

# BP Energy Outlook 2035



Focus on North America, February 2014

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





# Contents

---

## Regional energy trends

Fuel by fuel

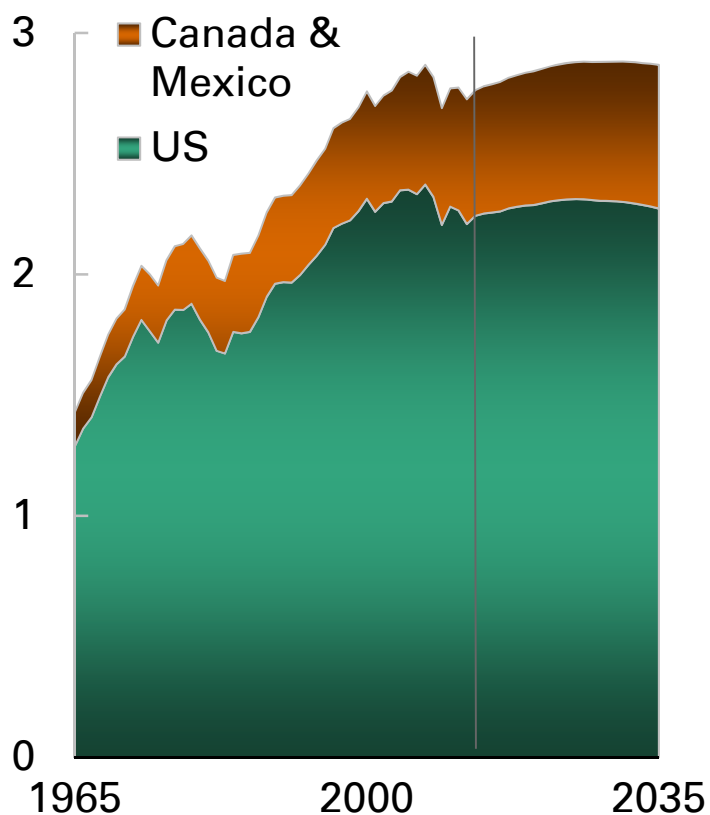
Carbon emissions and the fuel mix



# North American energy use rises slowly and peaks in the US

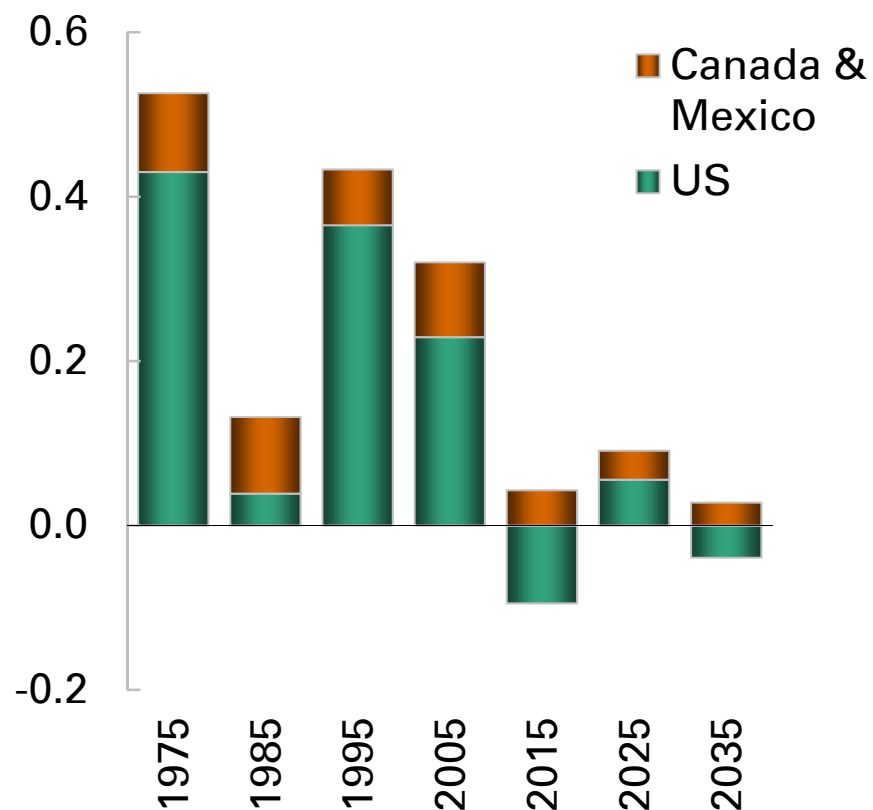
## Consumption by region

Billion toe



## Ten year increments by region

Billion toe

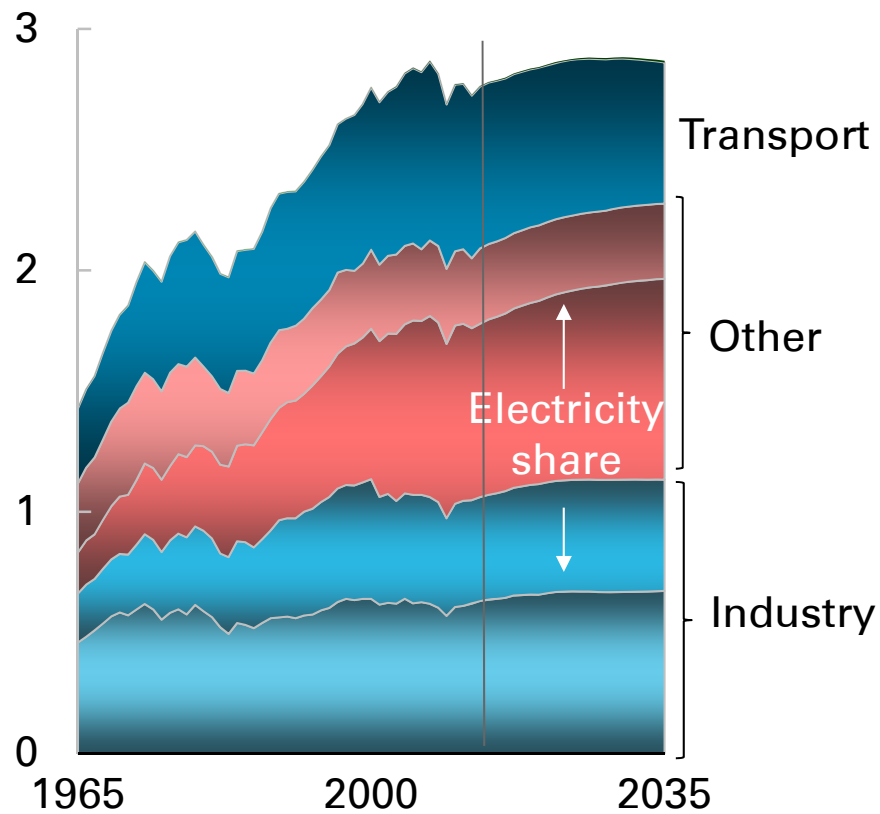




# Falling transport demand offset by 'other' (including power)

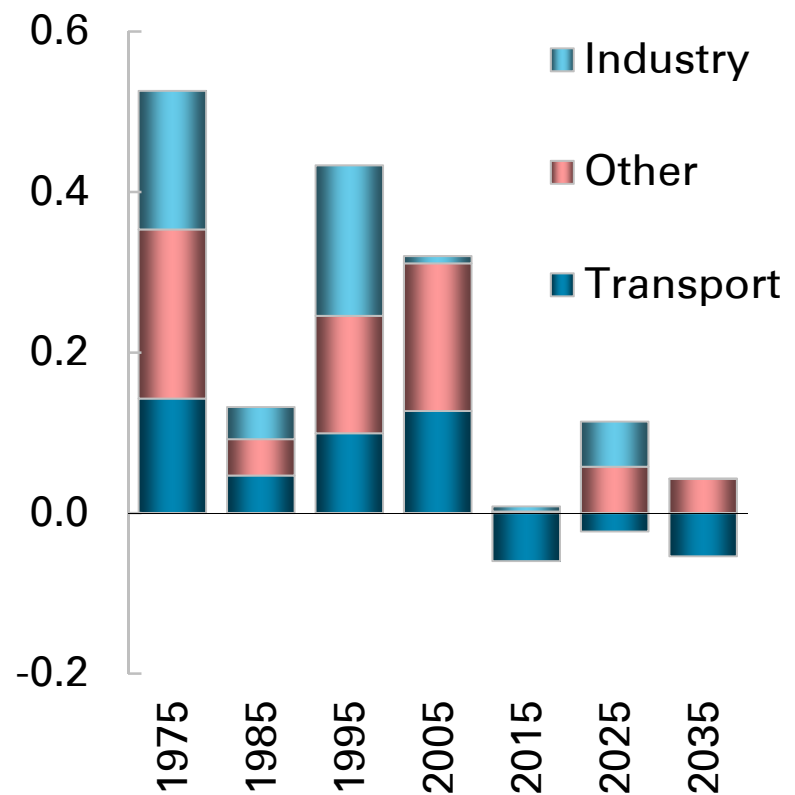
## Consumption by sector

Billion toe



## Ten year increments by sector

Billion toe

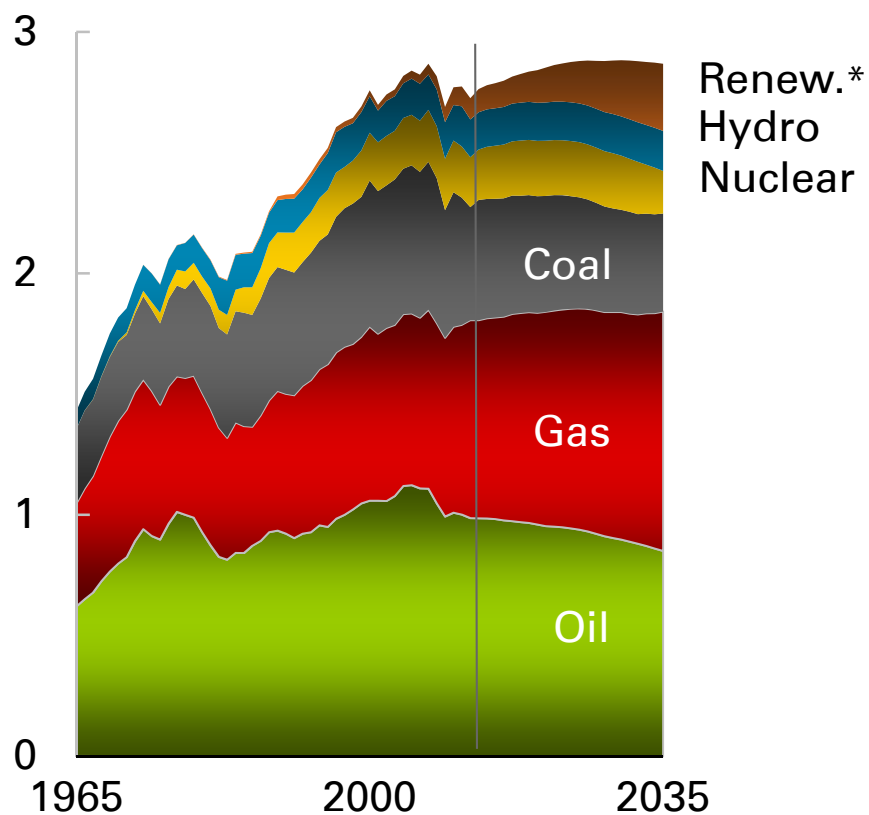




# Decline in oil demand, increases for natural gas & renewables

## Consumption by fuel

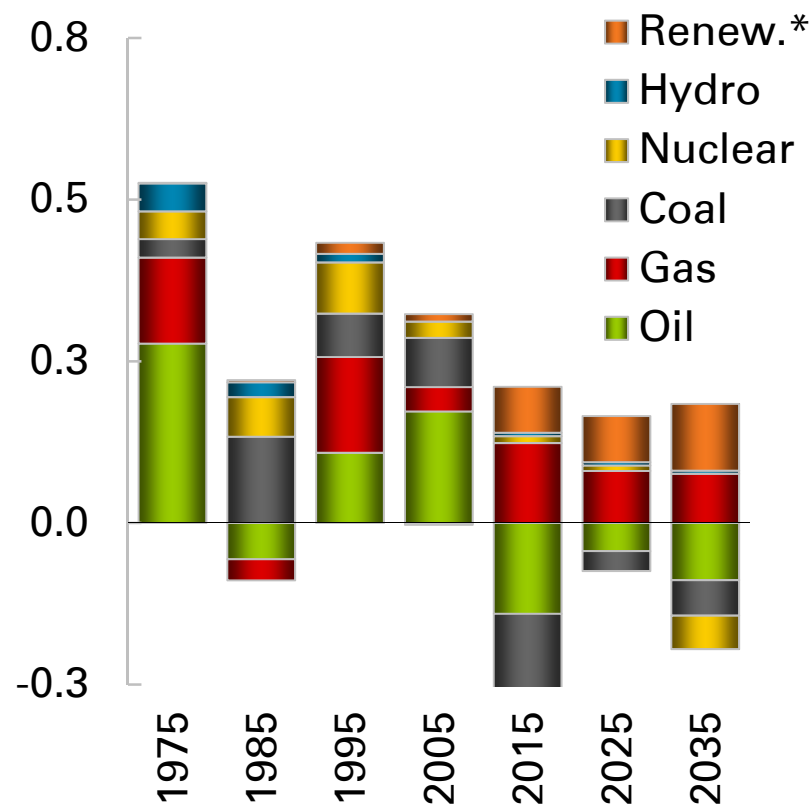
Billion toe



\*Includes biofuels

## Ten year increments by fuel

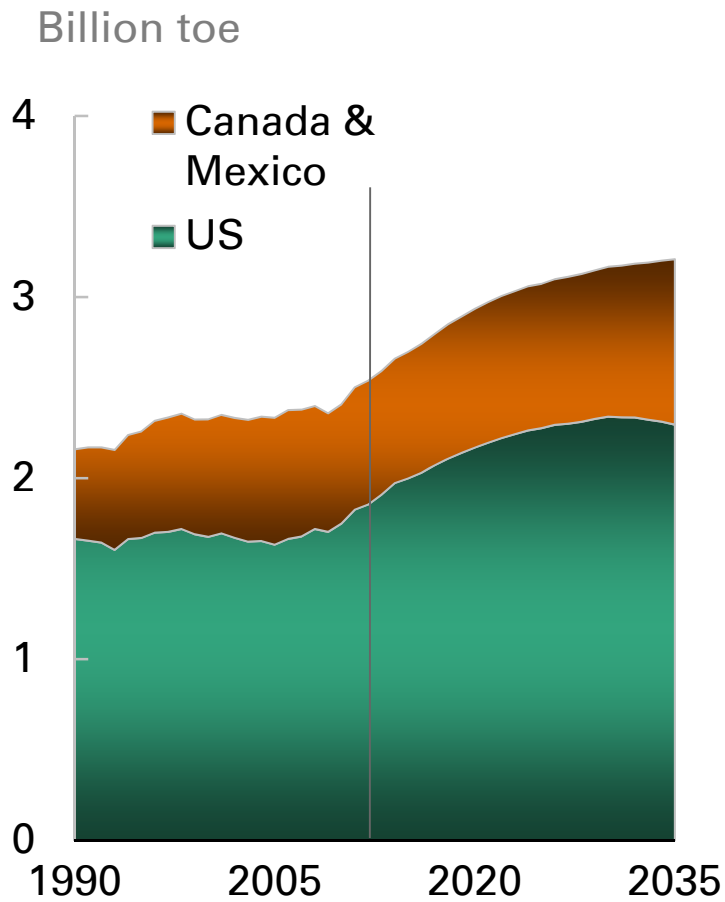
Billion toe



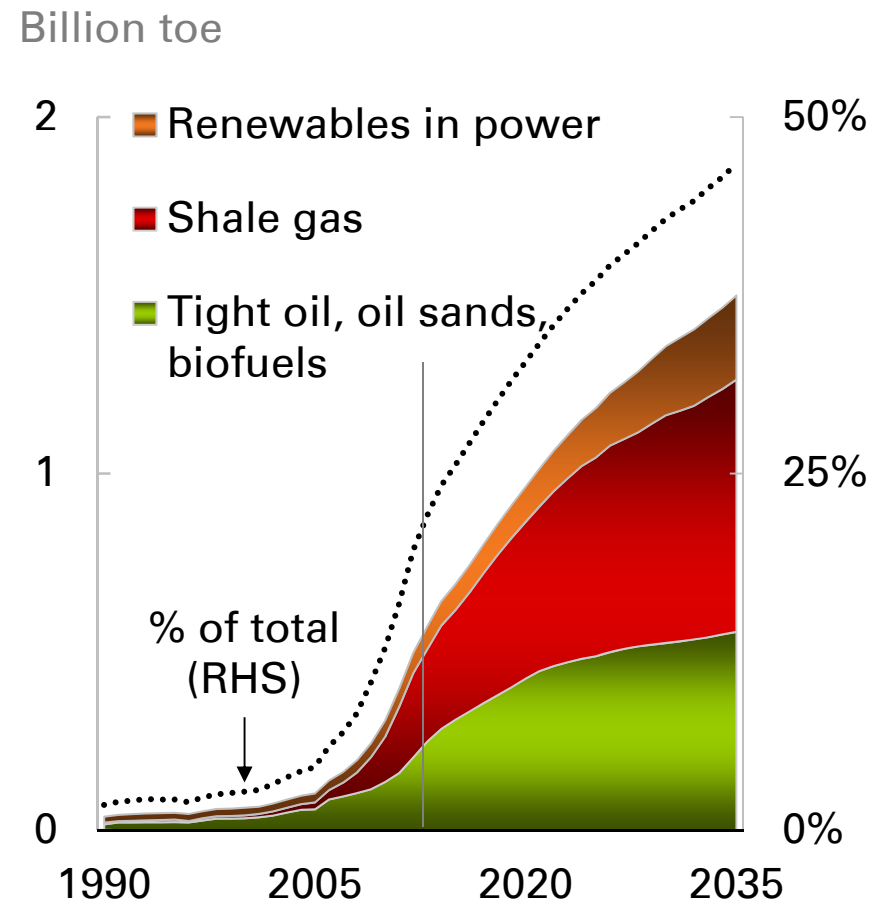


# North American output growth led by gas, oil & renewables

### Production by region



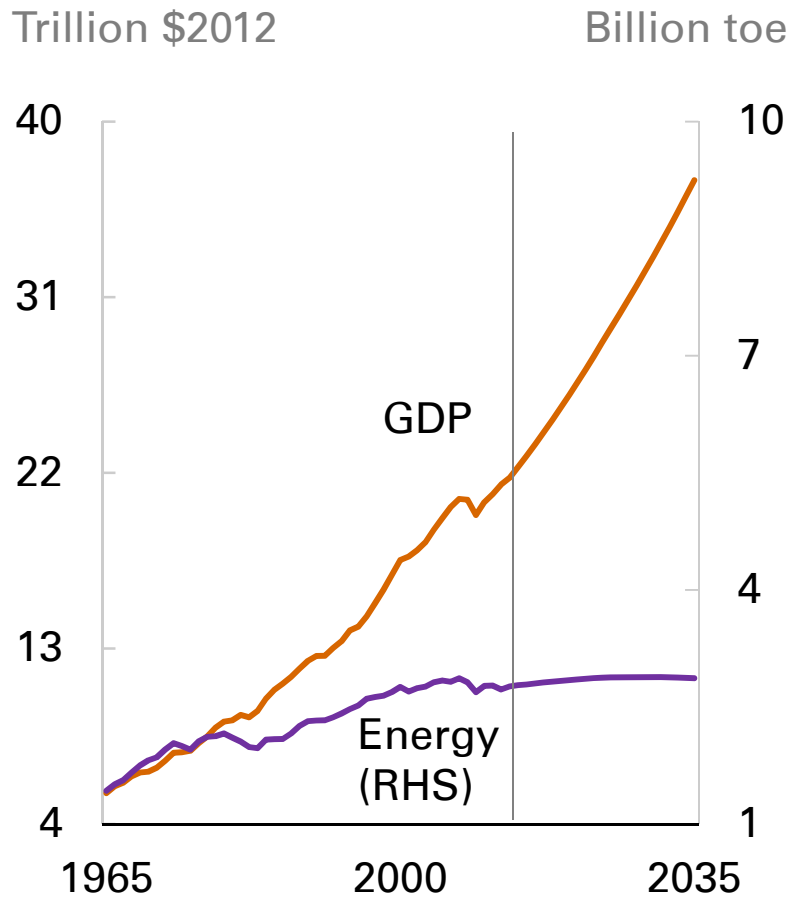
### New energy forms



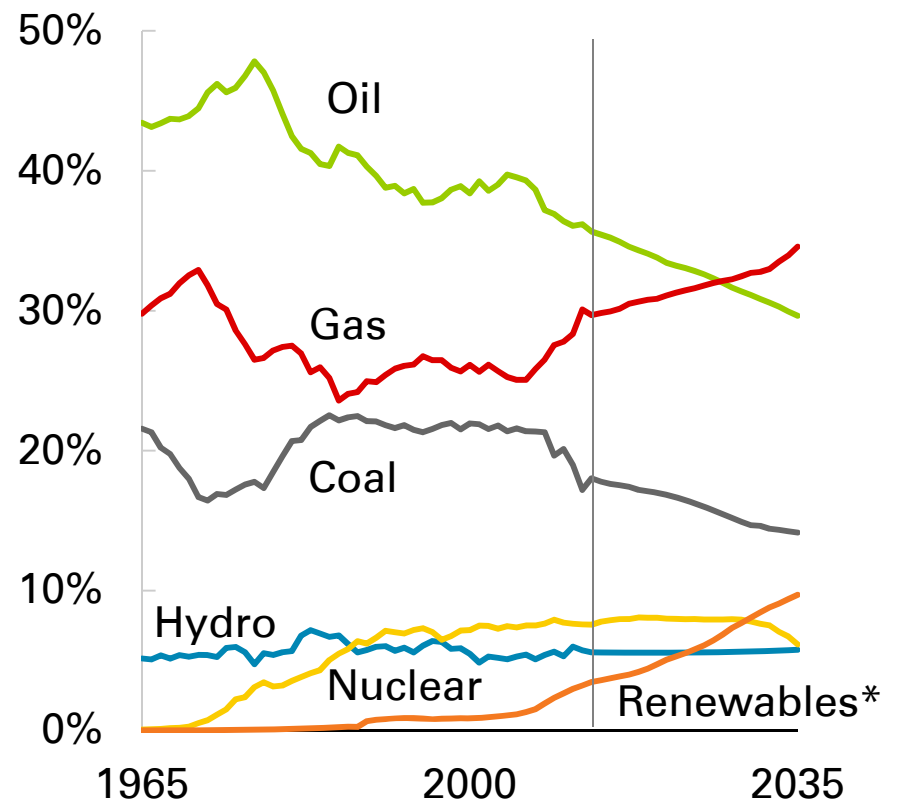
# Energy decouples from economic growth and fuel shares shift



## GDP and energy



## Shares of primary energy

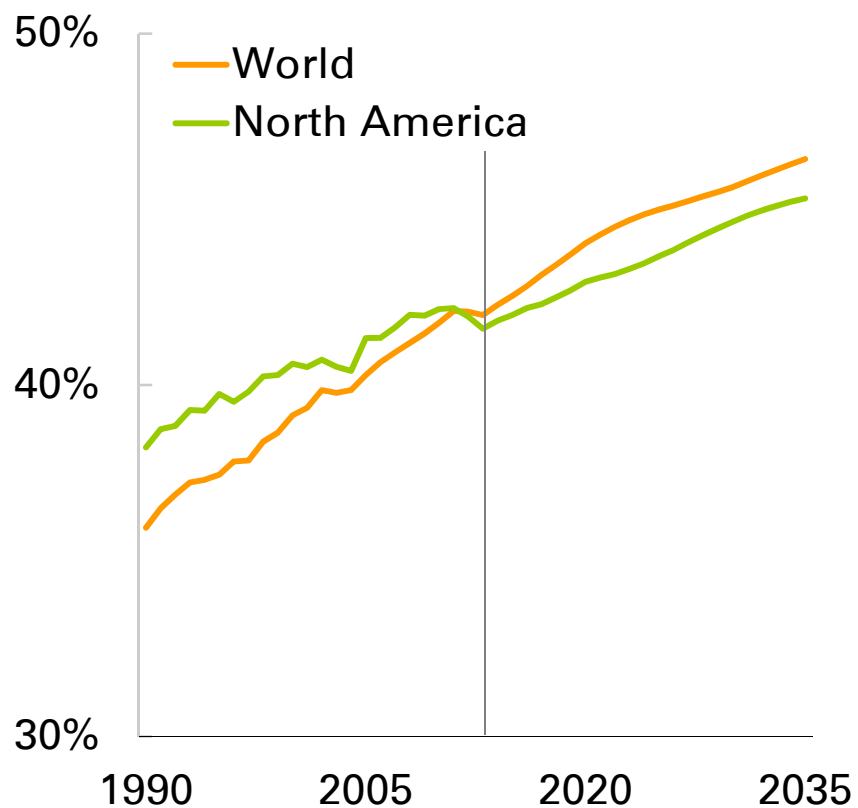


\*Includes biofuels

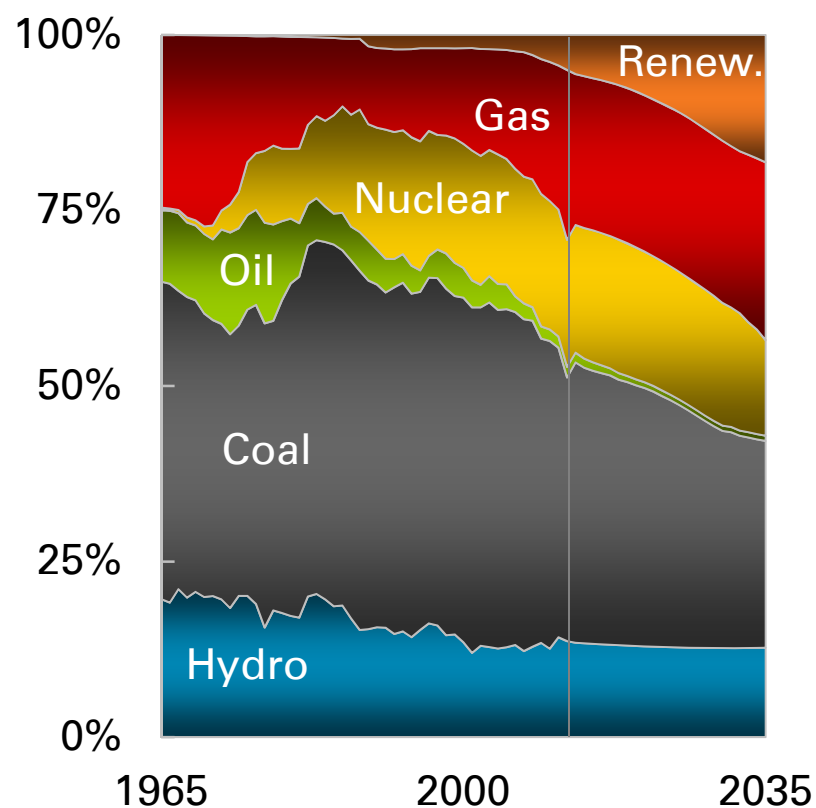


## The power sector takes an increasing share of energy use

Inputs to power as a share of total primary energy



Primary inputs to North American power

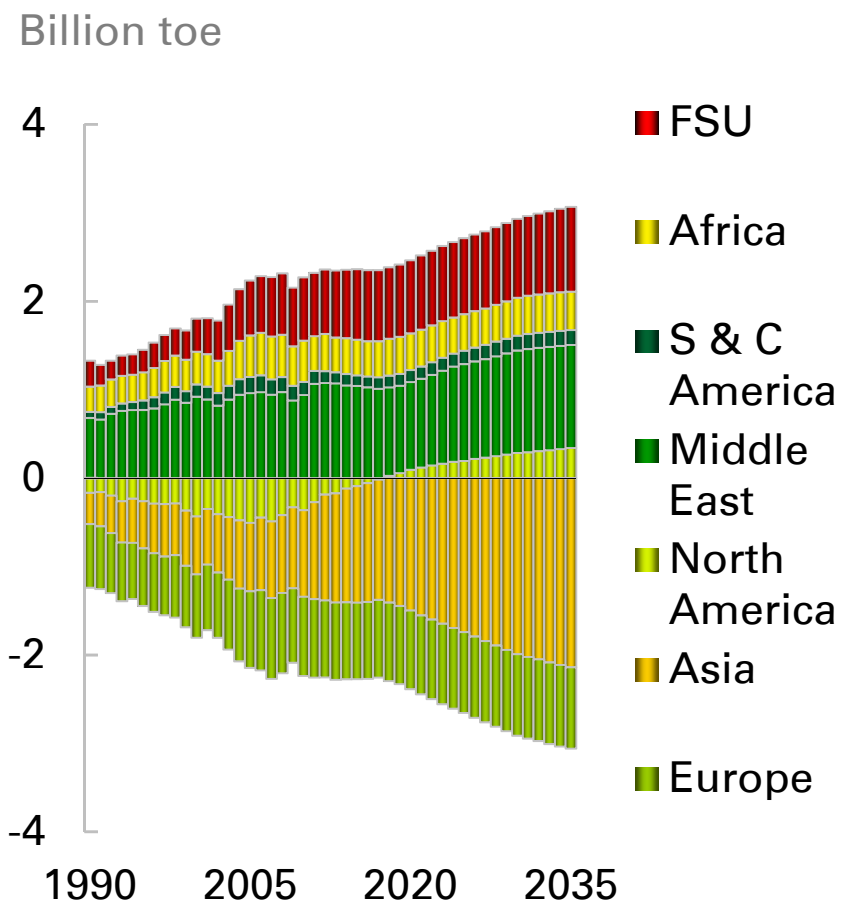




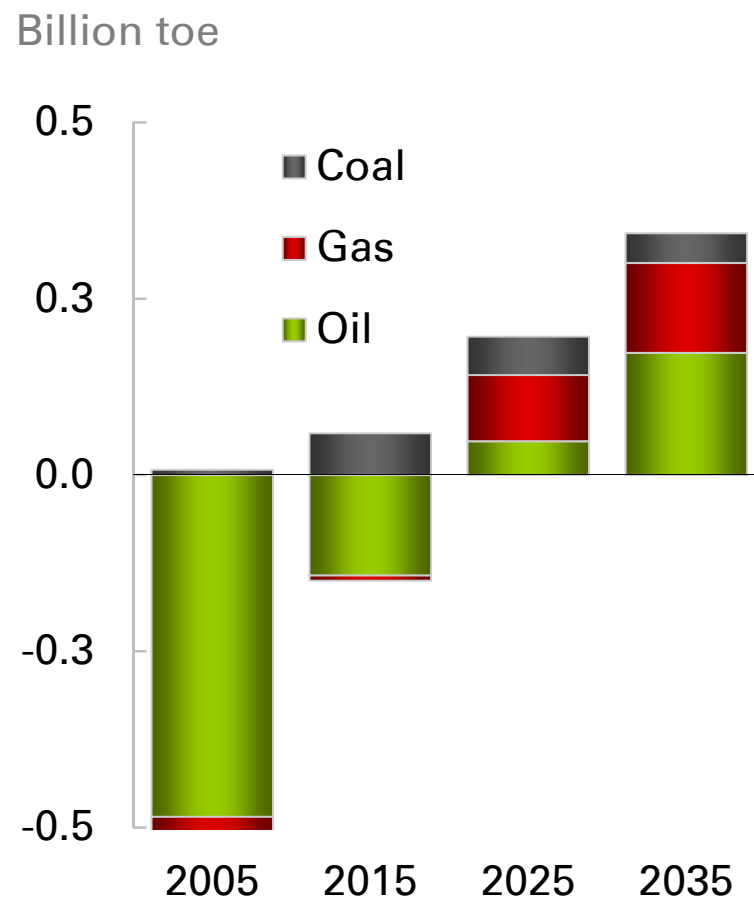


# North America switches from net importer to net exporter

## Primary energy net balances



## Regional fossil fuel balances





---

Regional energy trends

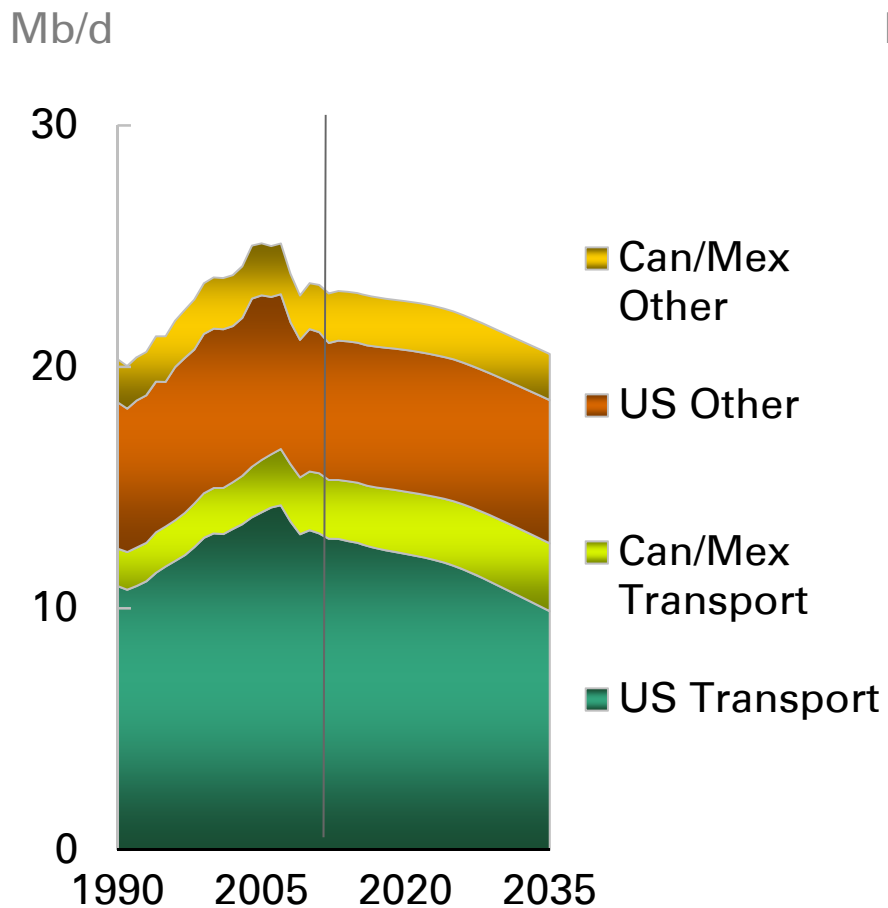
**Fuel by fuel**

Carbon emissions and the fuel mix

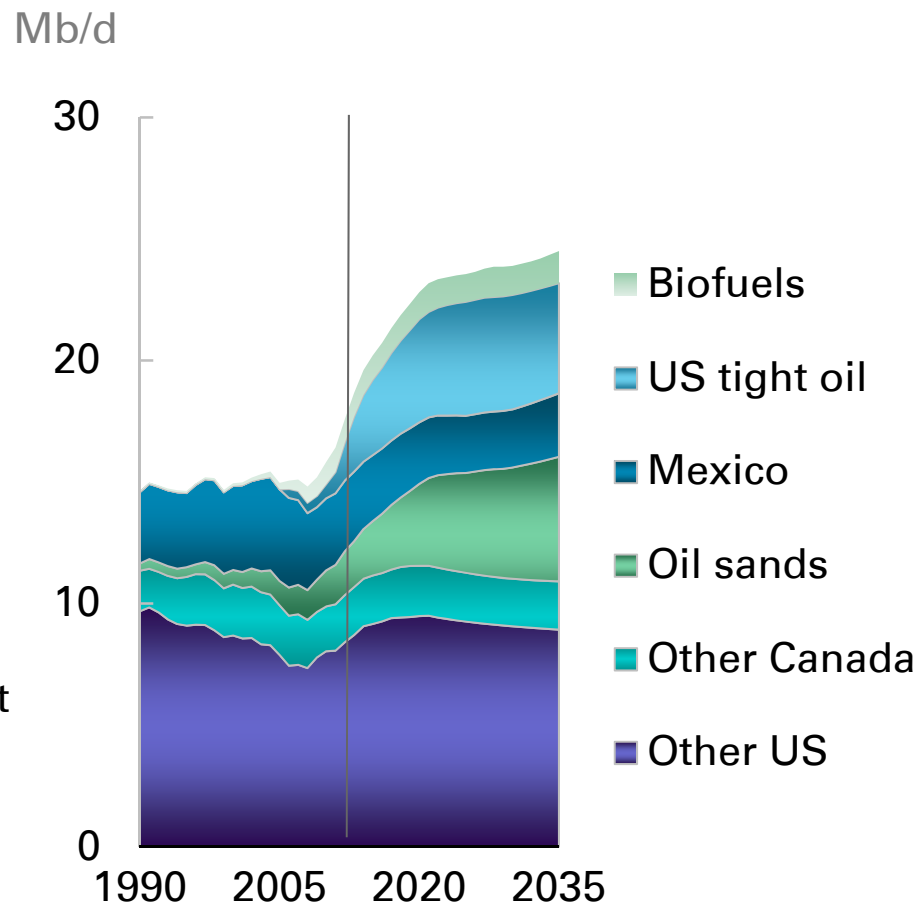


# Oil: Falling transport demand and rising unconventional

## Liquids demand by sector

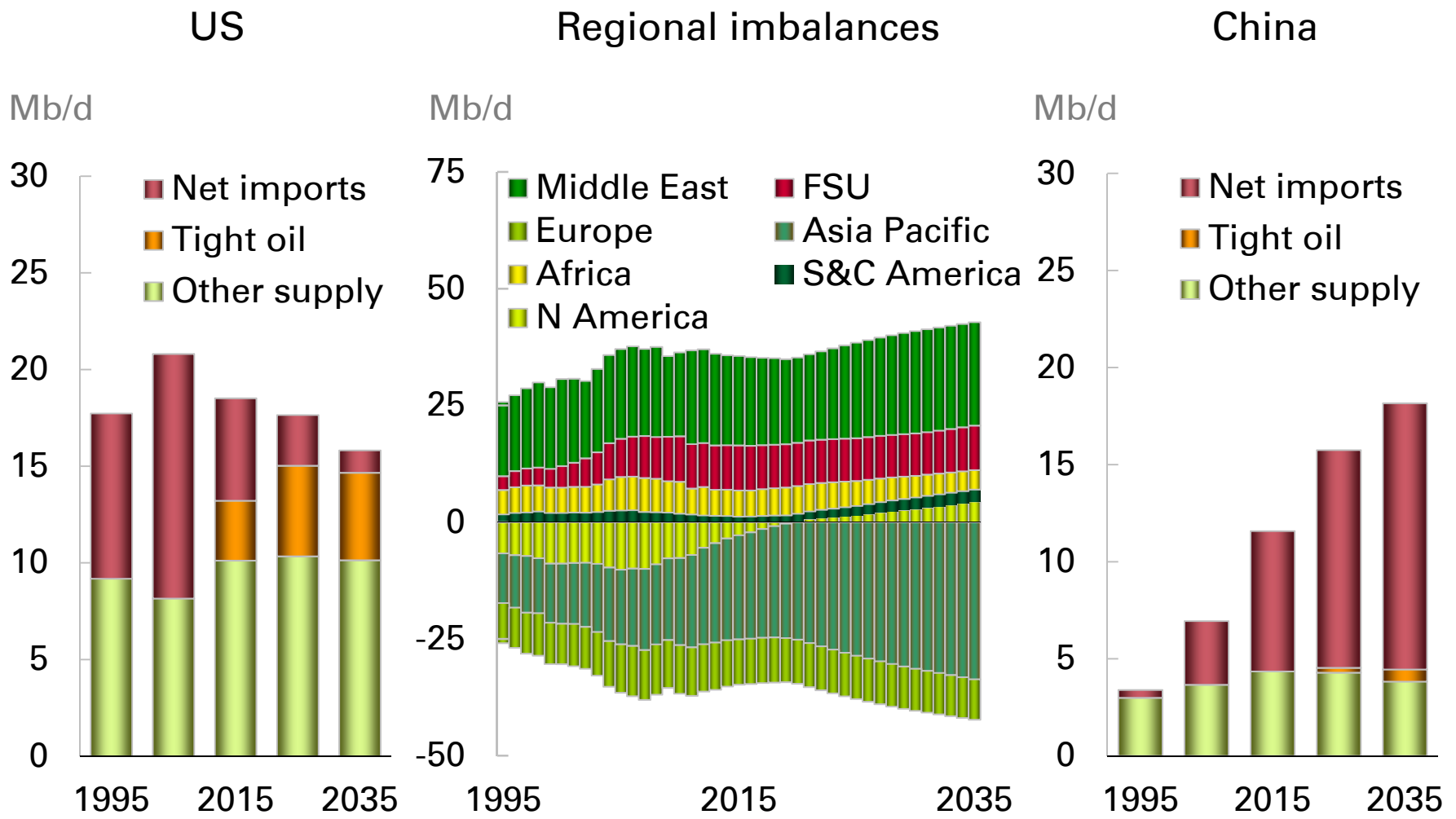


## Liquids supply by source





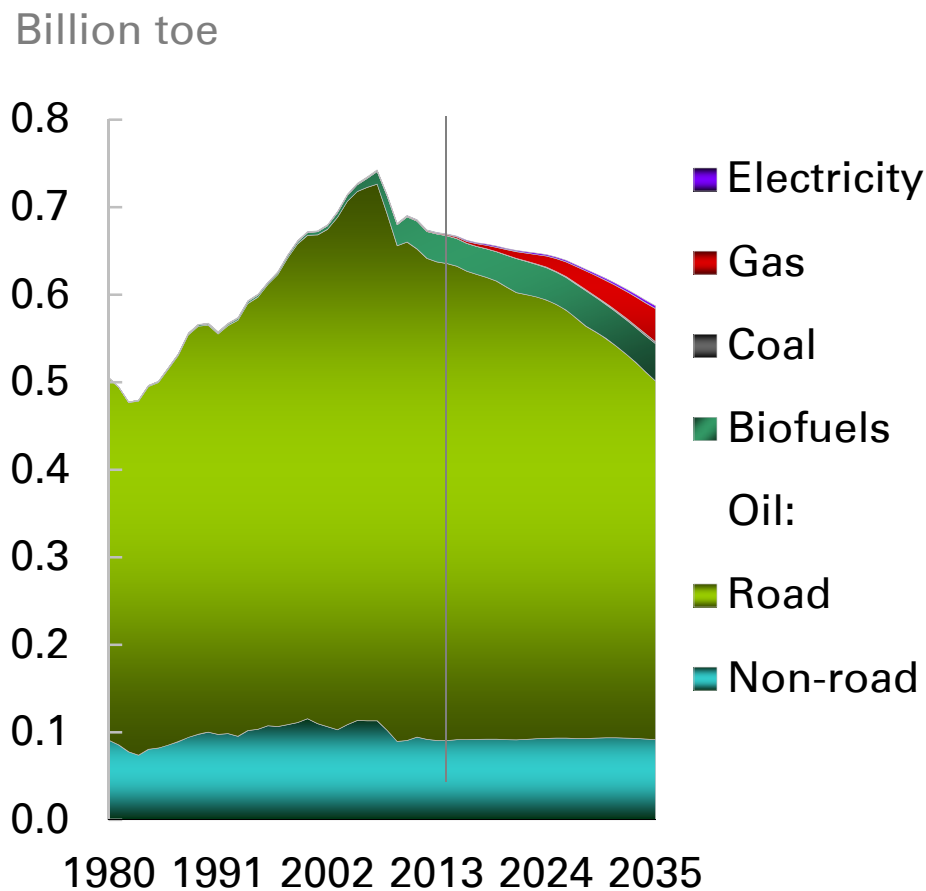
# Oil trade continues to shift from West to East



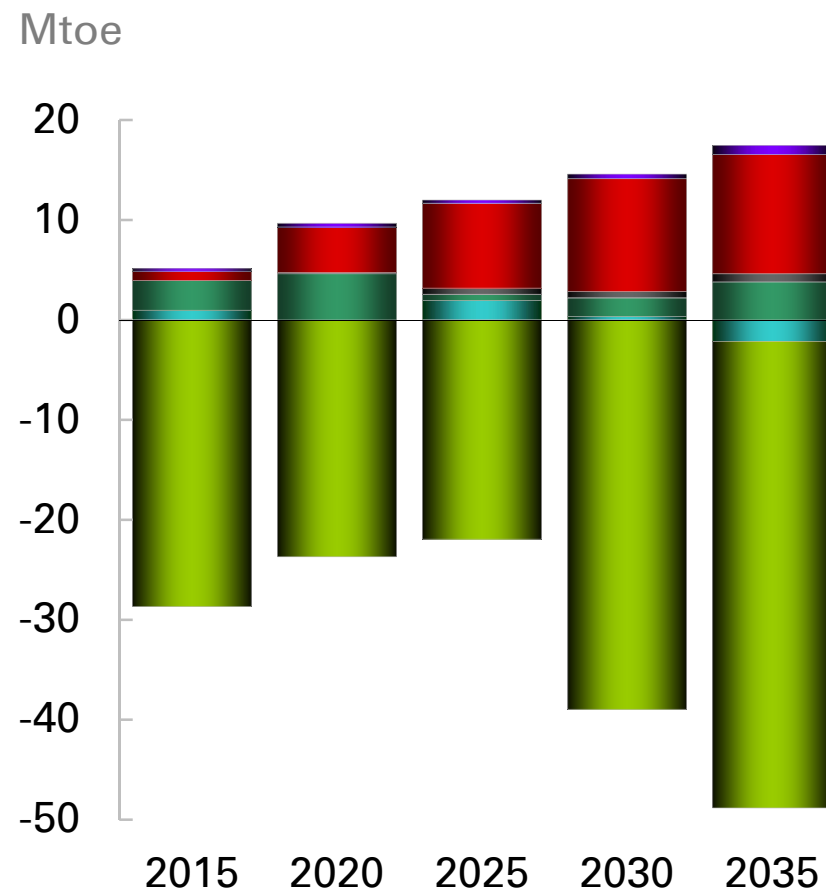


# Regional transport demand declines driven by fuel economy

## Transport demand by fuel



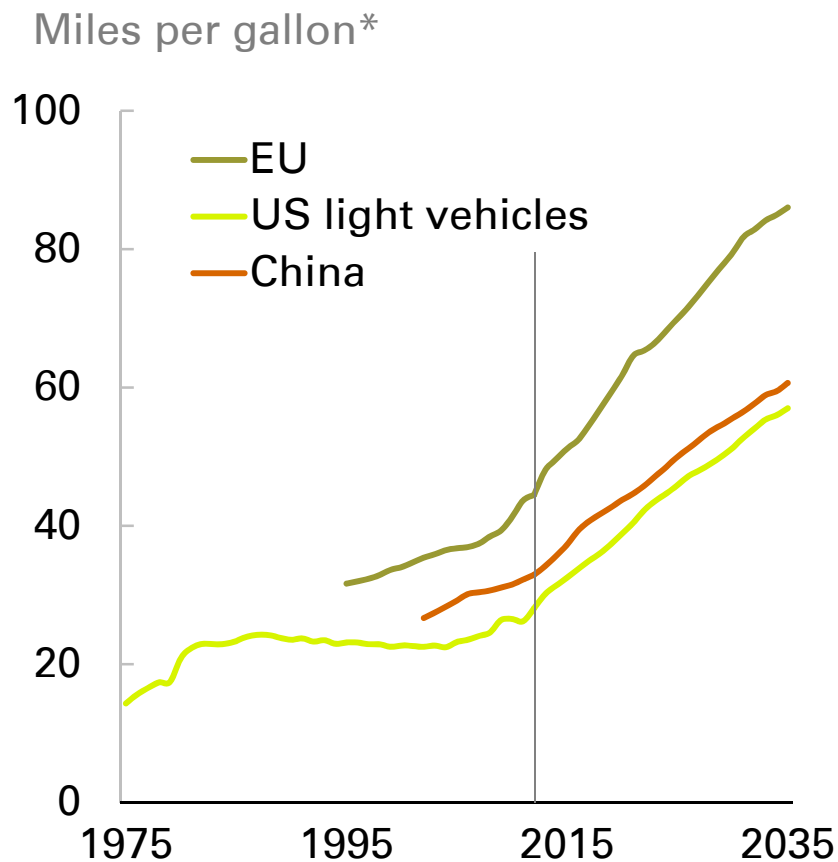
## Five year increments by fuel



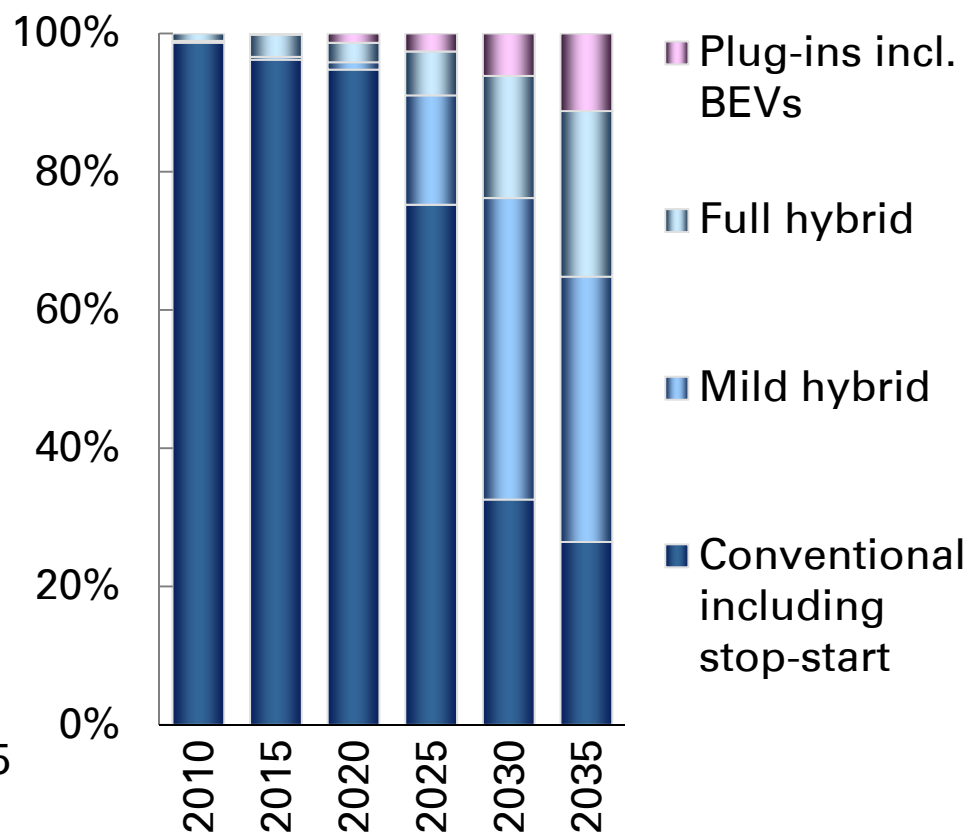


# Policy and technology enable efficiency improvements

## Fuel economy of new cars



## Vehicles sales by type

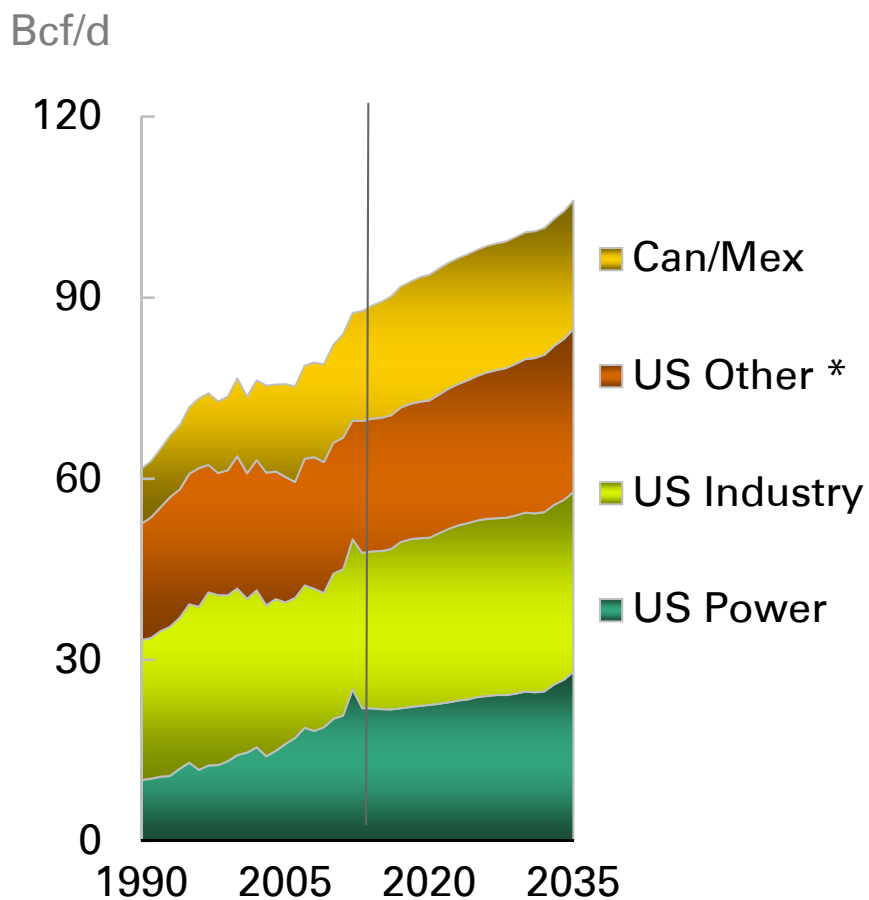


\*New European Driving Cycle Basis



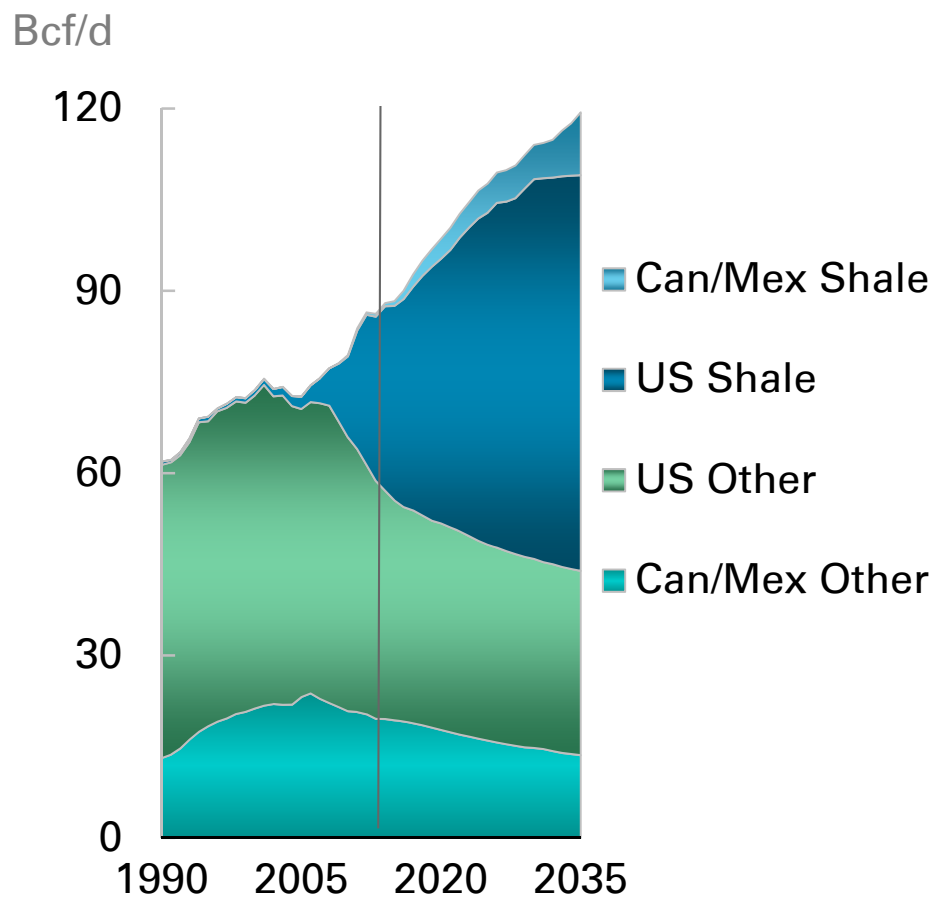
# US natural gas use rises in all sectors; shale dominates supply

## Gas demand by sector



\*Includes transport

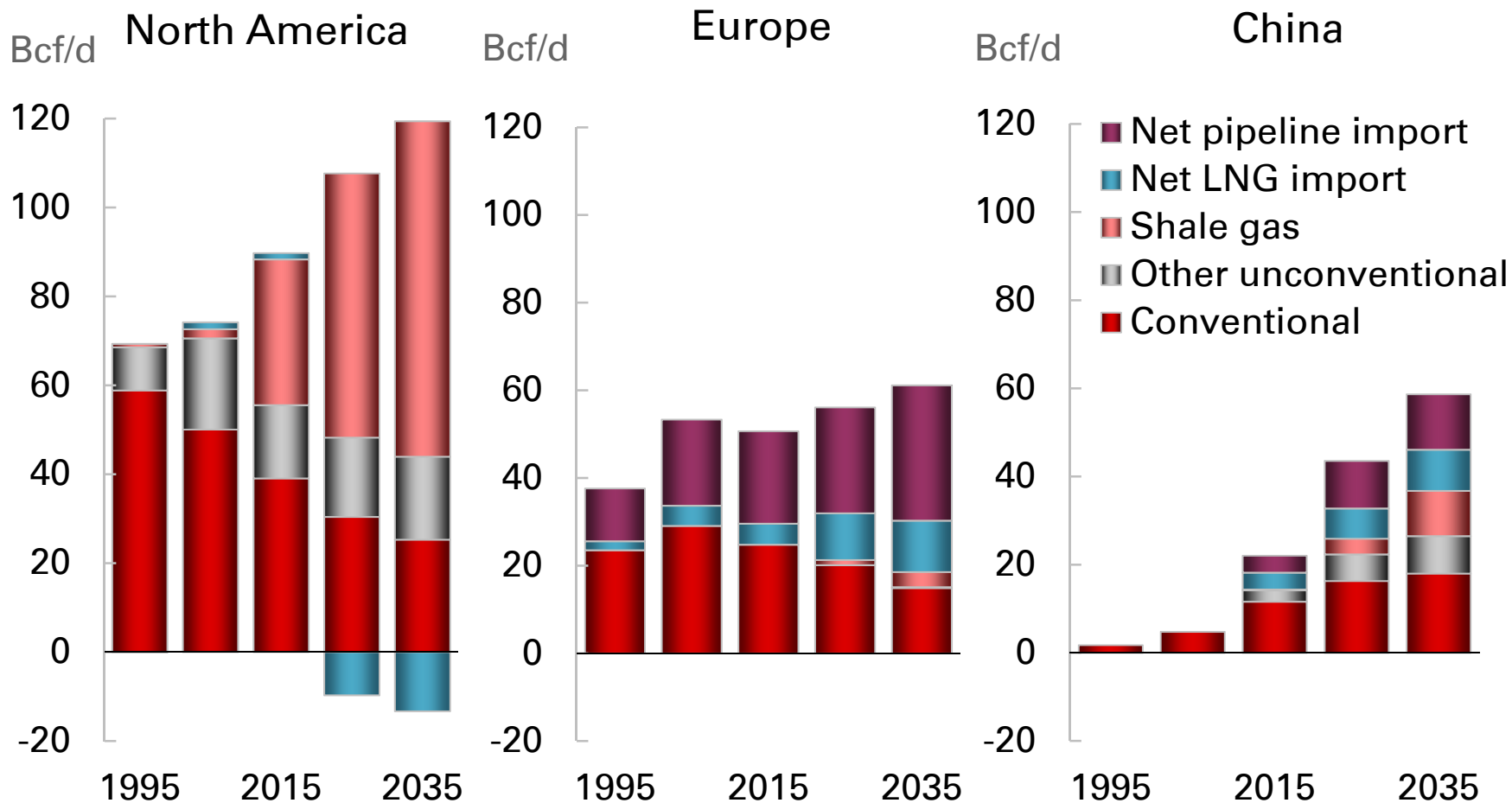
## Gas supply by source





# Different regional prospects for unconventional gas and trade

## Sources of gas supply by region



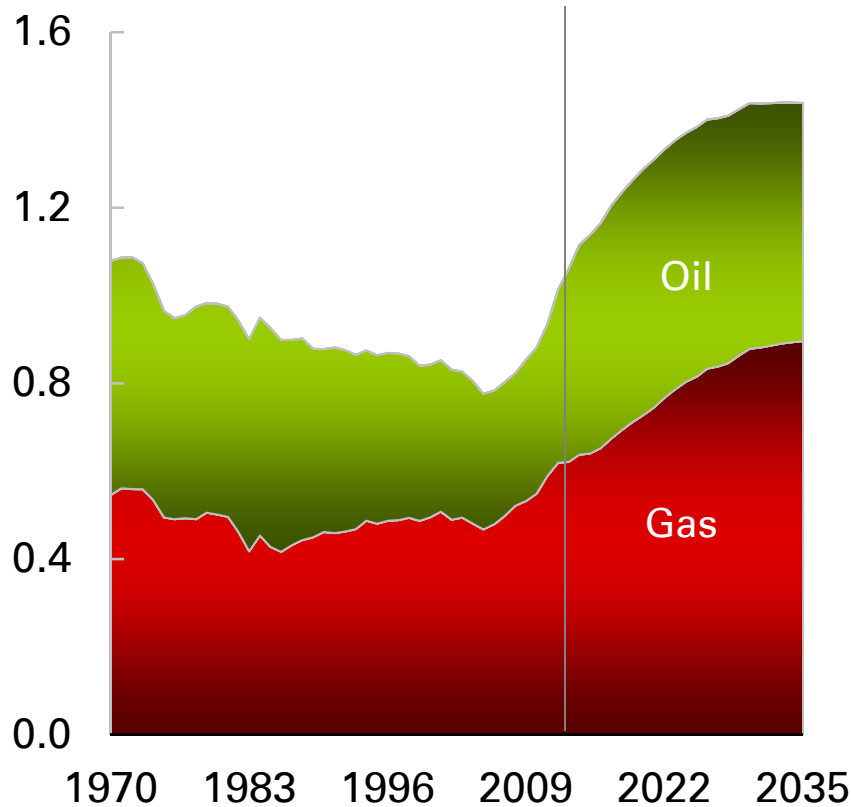


# The US shale revolution: An example of market adjustment

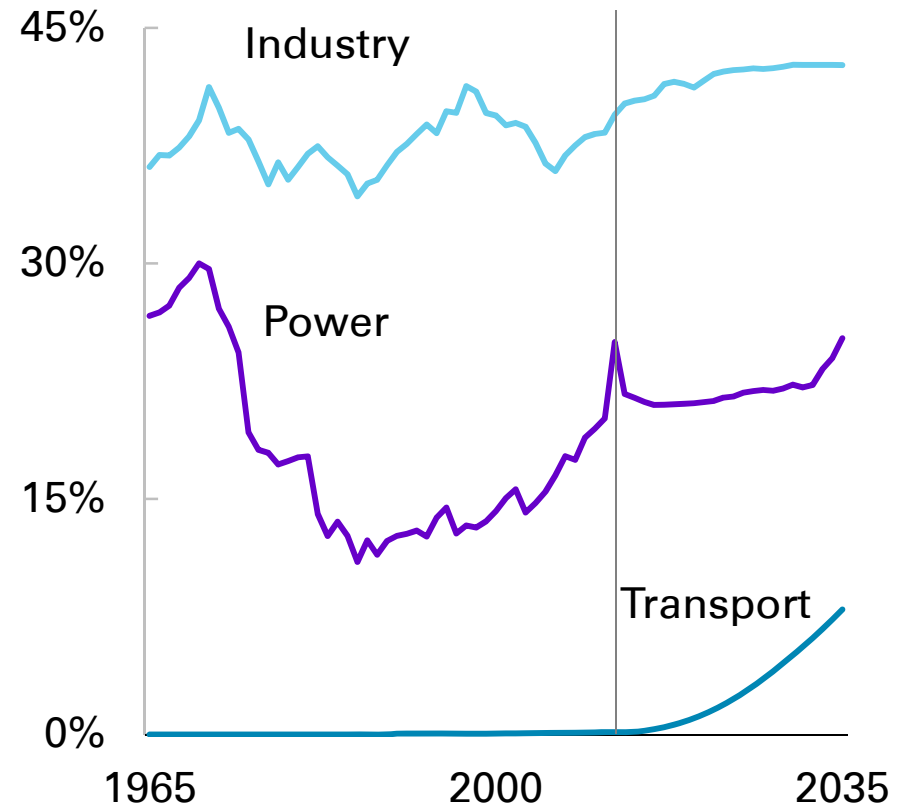


## US oil and gas supply

Billion toe



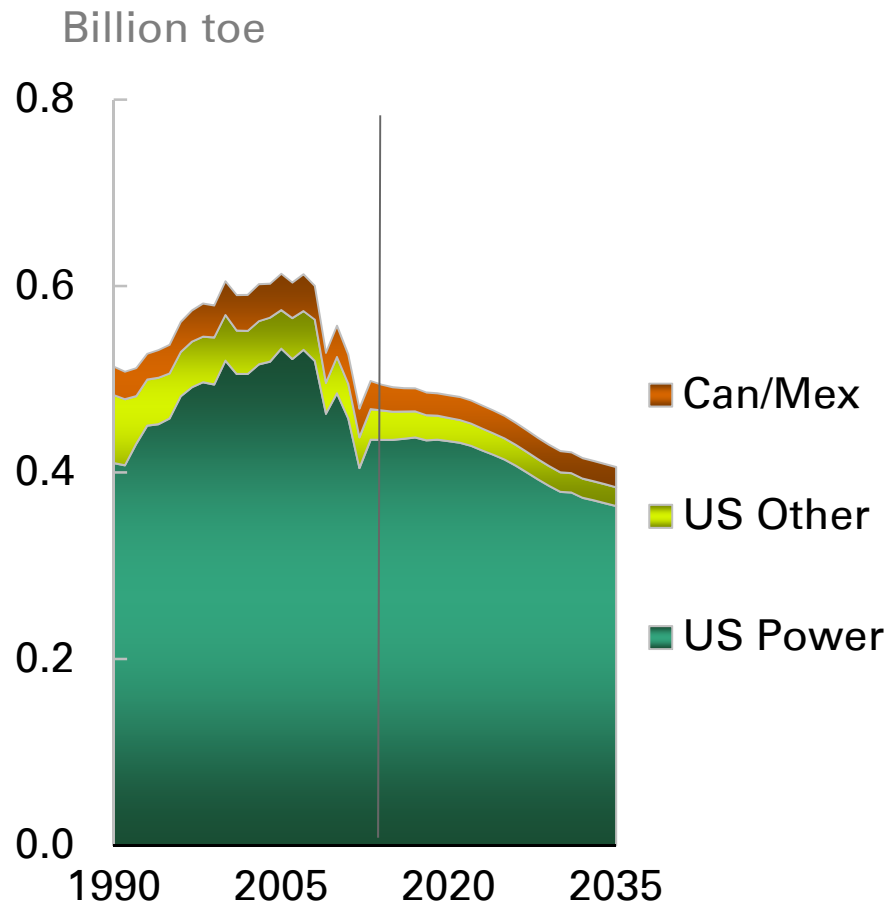
## Gas share of US sector demand



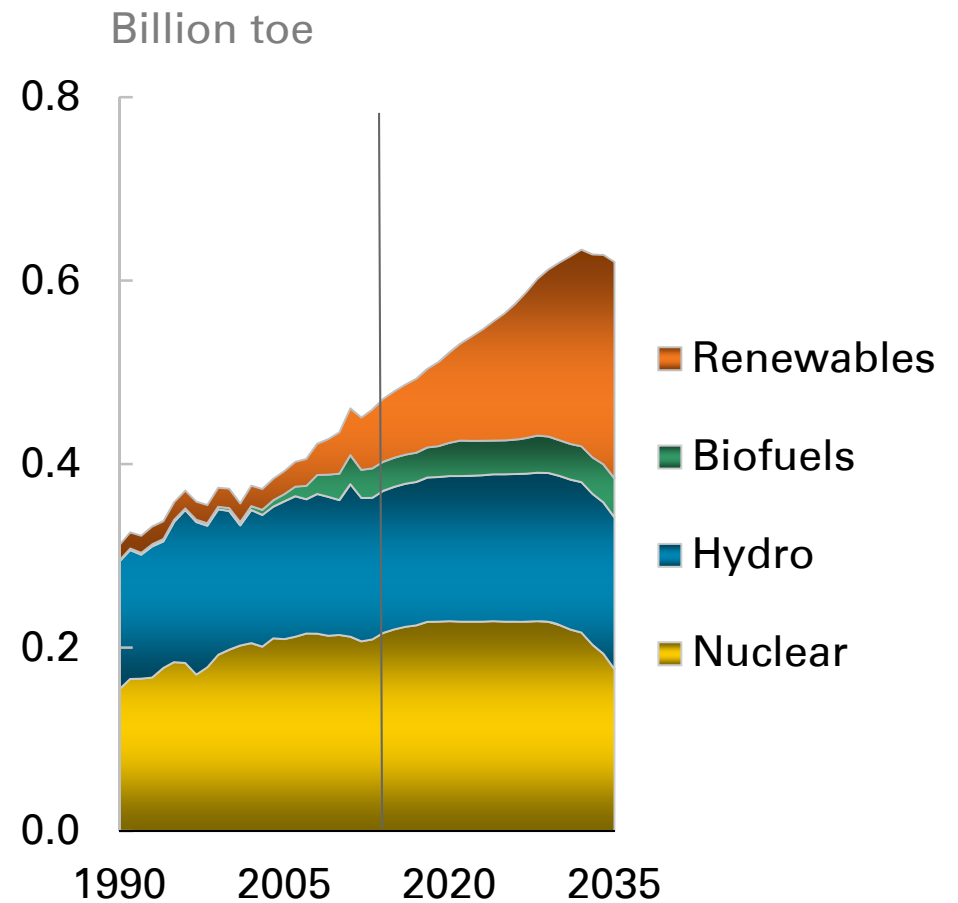


# North American coal demand declines; renewables expand

## Coal demand by sector



## Non-fossil fuel demand





---

Regional energy trends

Fuel by fuel

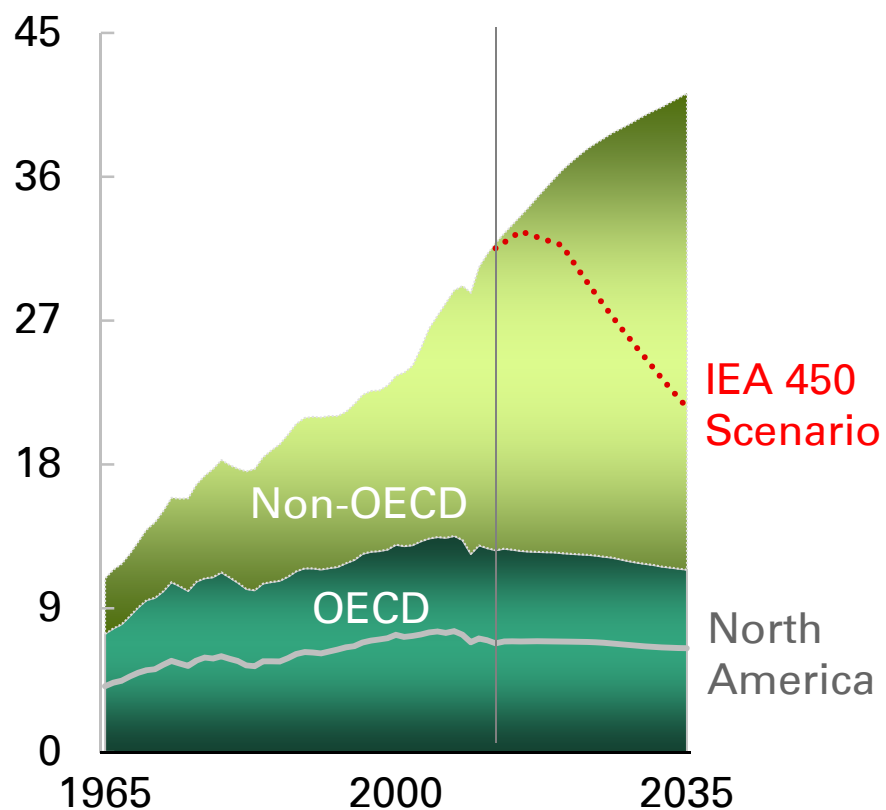
**Carbon emissions and the fuel mix**



# CO<sub>2</sub>: Emissions from energy rise globally, fall in North America

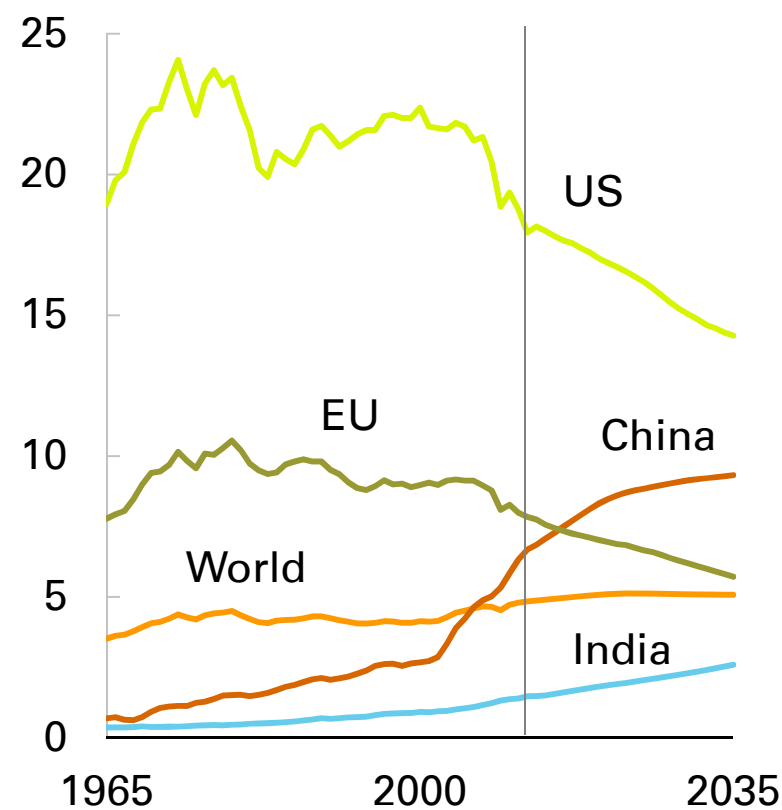
## Emissions by region

Billion tonnes CO<sub>2</sub>



## Emissions per capita

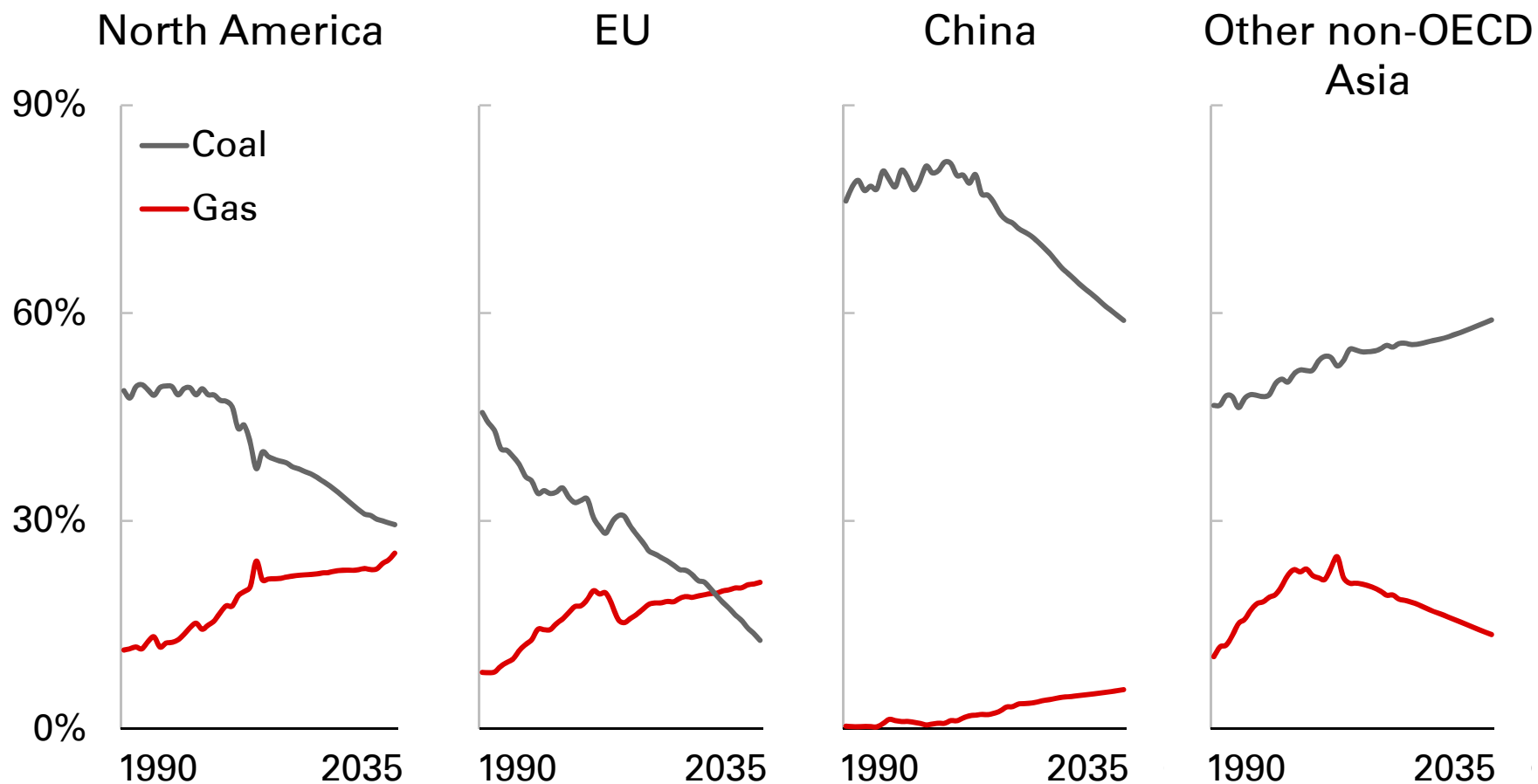
Tonnes CO<sub>2</sub>





## Power sector is the main driver of regional fuel mix changes

### Share of power sector fuel consumption

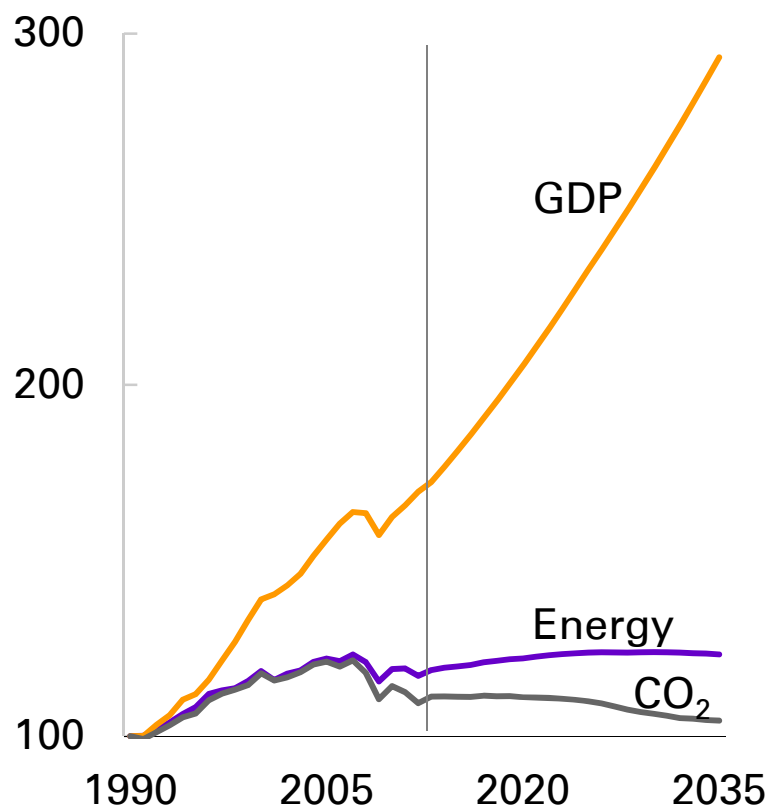




# Efficiency, not fuel mix, restrains North American emissions

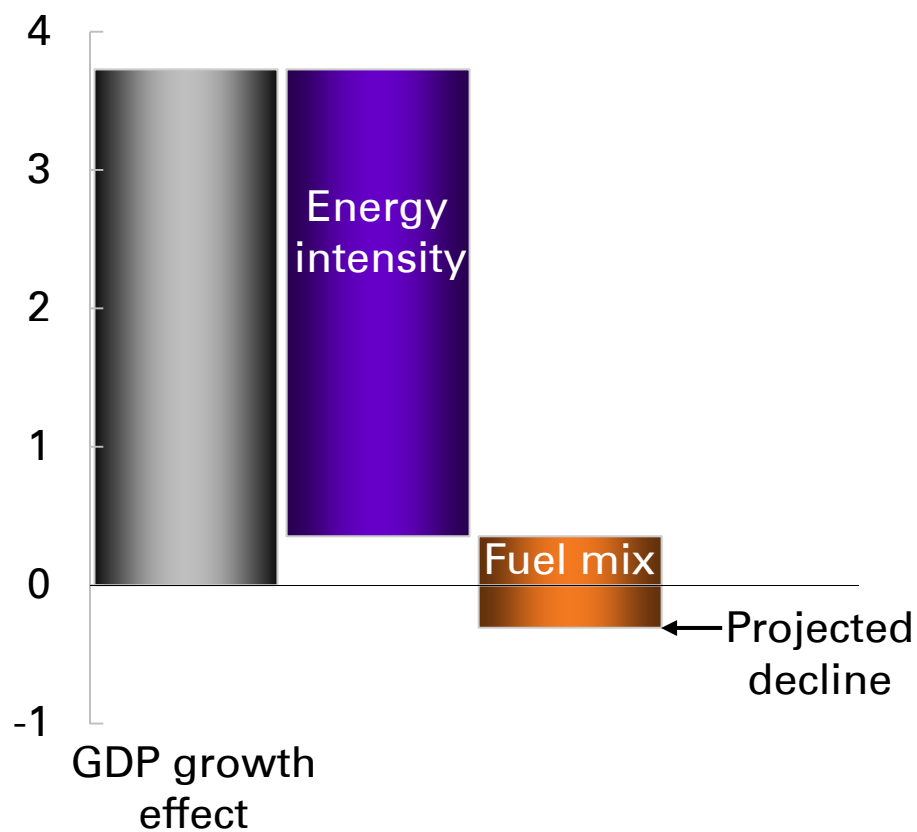
## GDP, energy and emissions

Index: 1990 = 100



## Emissions growth 2012 to 2035

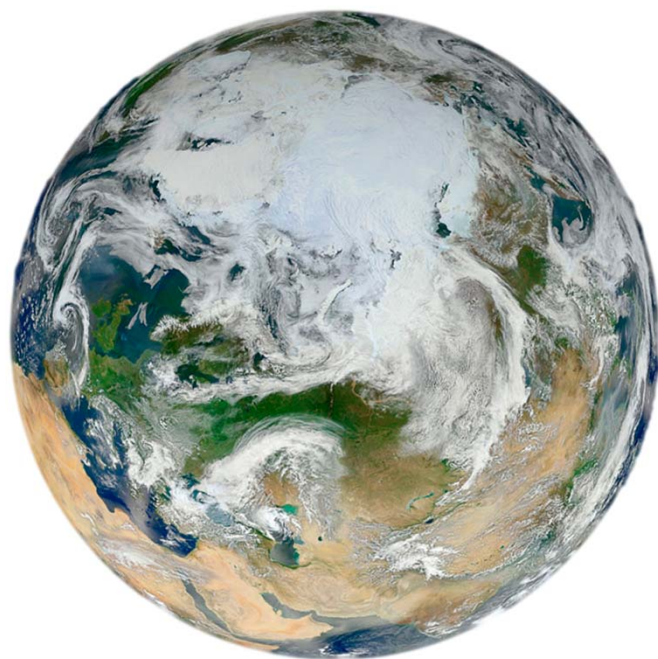
Billion tonnes CO<sub>2</sub>



# Conclusion

---

## Meeting the global/North American energy challenge



- Sufficient and available?
  - Yes – new energy sources and efficiency improvements
  - North America leads the way
- Secure and reliable?
  - Mixed – improving for North America, a concern for others
- Sustainable?
  - Room for improvement, even with lower North American emissions