

# BP Energy Outlook

## 2016 edition



Spencer Dale, group chief economist

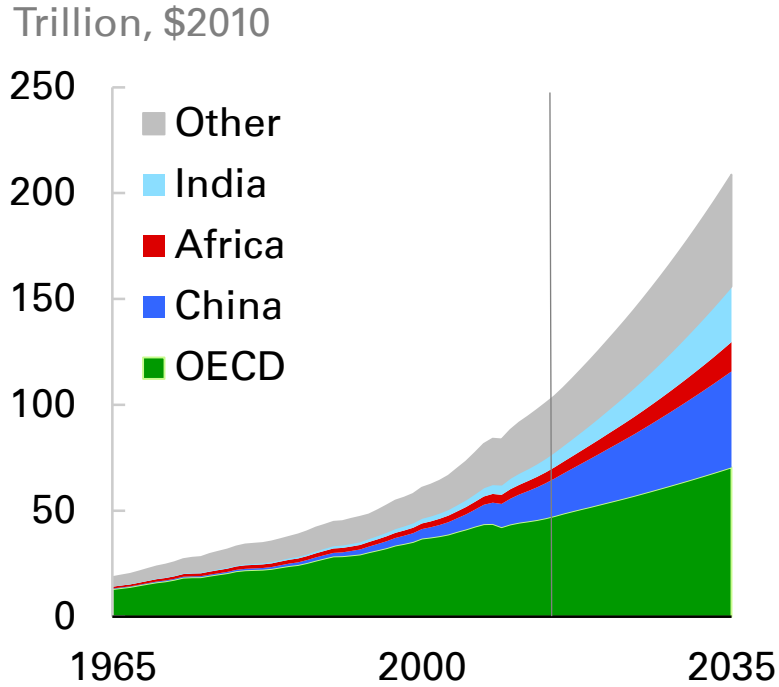
Outlook  
to 2035

[bp.com/energyoutlook](http://bp.com/energyoutlook)  
#BPstats

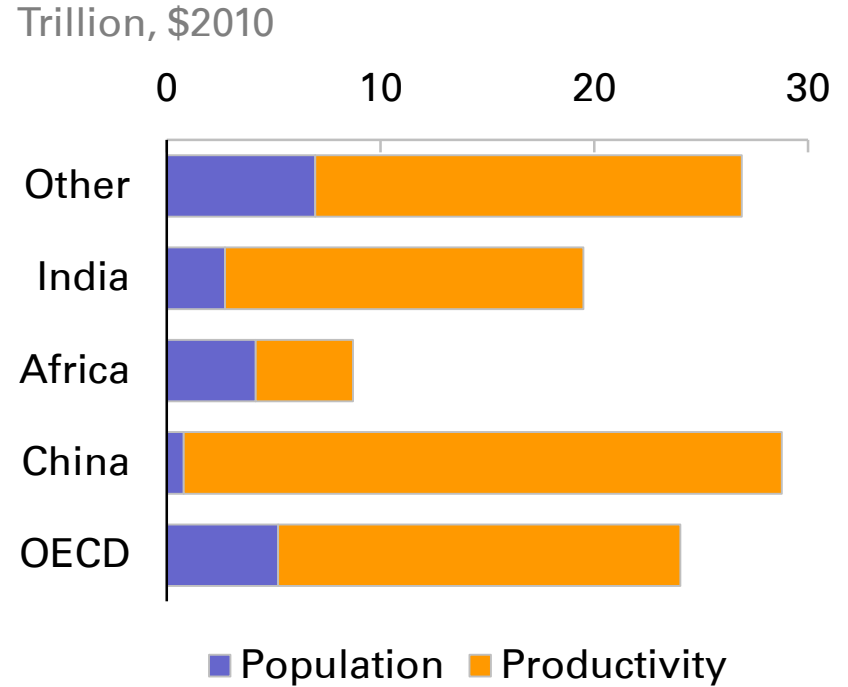


# Economic backdrop

## GDP

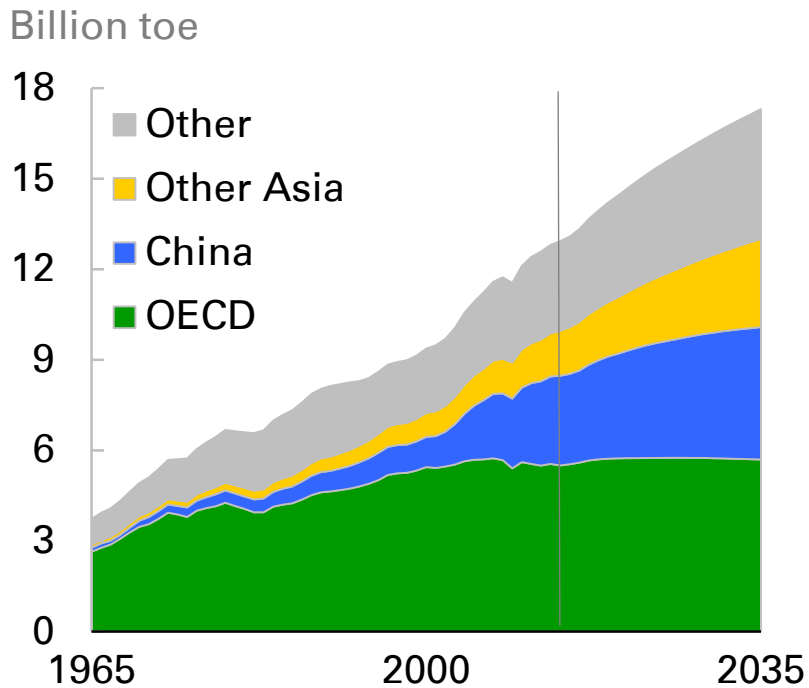


## Contribution to GDP growth 2014-35

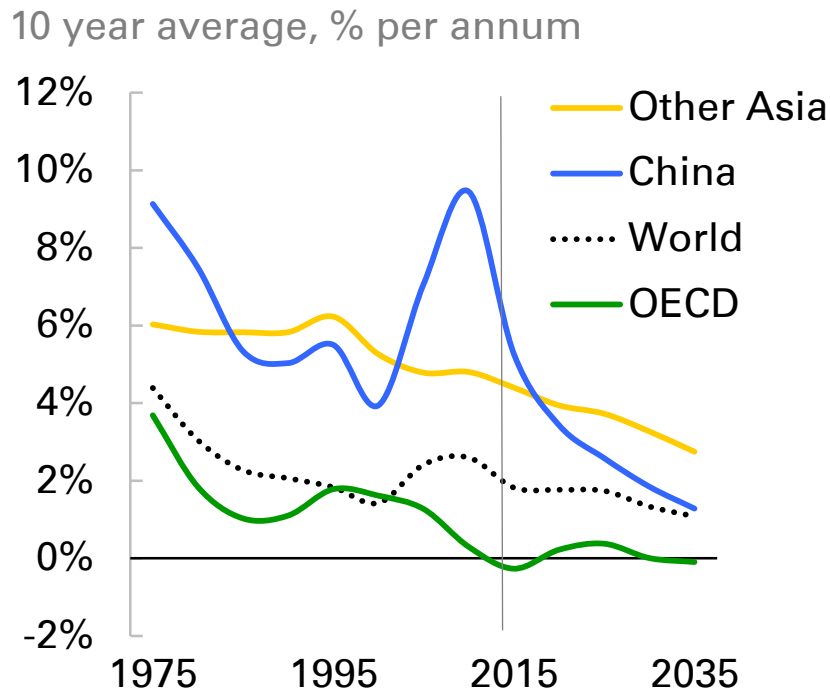


# Global energy demand

## Consumption by region

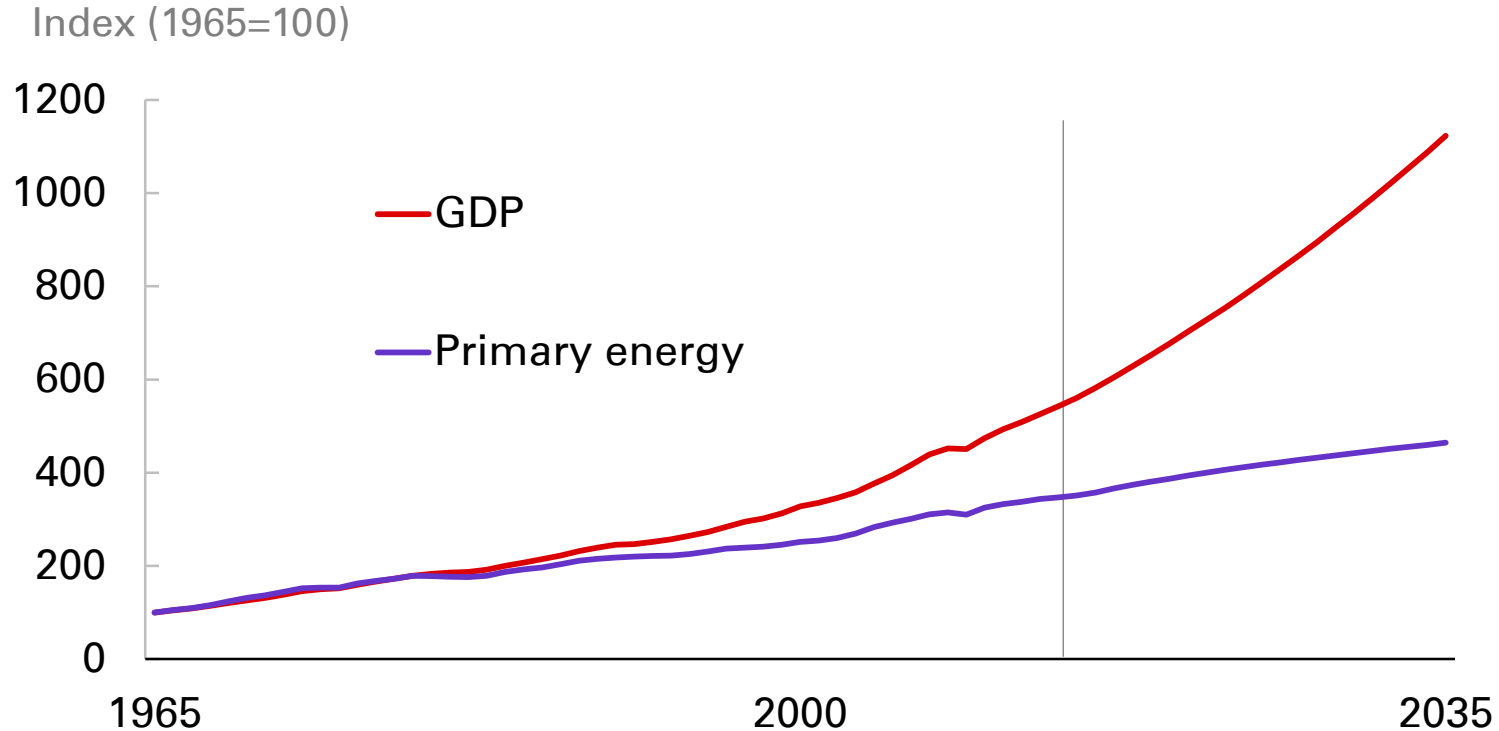


## Consumption growth by region



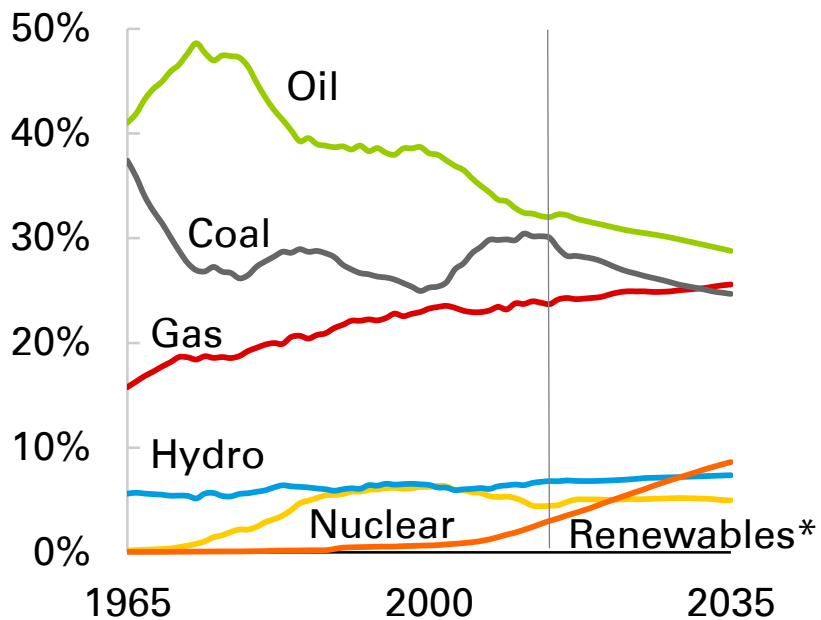
# What drives energy demand?

# Global GDP and energy



# Fuel mix

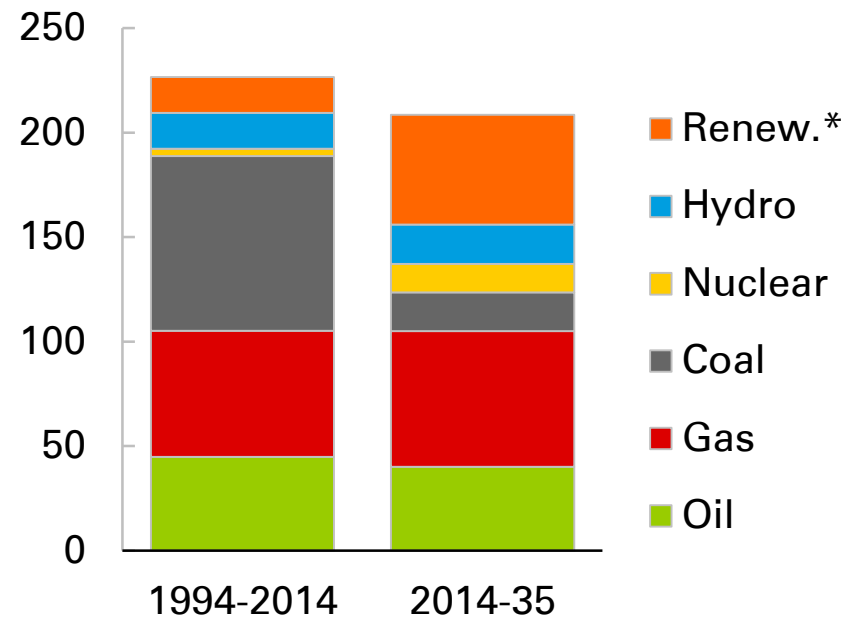
## Shares of primary energy



\*Includes biofuels

## Annual demand growth by fuel

Mtoe per annum



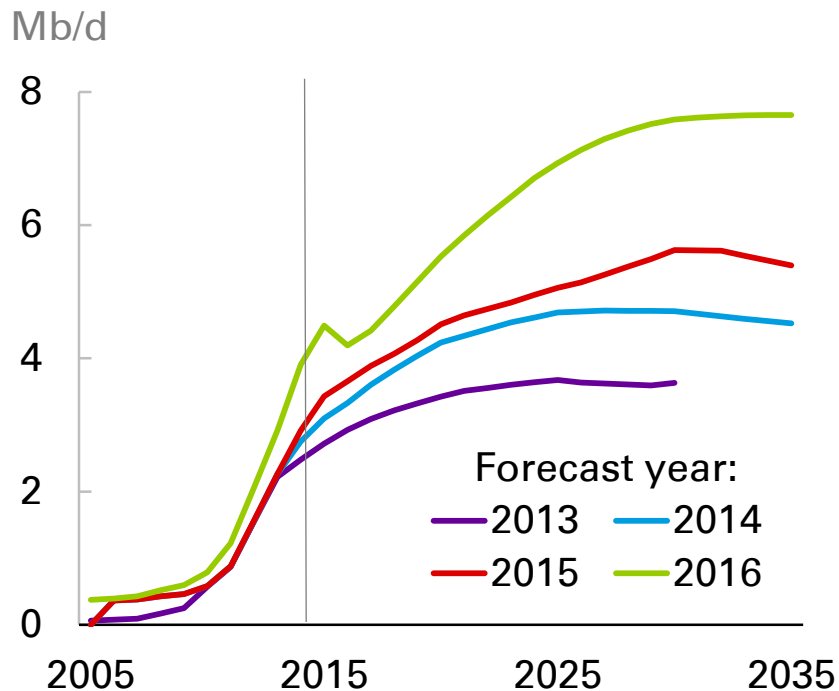
# Key factors shaping the fuel mix

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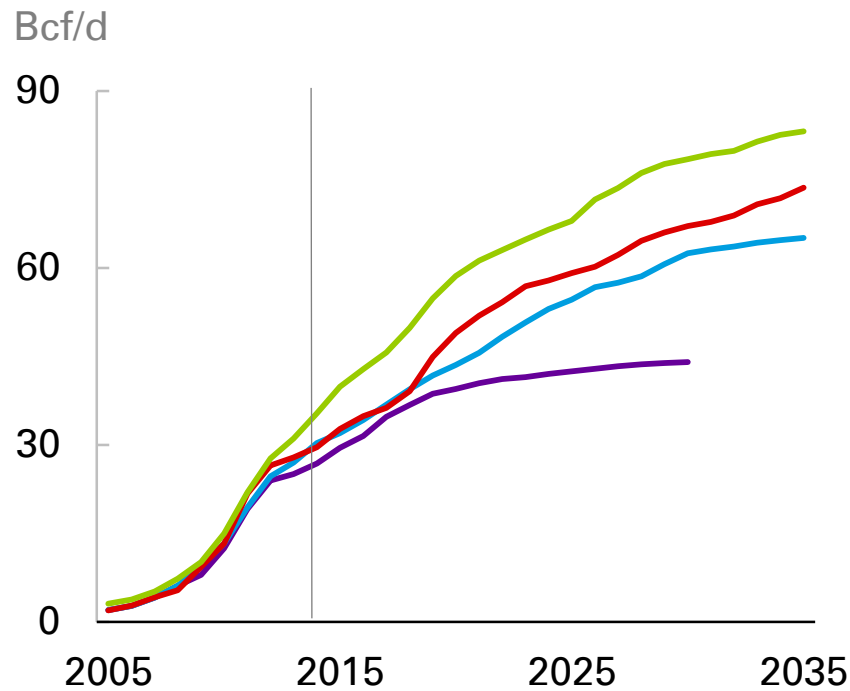
- What have we learned about US shale?
- China's changing energy needs
- Prospects for renewables and other non-fossil fuels
- Changing outlook for carbon emissions

# US tight oil and shale gas

## US tight oil forecasts



## US shale gas forecasts





# Key factors shaping the fuel mix

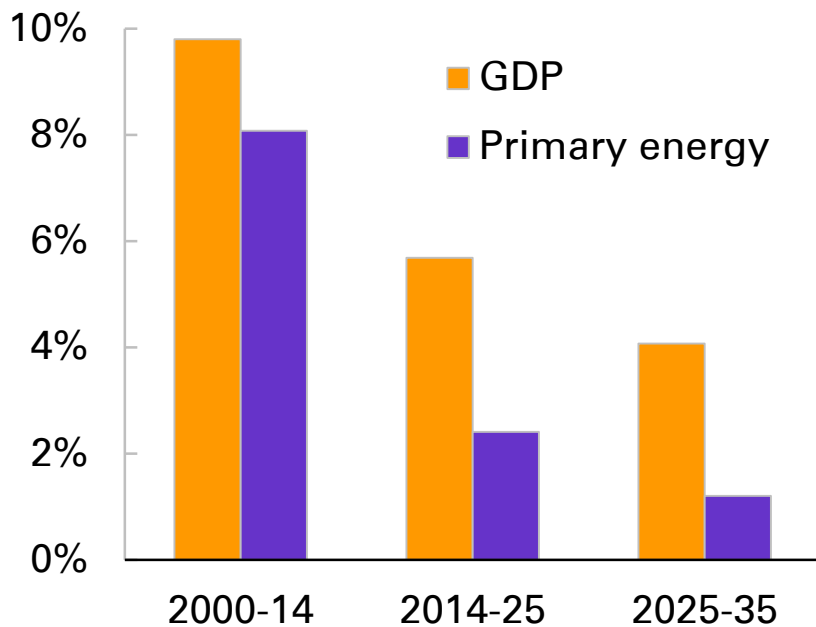
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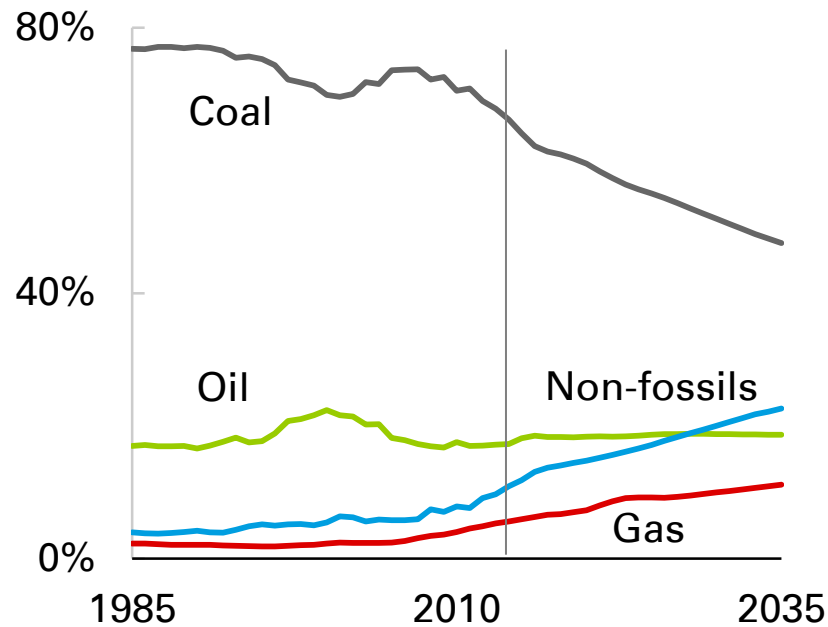
# China's changing energy needs

## GDP and primary energy growth

% per annum



## Shares of primary energy



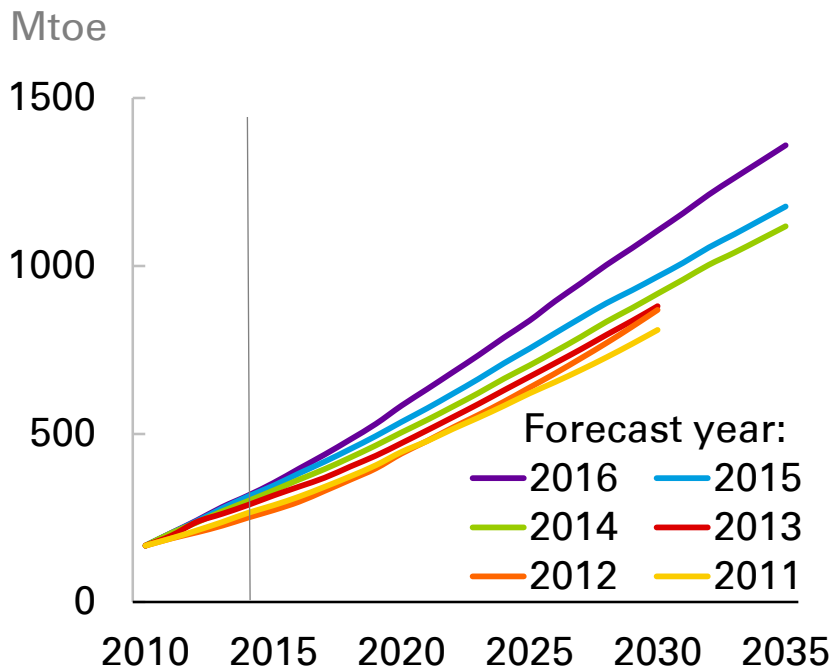
# Key factors shaping the fuel mix

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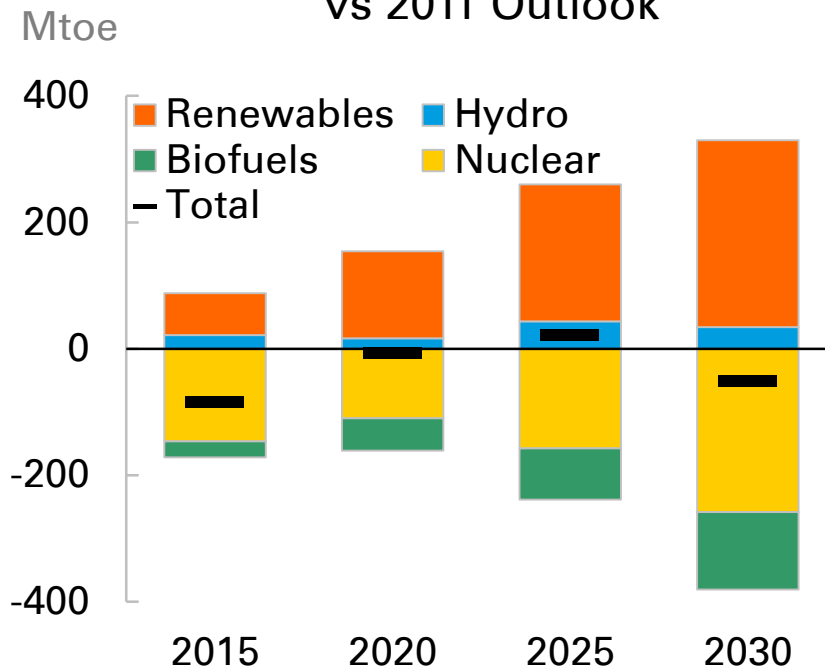
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# Renewables and other non-fossil fuels

## Renewables in power forecasts



## Revisions to non-fossil fuels vs 2011 Outlook

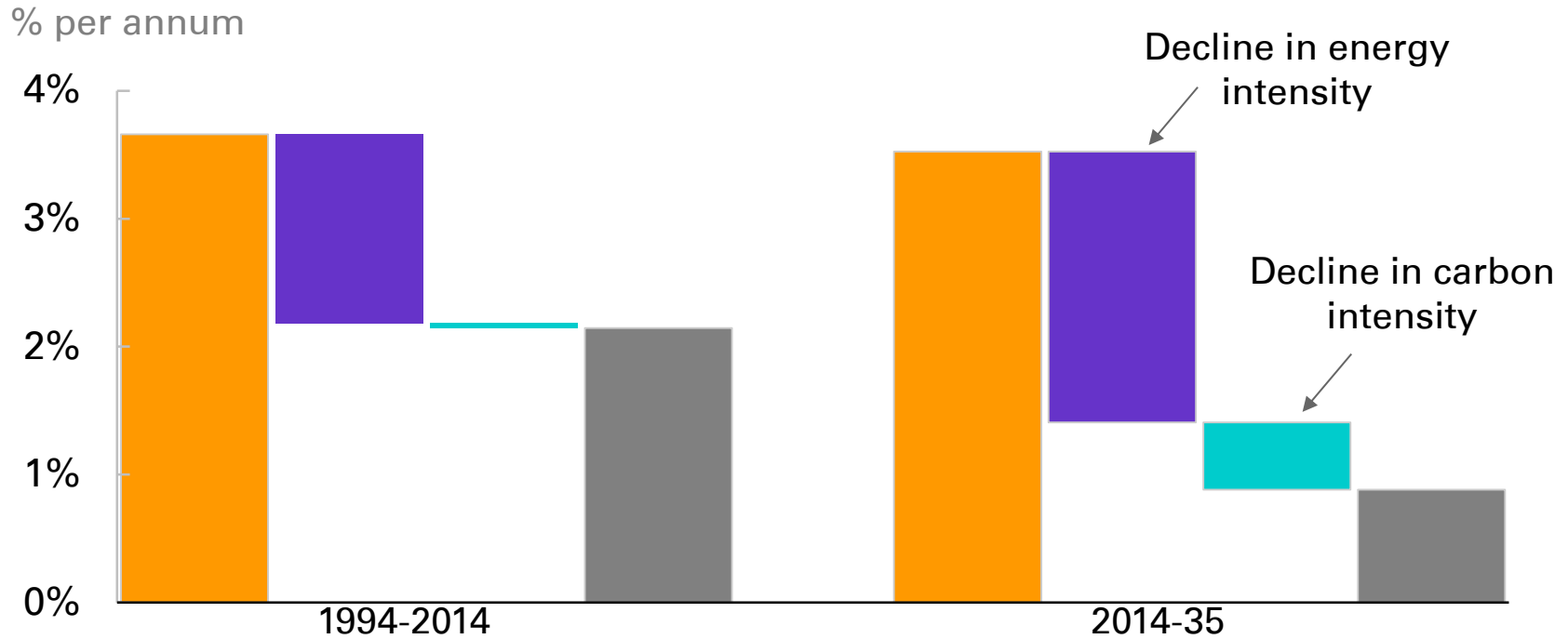


# Key factors shaping the fuel mix

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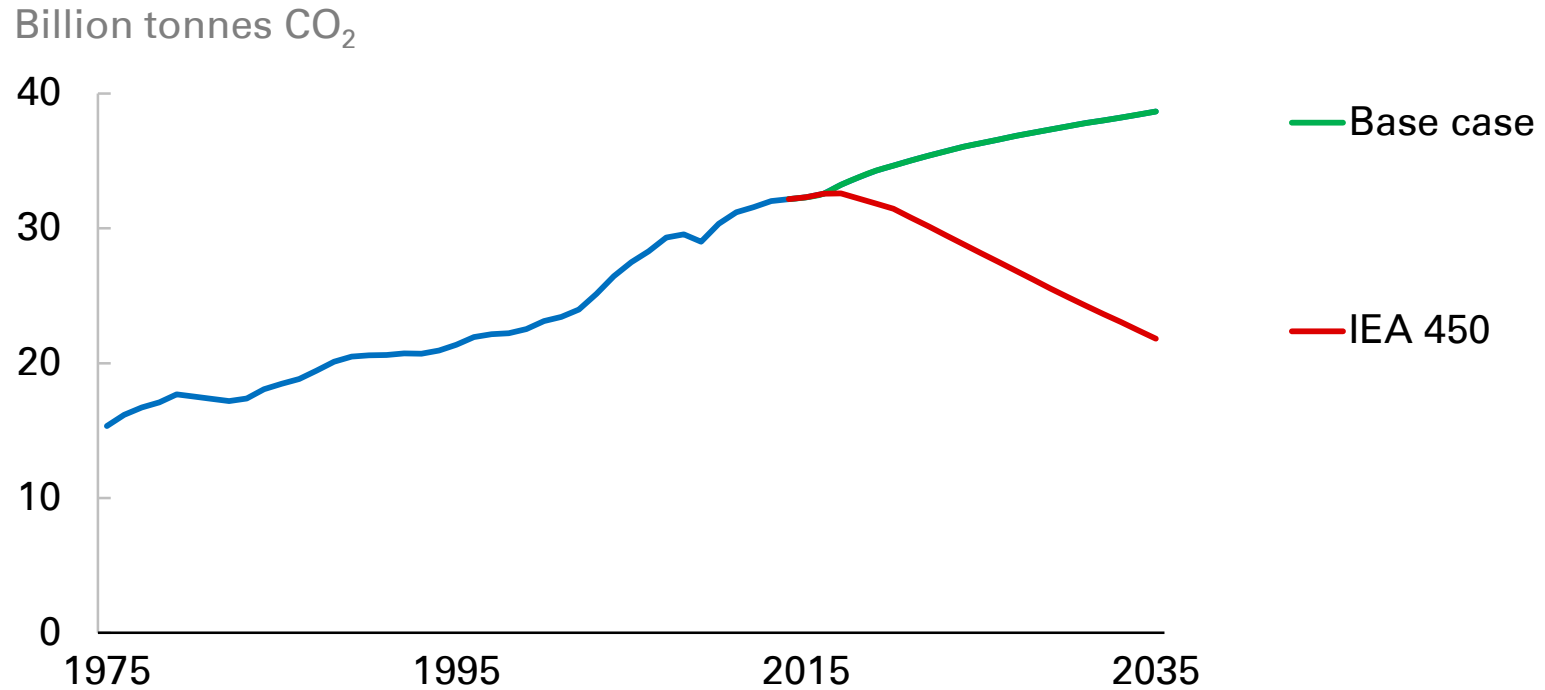
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# Carbon emissions



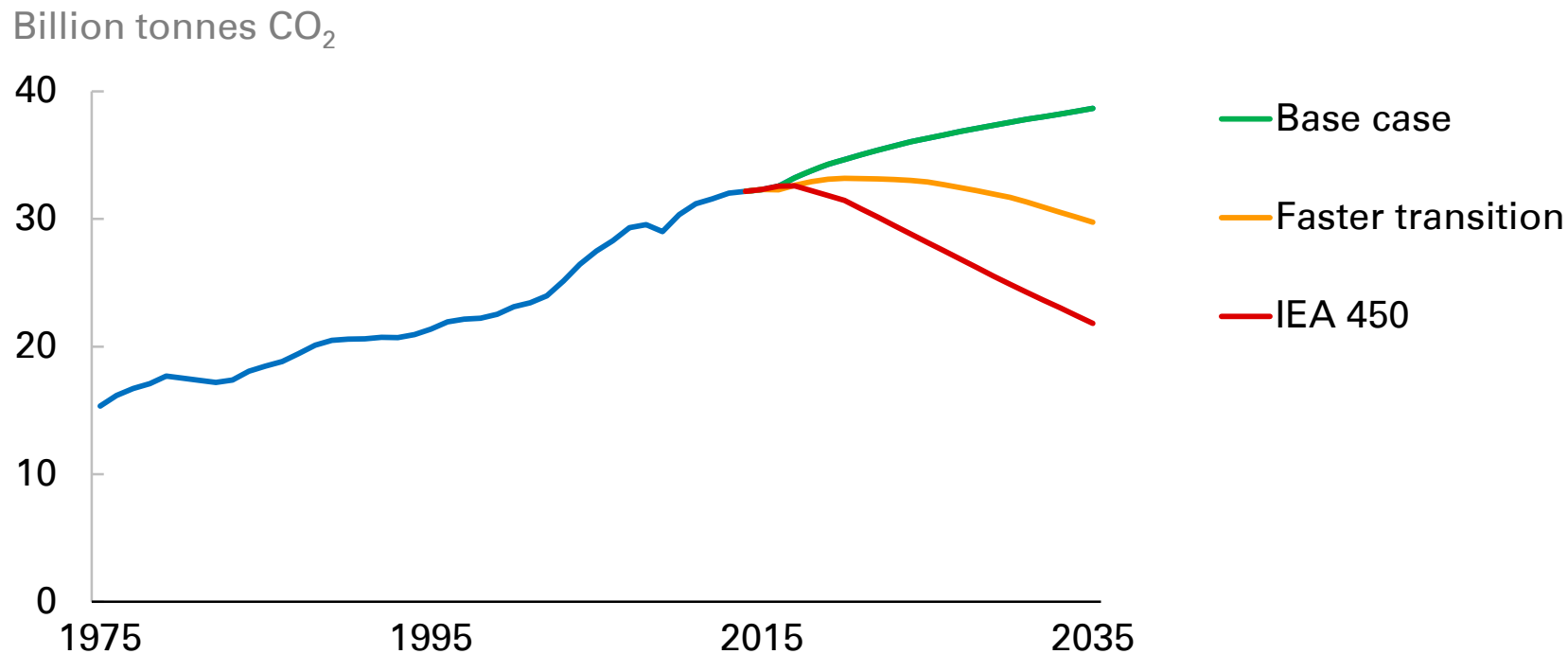
# Outlook for carbon emissions

## Carbon emissions



# Outlook for carbon emissions

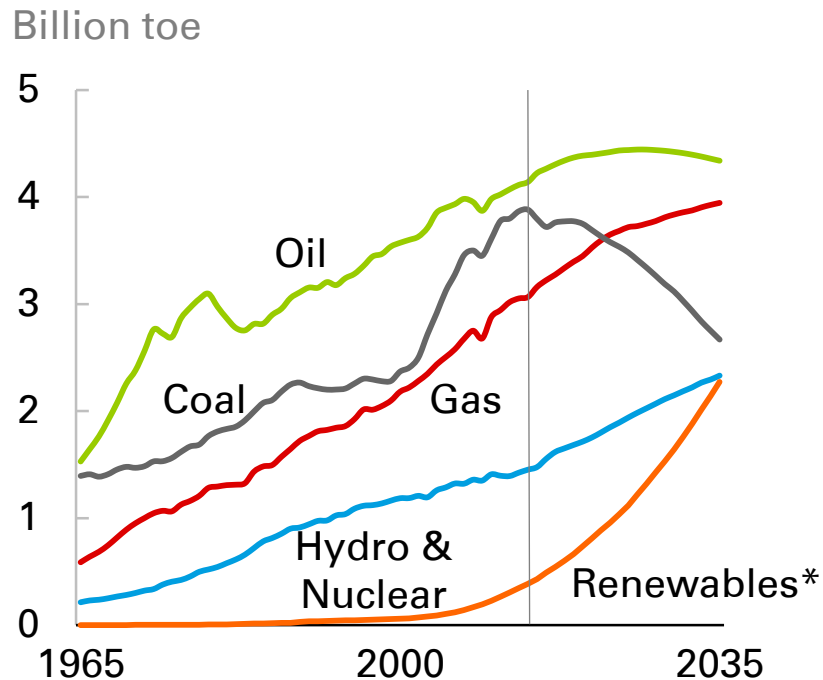
## Carbon emissions





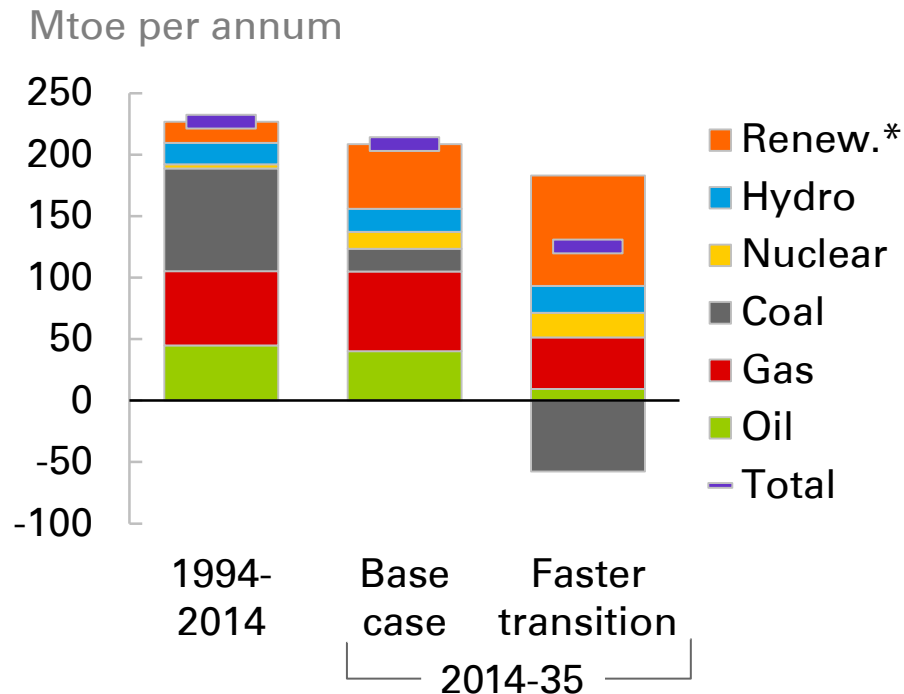
# Impact of faster transition case

## Consumption by fuel



\*Includes biofuels

## Annual demand growth by fuel



# Conclusions

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- Global demand for energy continues to rise
  - to power increased levels of activity as the world economy continues to grow
- Fuel mix changes significantly
  - coal losing, renewables gaining, and oil and gas combined holding steady
- Growth rate of carbon emissions slows sharply
  - but further policy changes are needed



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