



# The Road to Energy Sustainability

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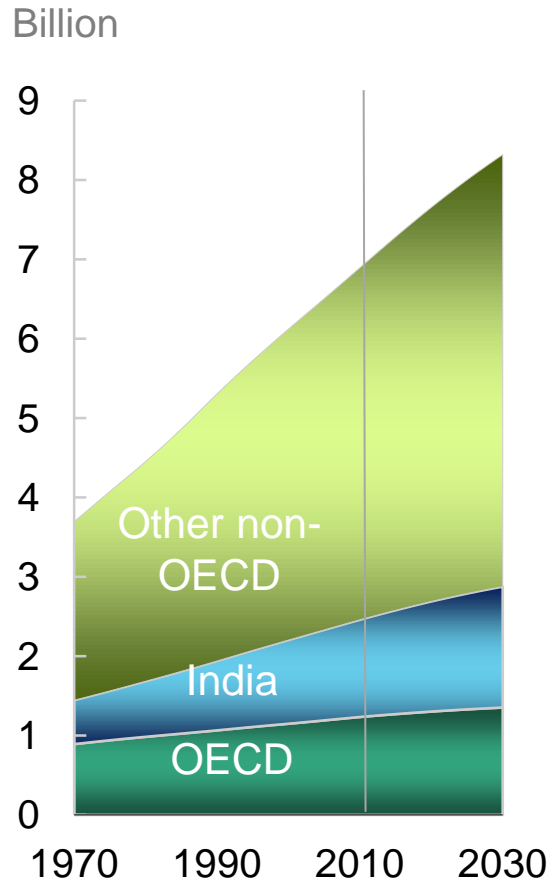


- India in the world
- Role of price signals and functioning markets
- Subsidies or efficiency improvements
- Renewables' the answer?
- Unintended consequences
- Policy (demand?) matters

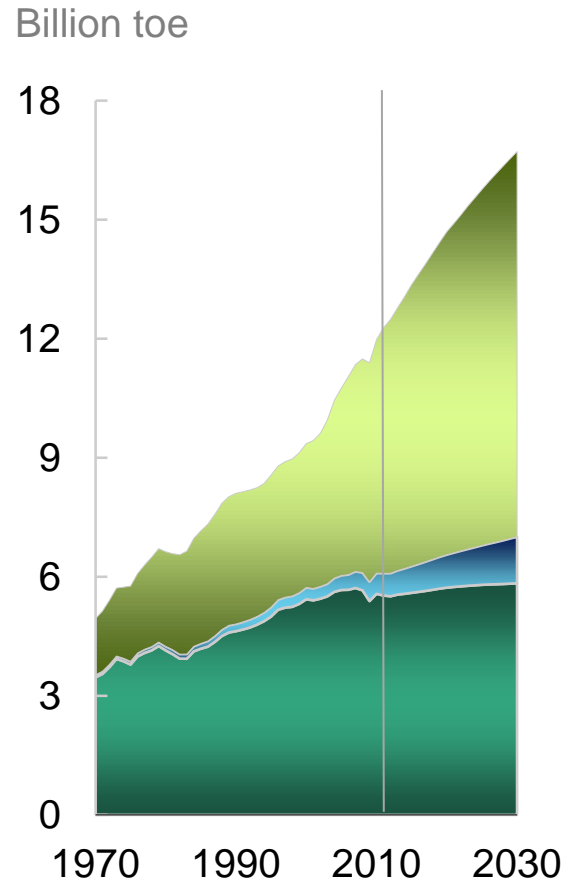
# India in the world



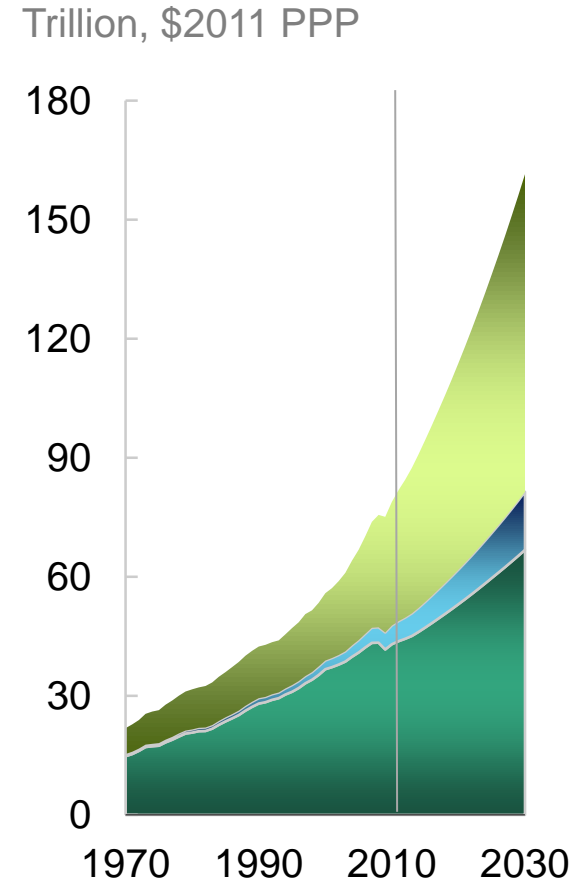
## Population



## Energy



## GDP



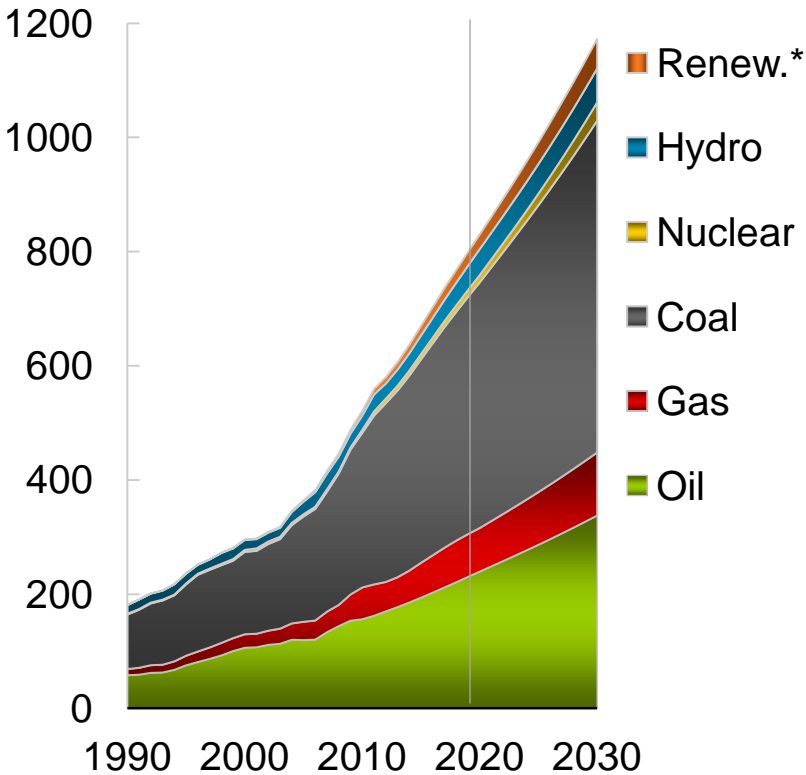
# Power leads growth, while transport leads oil



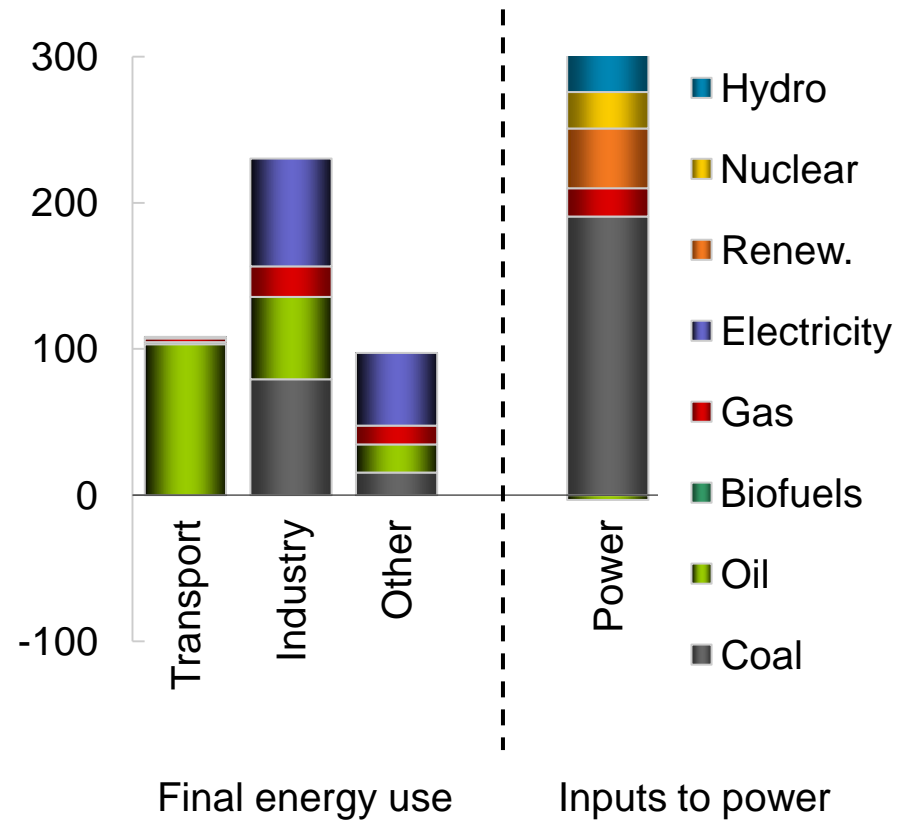
Primary energy demand by fuel

Growth by sector and fuel, 2011-2030

Mtoe



Mtoe



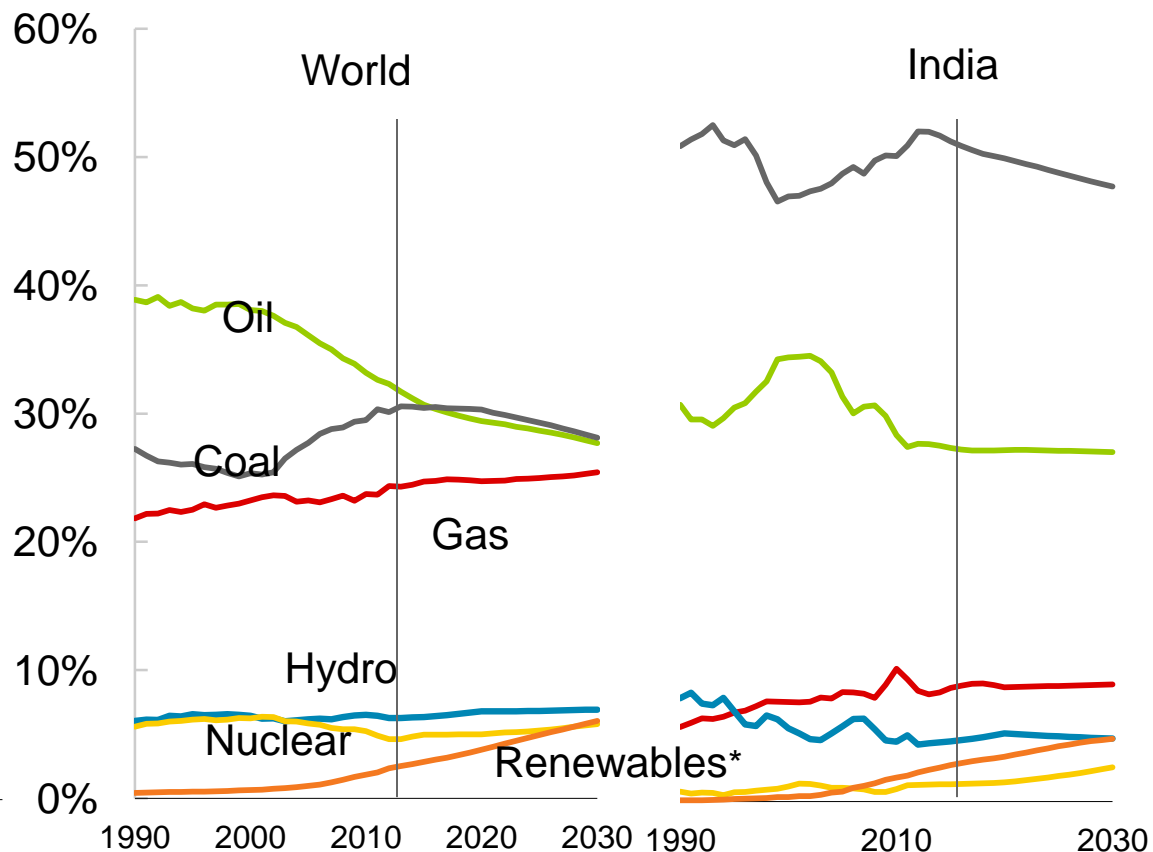
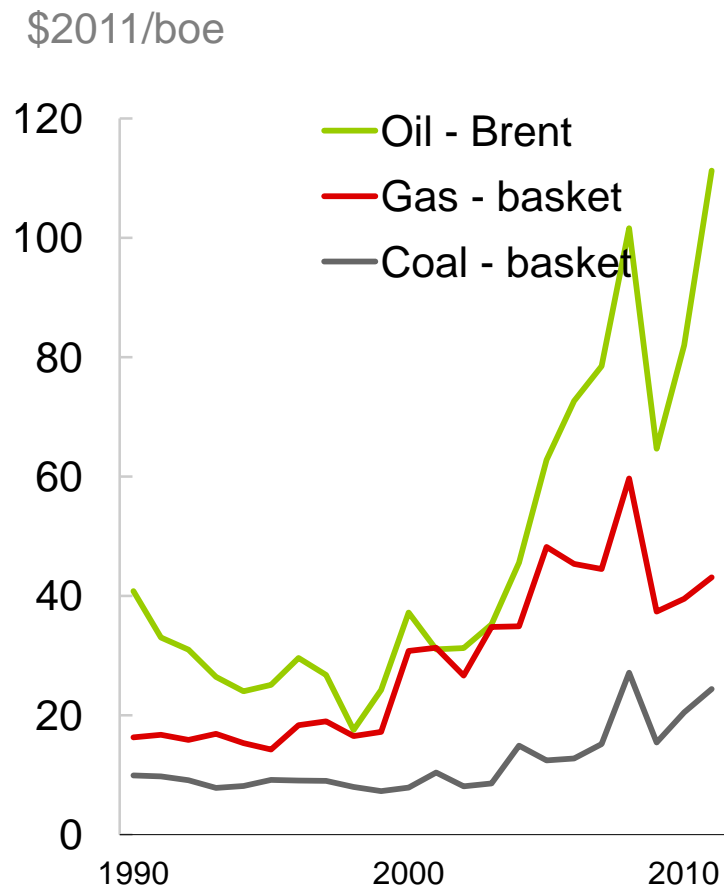
\*Includes biofuels

# Price signals matter (if you can see them...)



Energy prices

Shares of primary energy



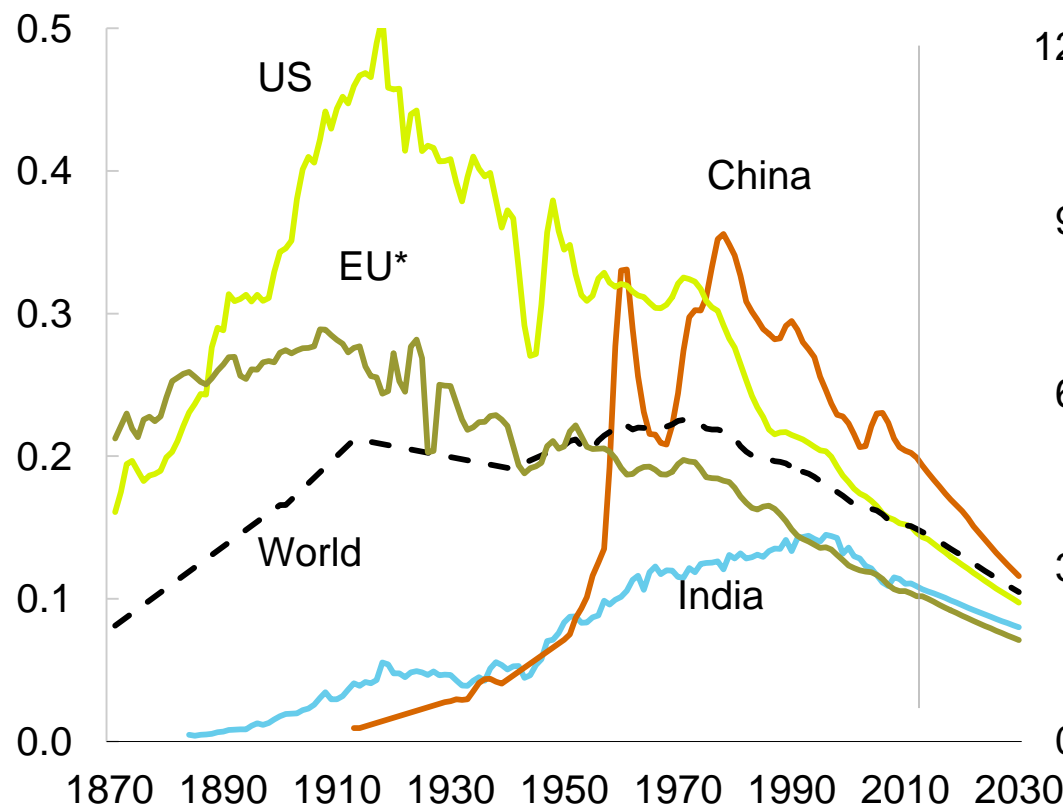
\*Includes biofuels

# Energy efficiency improvements imply lower demand



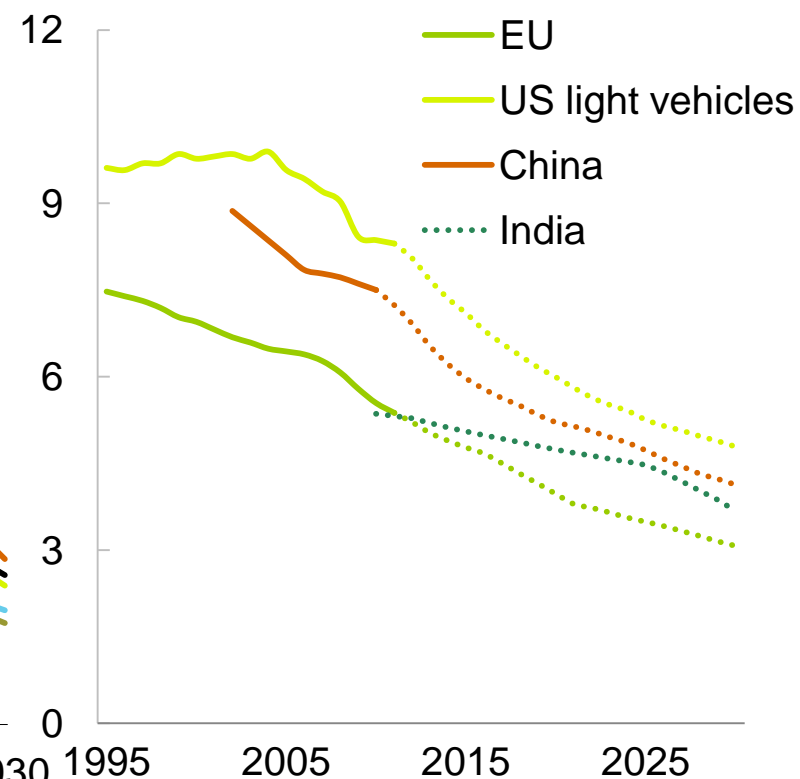
## Energy intensity by region

Toe per thousand \$2011 GDP (PPP)



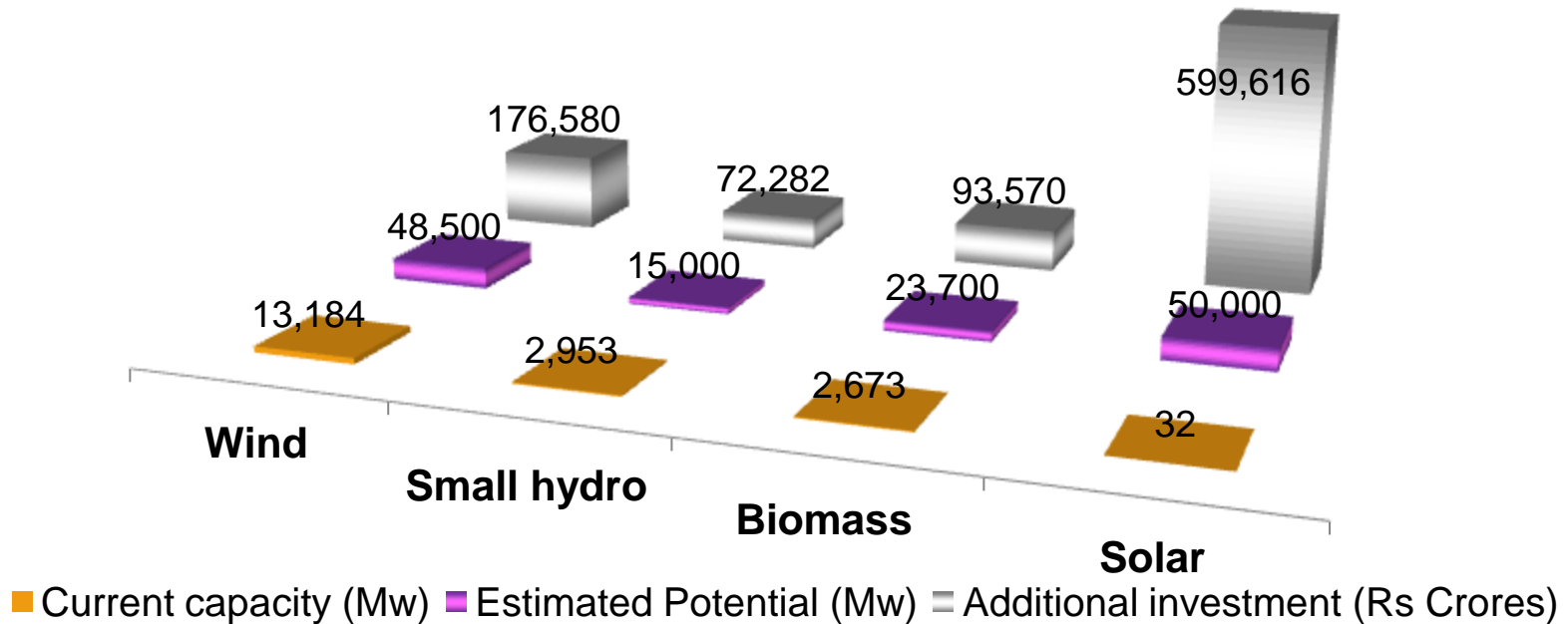
## Fuel economy of new cars

Litres per 100 km



\*Euro4 (France, Italy, Germany, UK) pre-1970

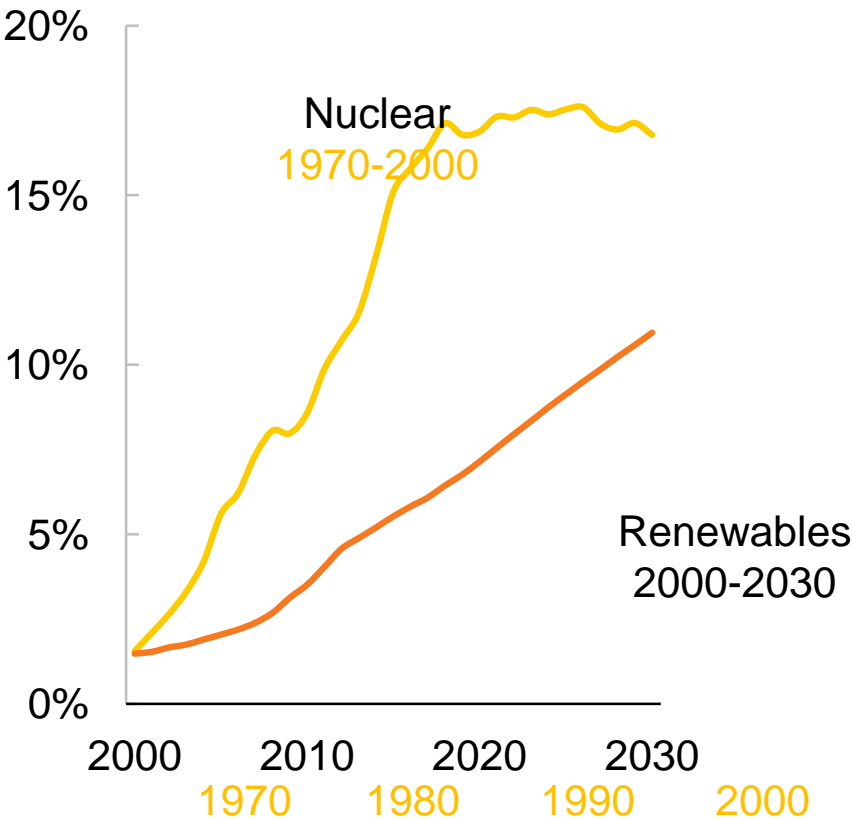
# Renewable energy potential



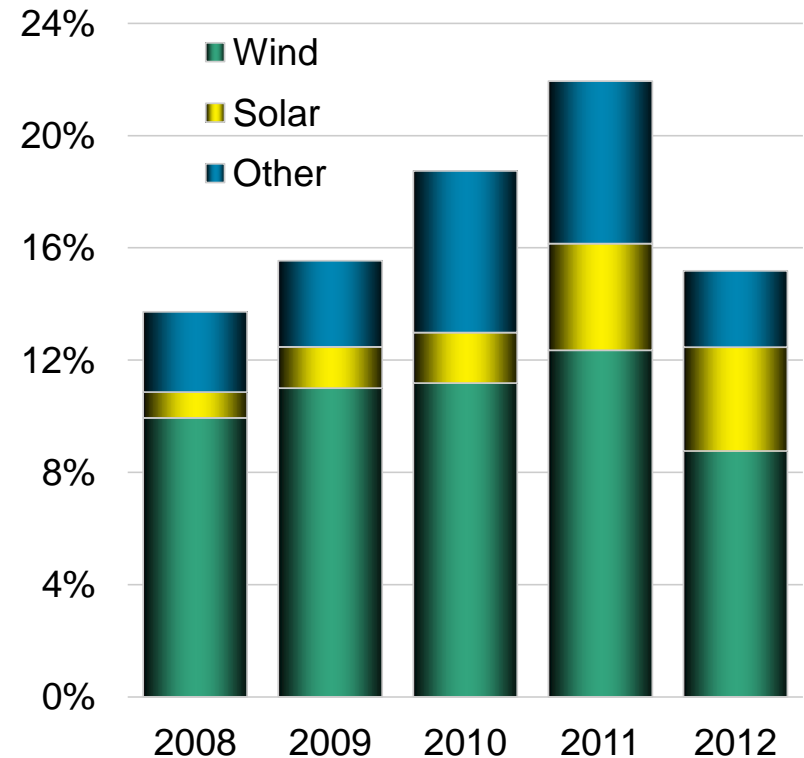
# Renewables following nuclear?



Share of power generation

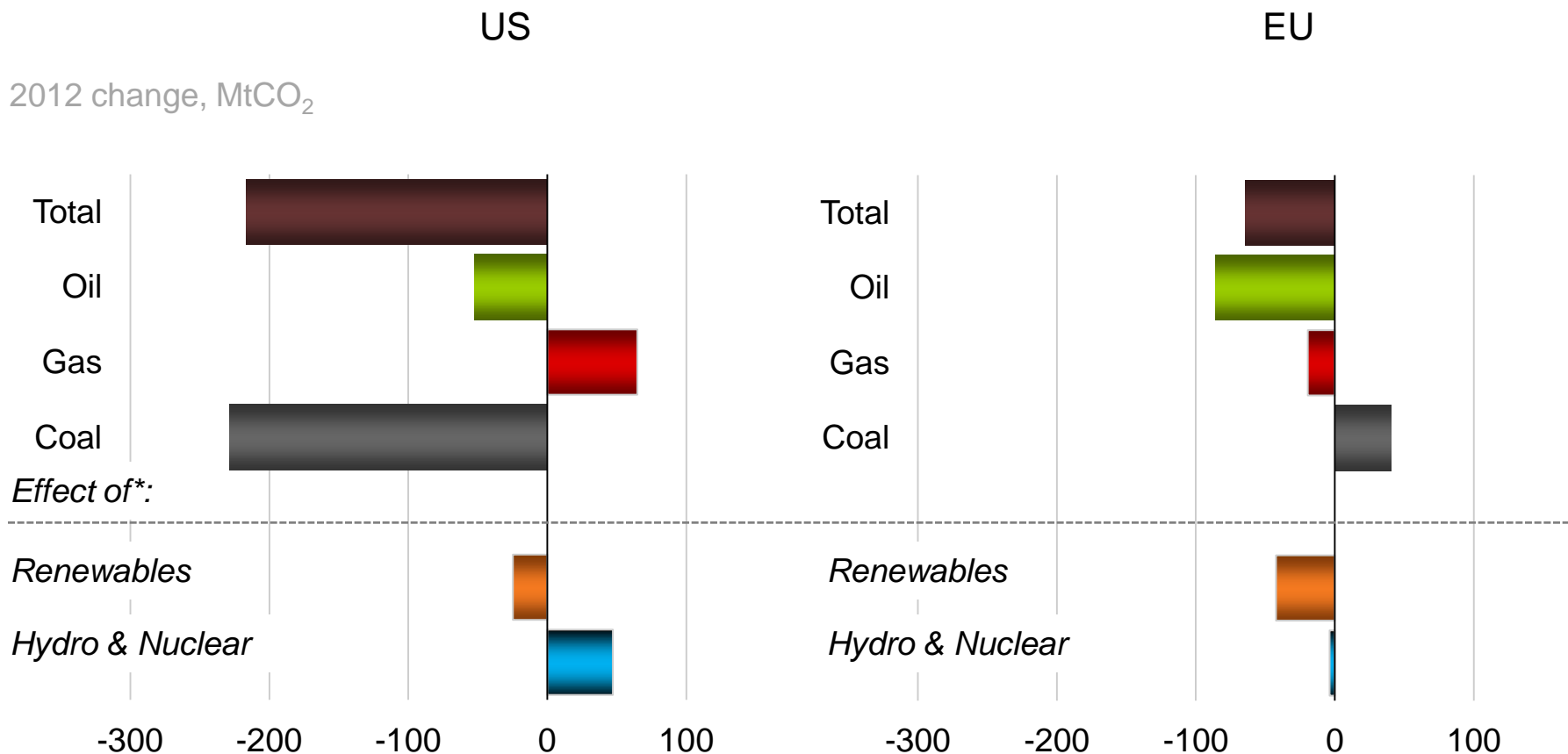


Contributions to growth



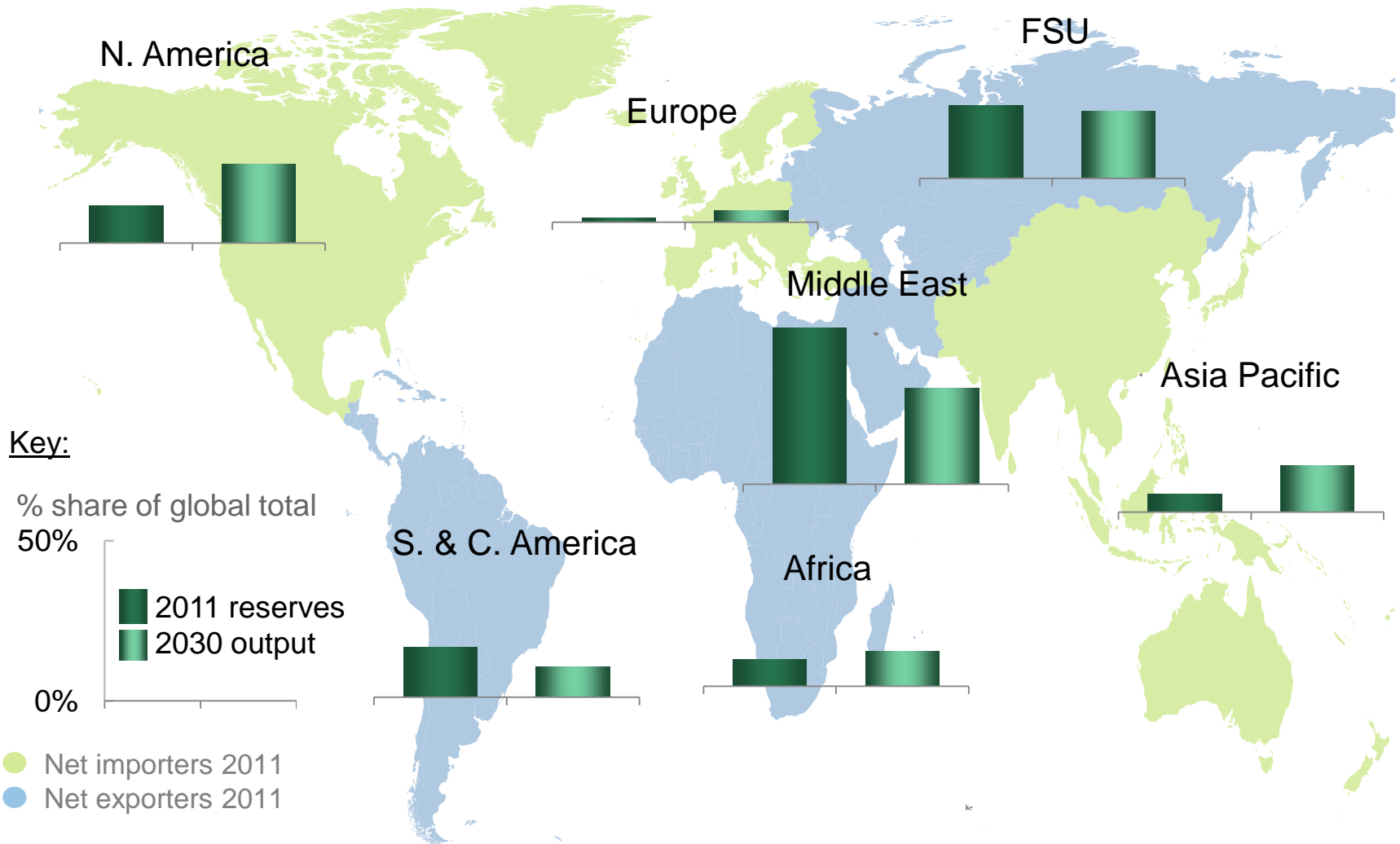


# Unintended consequences: Carbon emissions and subsidies



\* The net effect of changes in non-fossil fuels in power on emissions, based on 2011 shares of fossil fuels in power generation

# Policy matters





Thank you