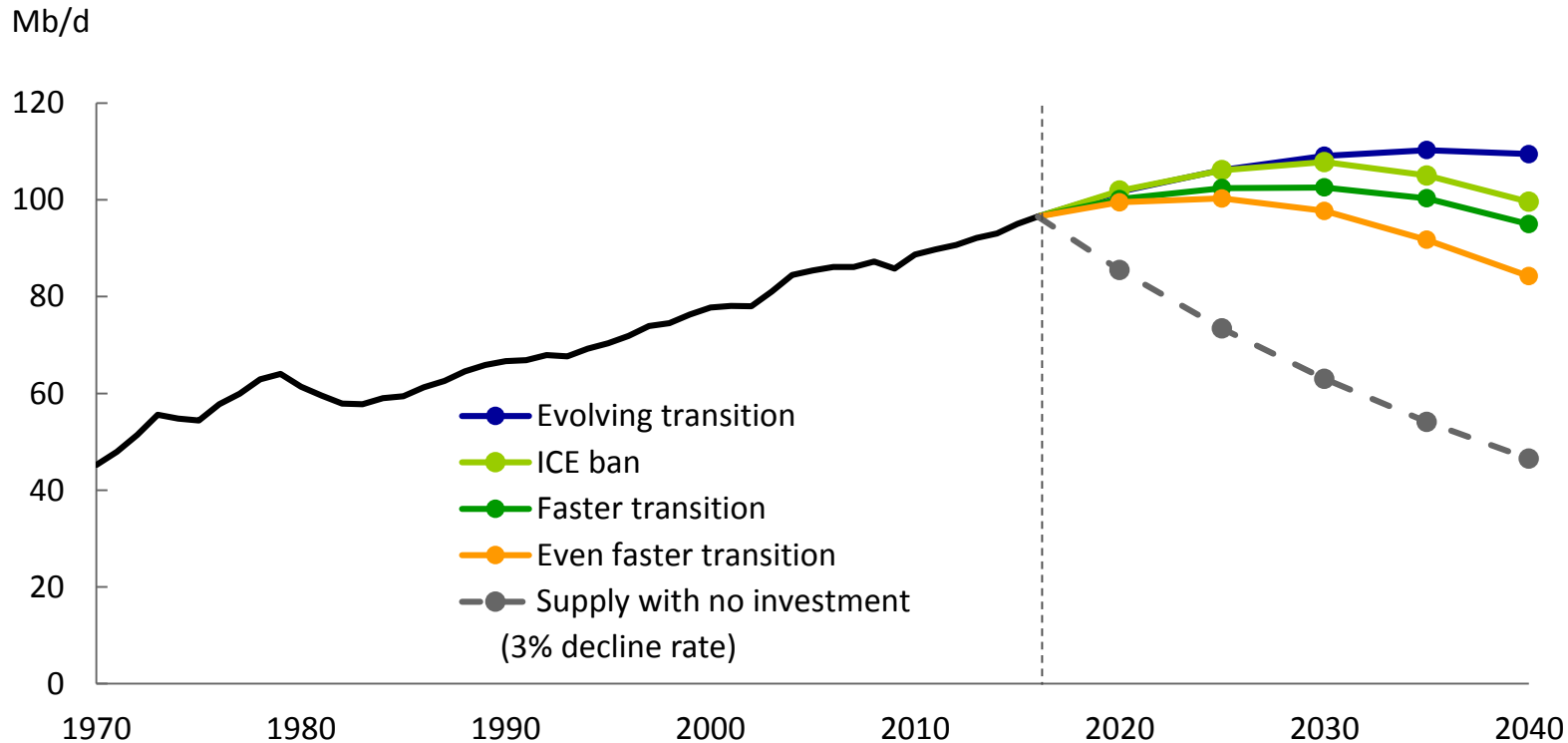
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Demand for oil and other liquid fuels

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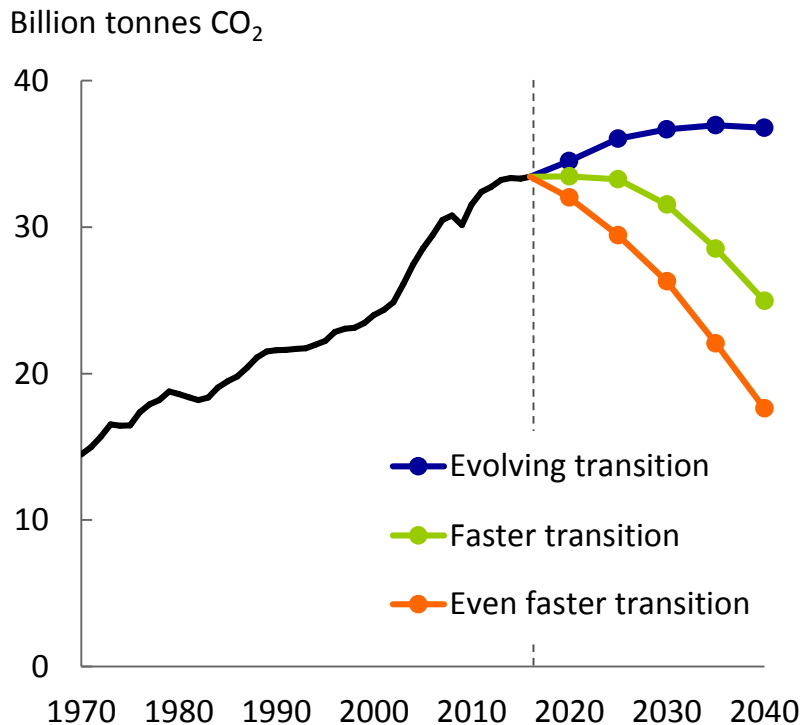


Key questions

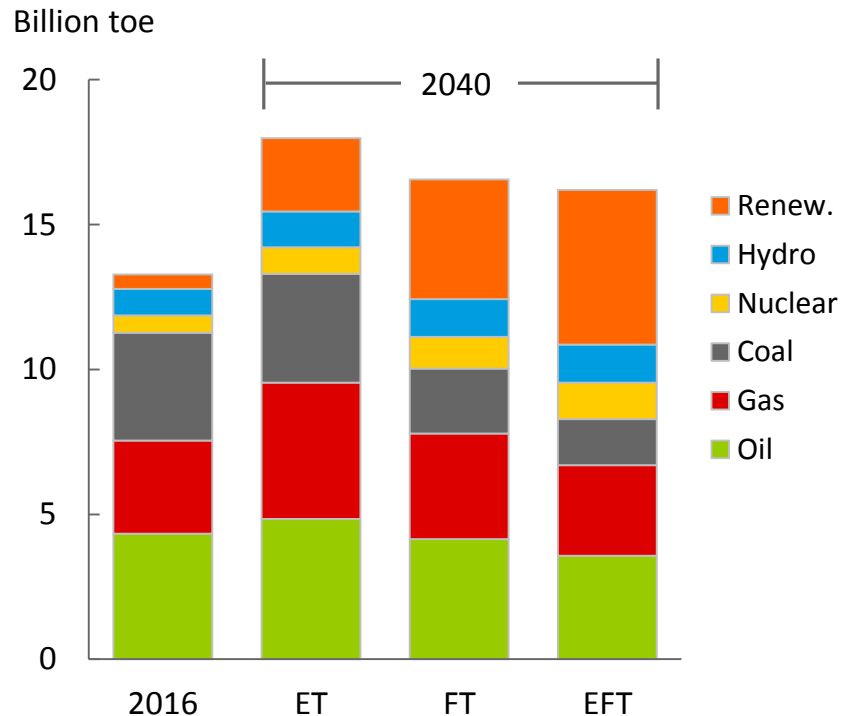
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Impact of faster transition on global energy

Carbon emissions



Primary energy consumption under different scenarios



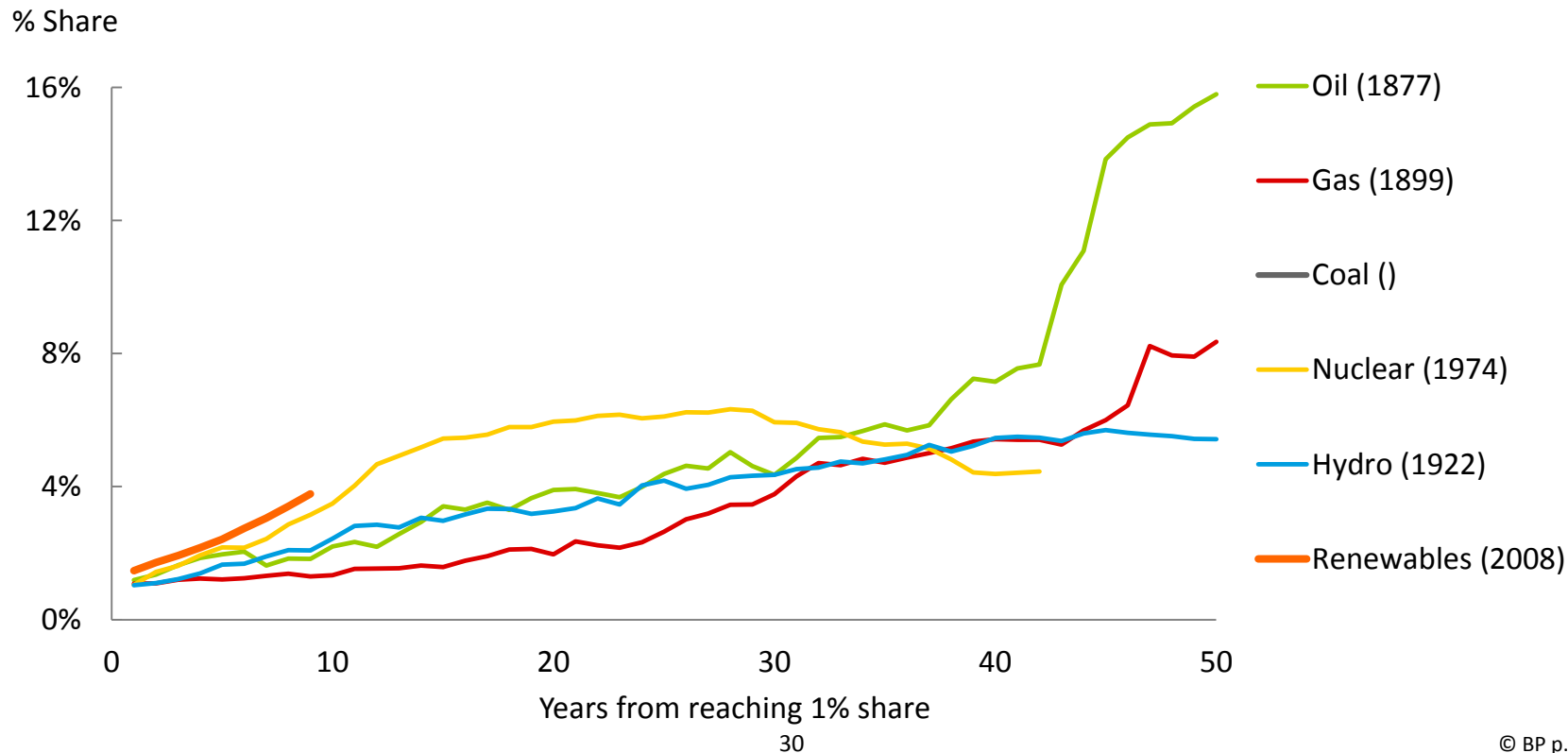


Appendix



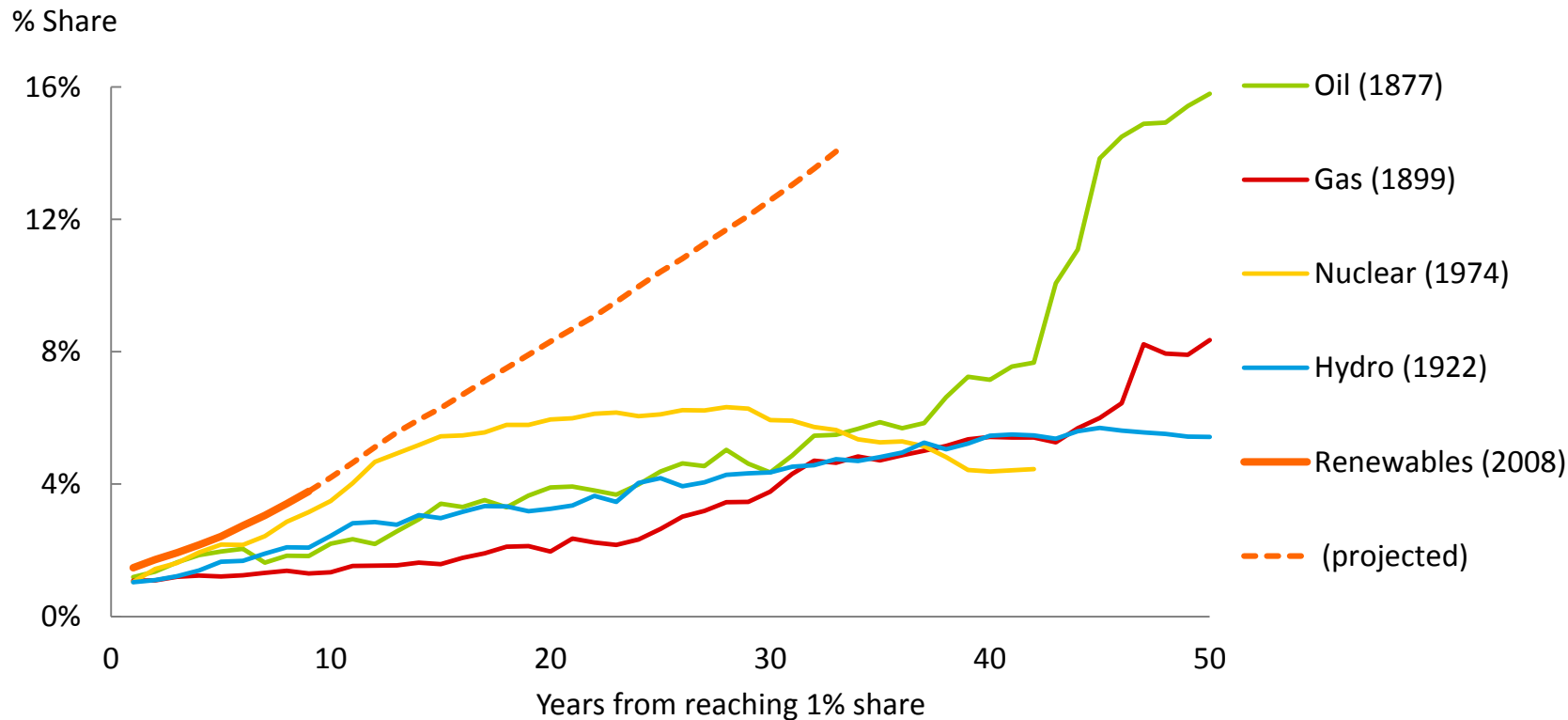
Energy transitions are measured in decades

Shares of global primary energy



Energy transitions are measured in decades

Shares of global primary energy



Energy transitions are measured in decades



Shares of global primary energy

% Share

