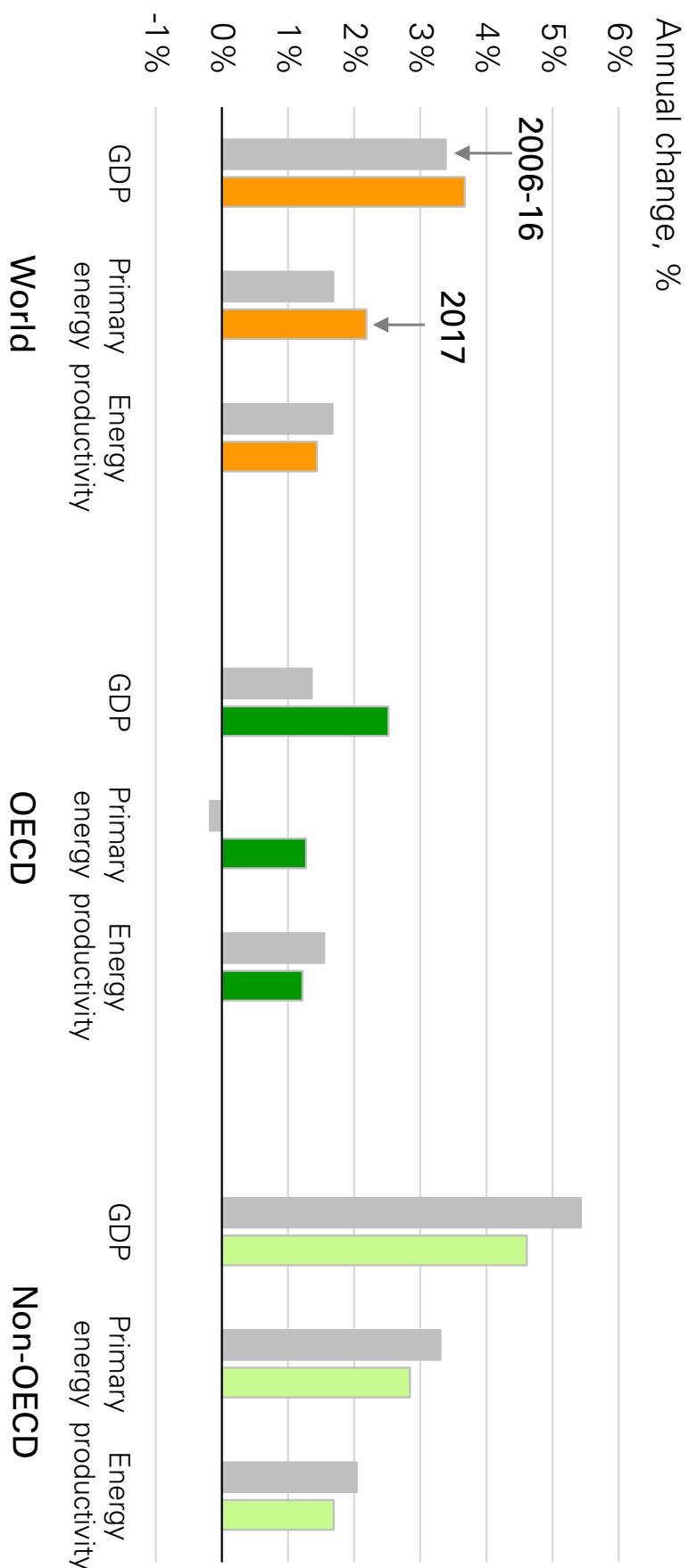


# Energy in 2017: two steps forward, one step back

Spencer Dale, group chief economist



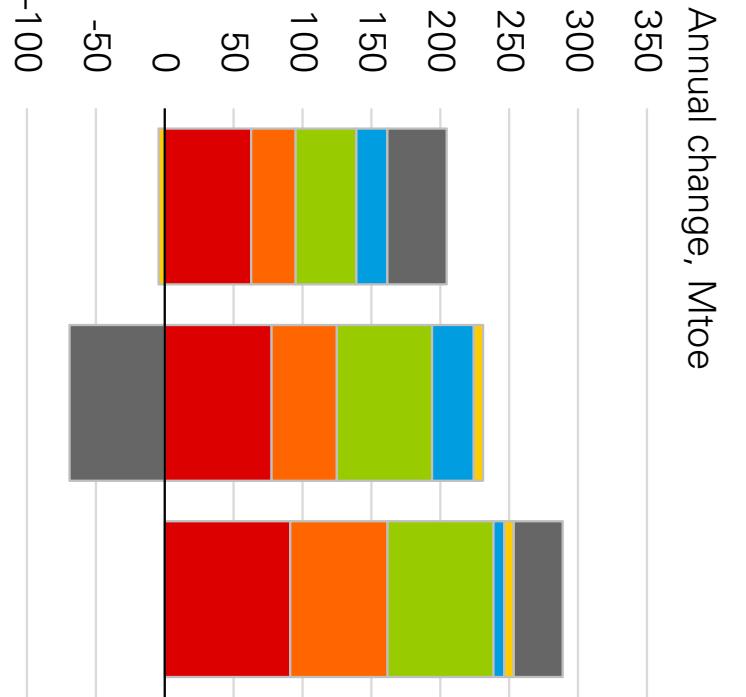
# Growth in GDP and energy



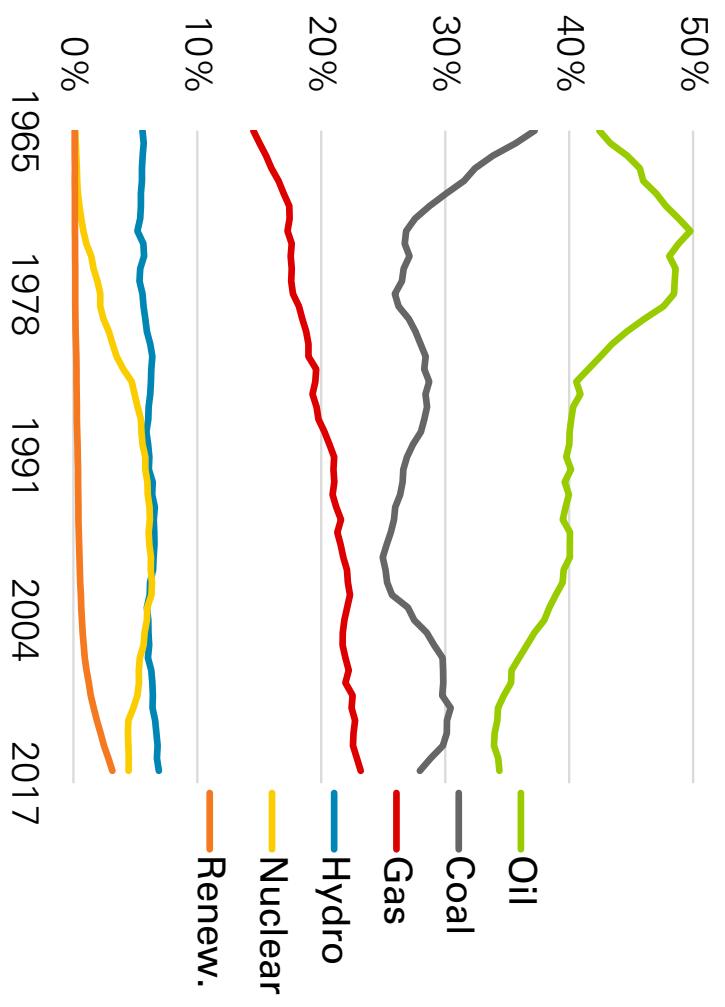
# Primary energy fuel mix



## Consumption growth by fuel



## Shares of primary energy consumption

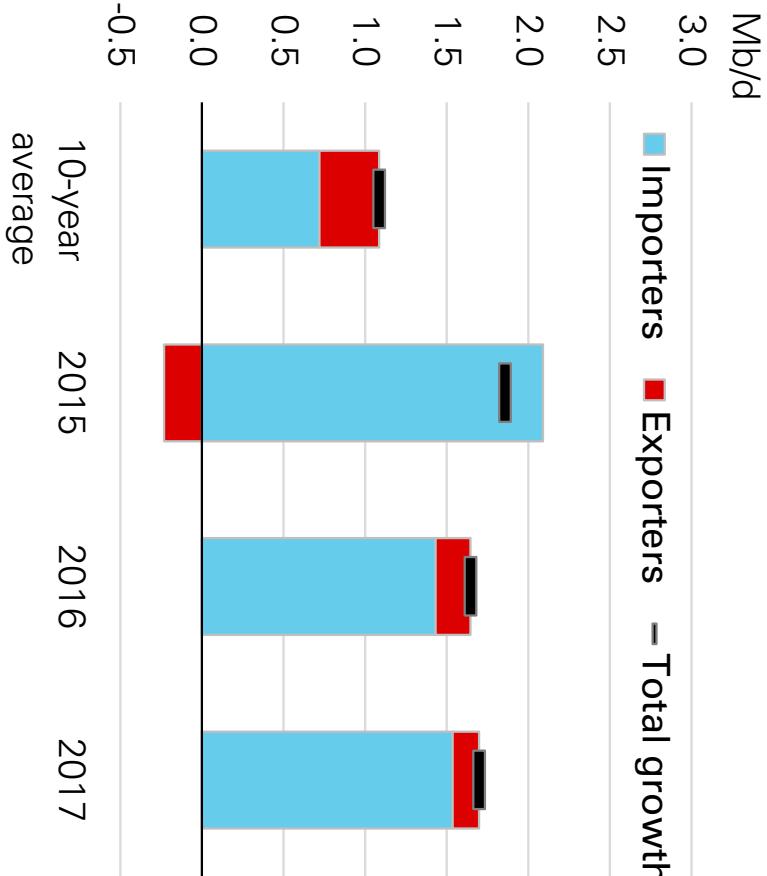


Note: Oil includes biofuels

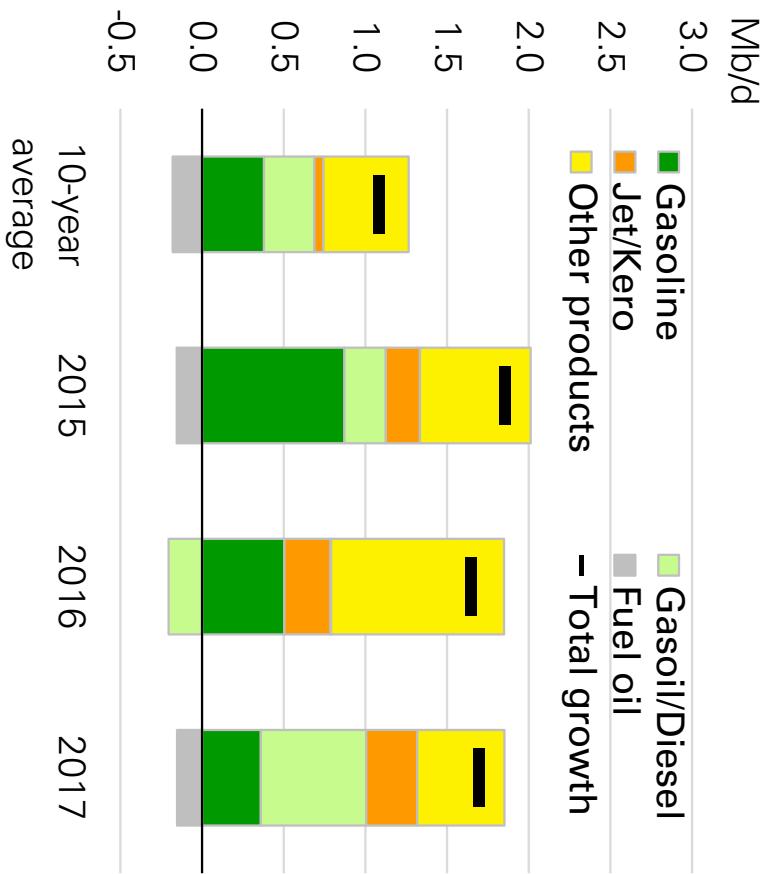
# Oil

# Oil demand growth

## Growth by importers and exporters



## Growth by product



# Production cuts versus tight oil increases

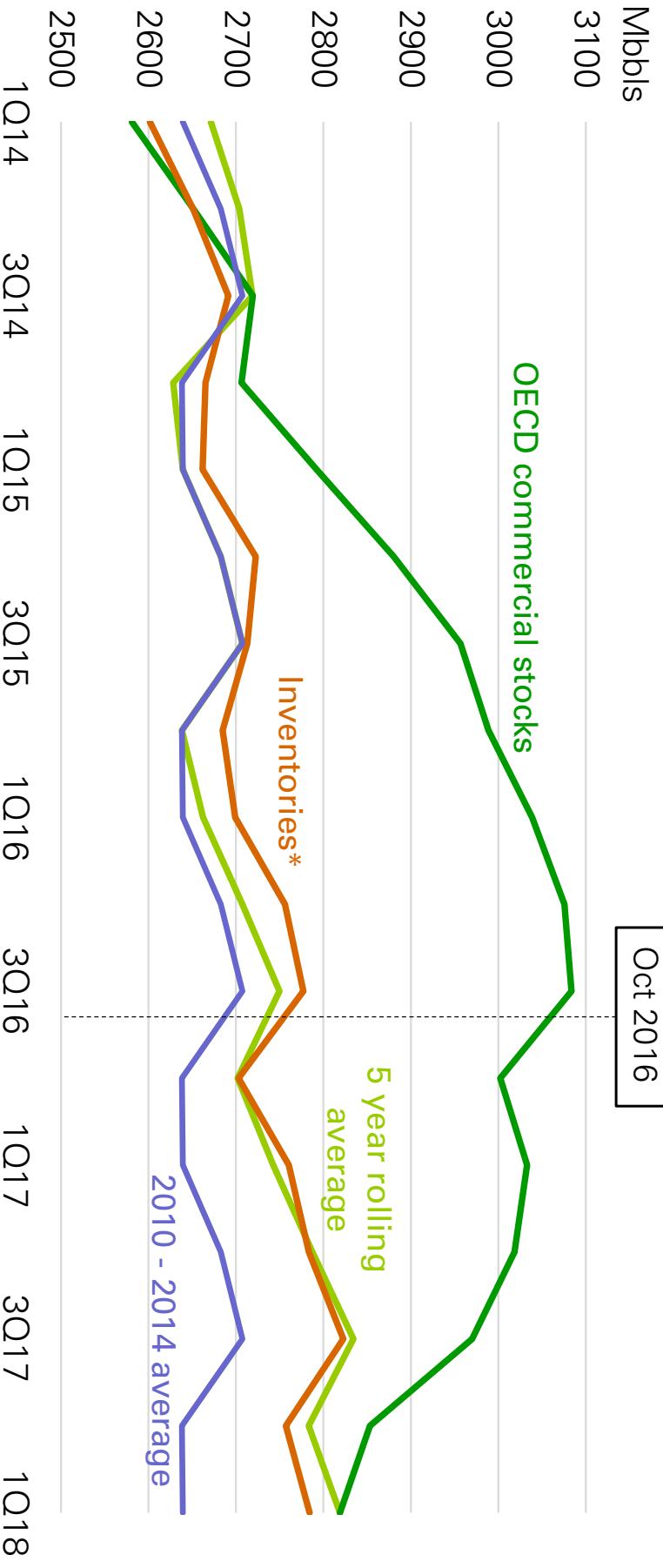
Change in supply relative to October 2016



# OECD oil inventories



Oct 2016

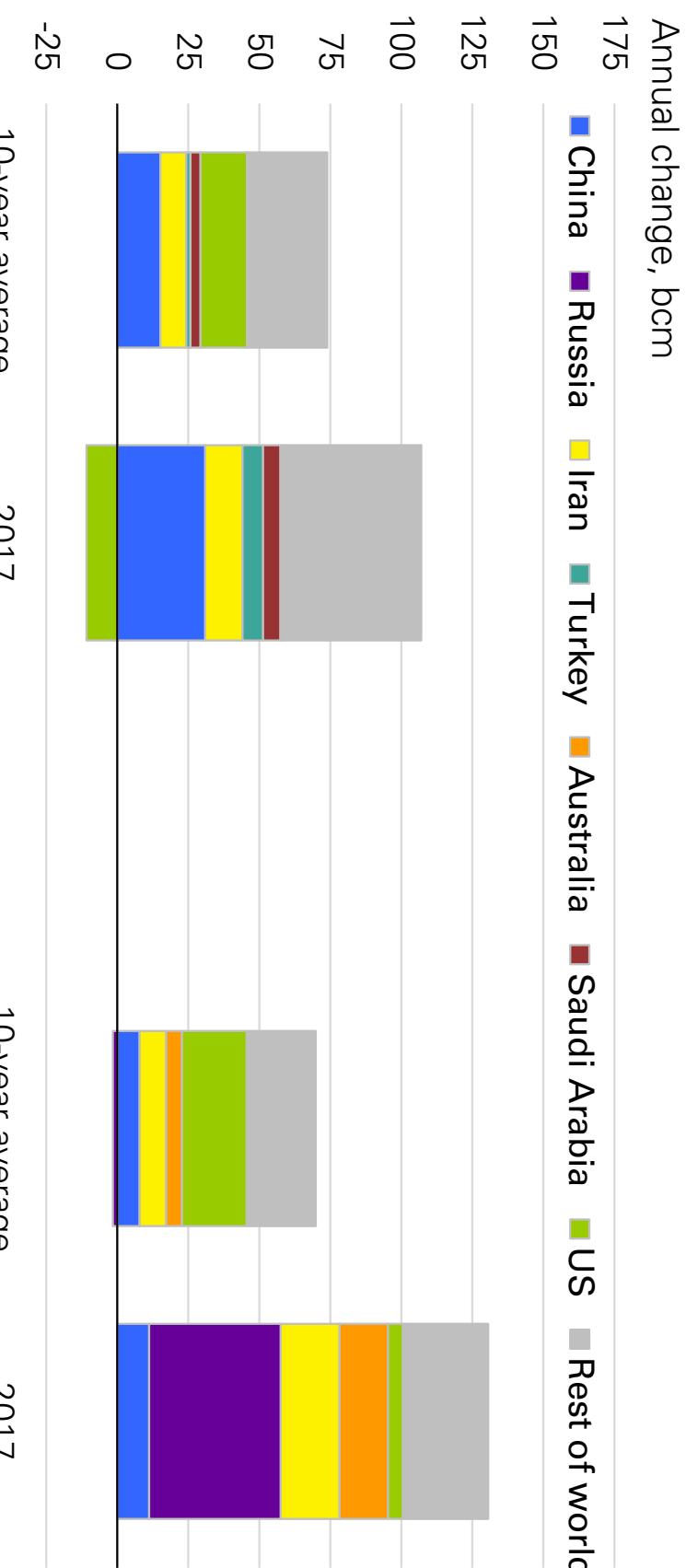


# Natural Gas

# Natural gas consumption and production



Consumption      Production



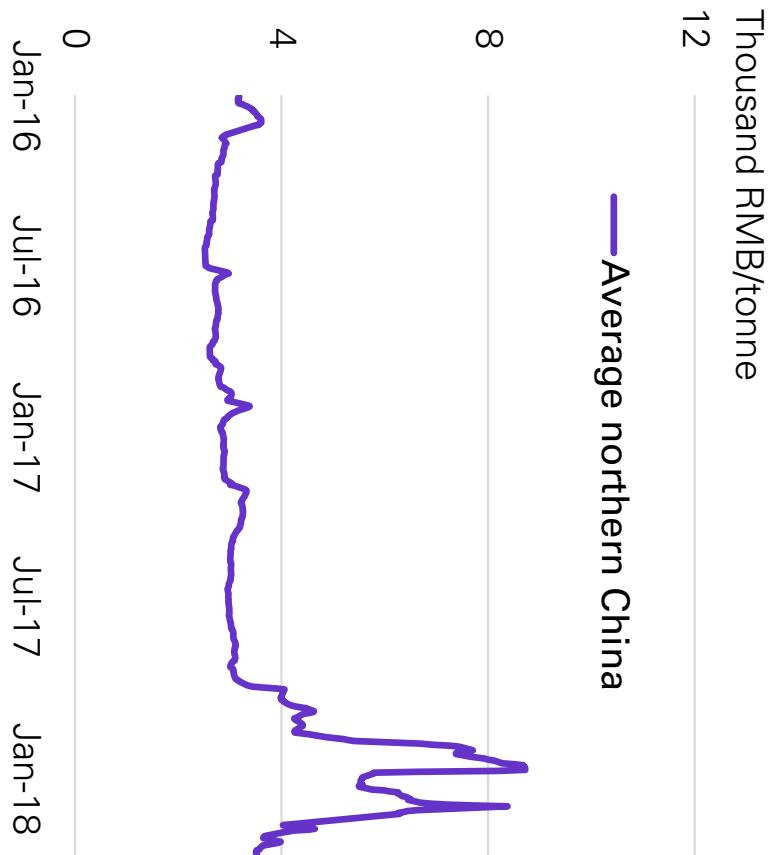
# Impact of Chinese gas surge



China LNG imports and receiving capacity



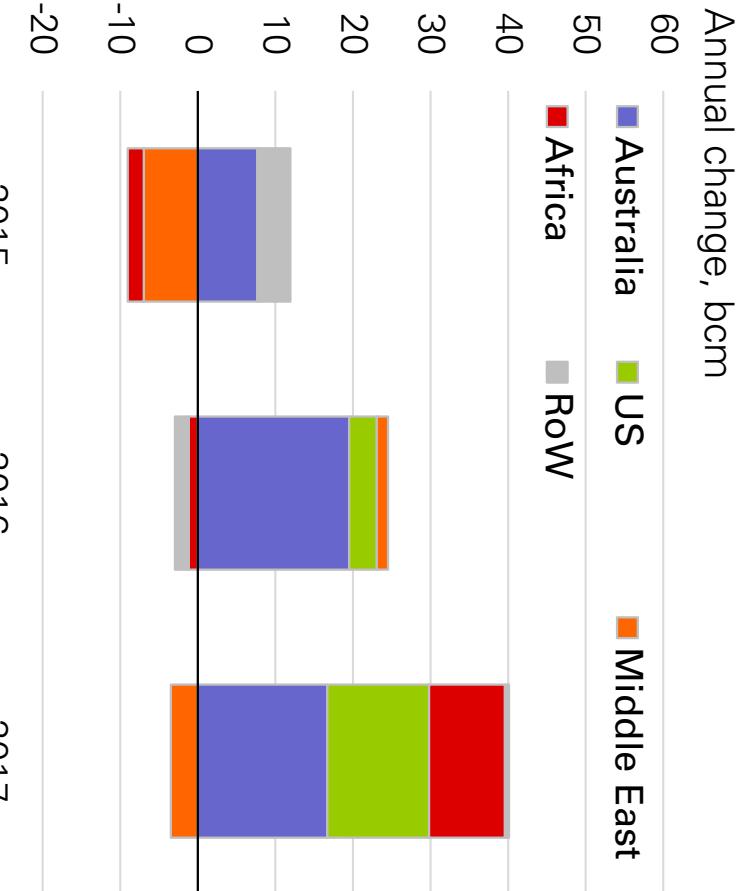
China wholesale LNG prices



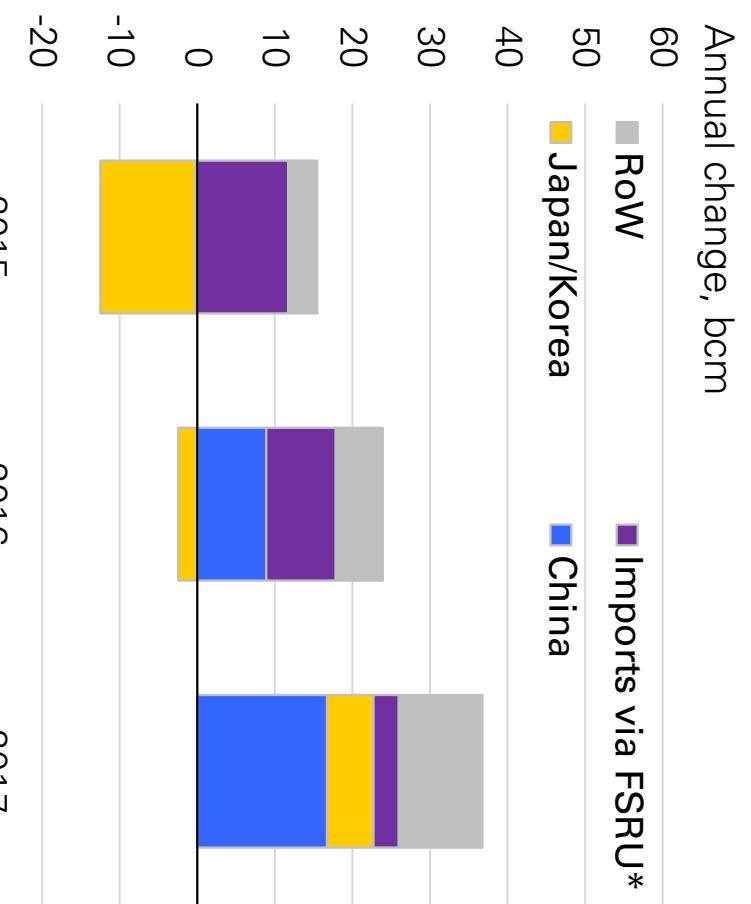
# LNG exports and imports



## LNG exports

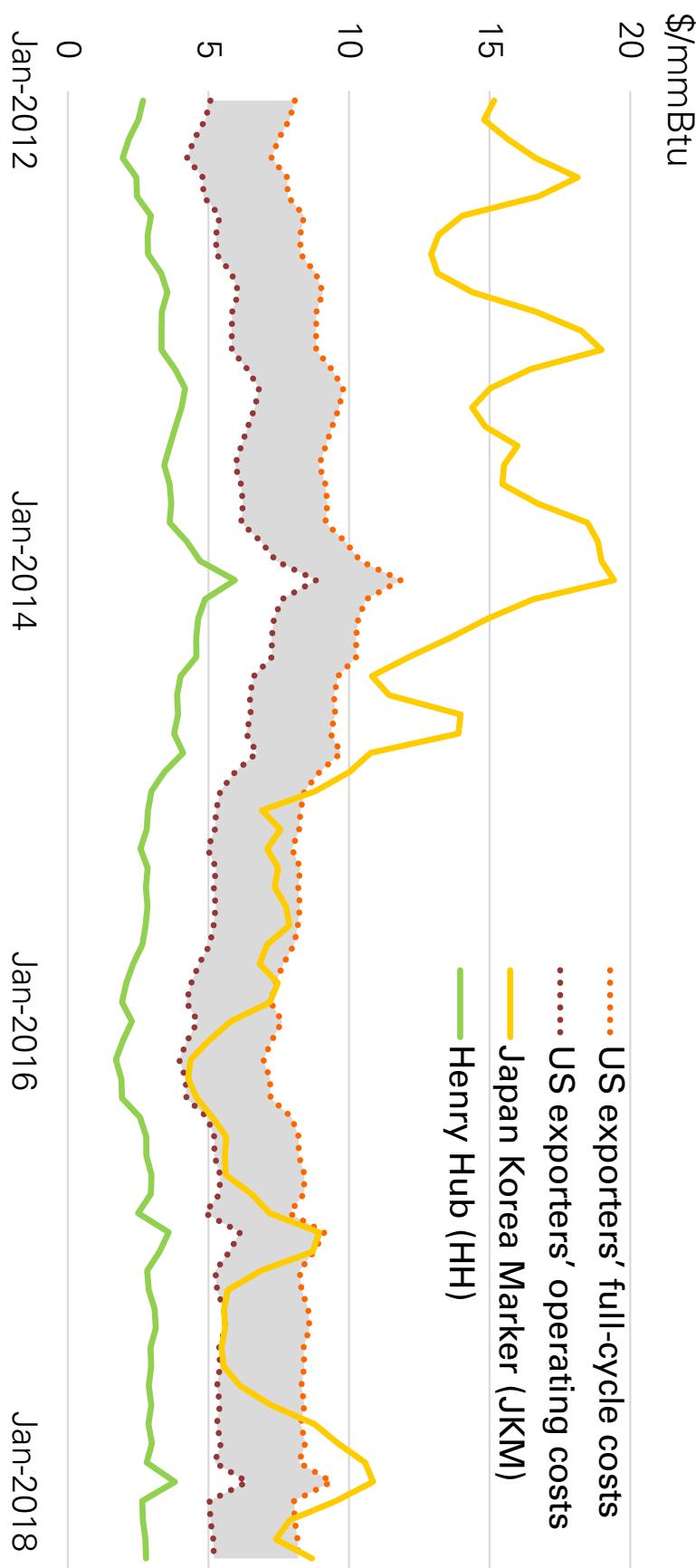


## LNG imports



\*Floating storage and regasification units  
Row: Rest of world

# US LNG exporters' costs and Asian spot prices

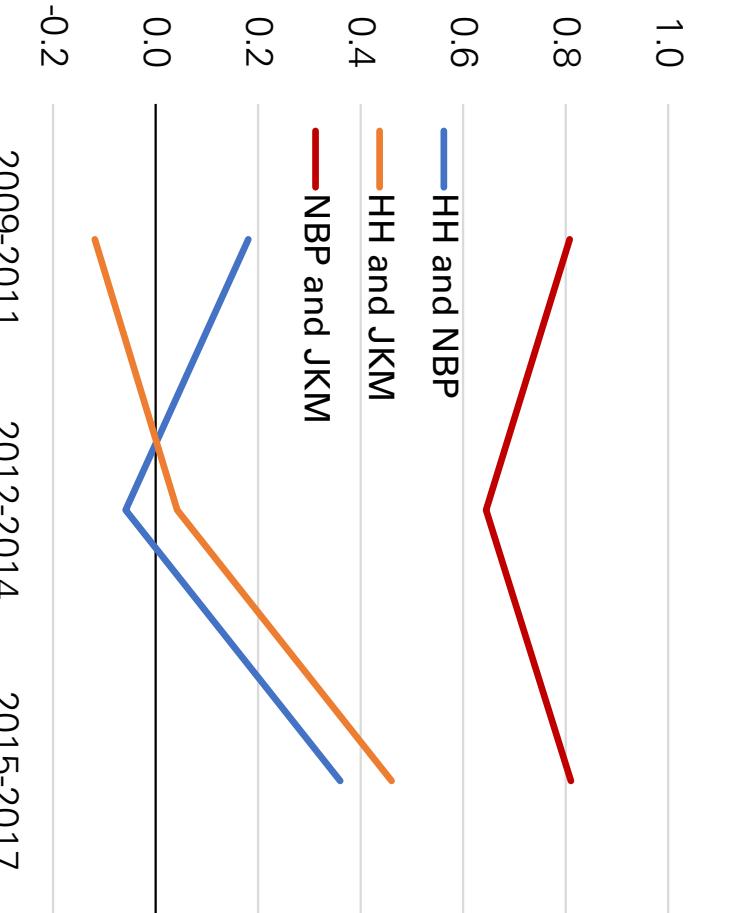


\* Operating costs = 115\* Henry Hub + \$2/mmBtu (transport); Full costs also include liquefaction fee (\$3/mmBtu)

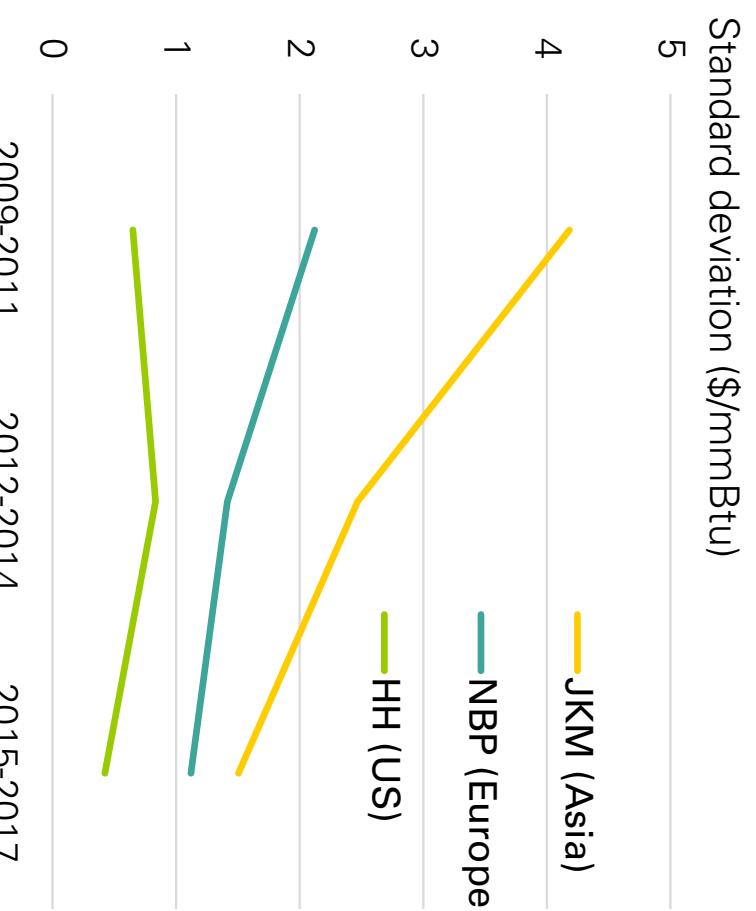
# Gas price correlation and volatility



Gas price correlation



Gas price volatility



HH – Henry Hub, US; NBP – National Balancing Point, UK; JKM – Japan Korea Marker

BP Statistical Review of World Energy

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# Coal

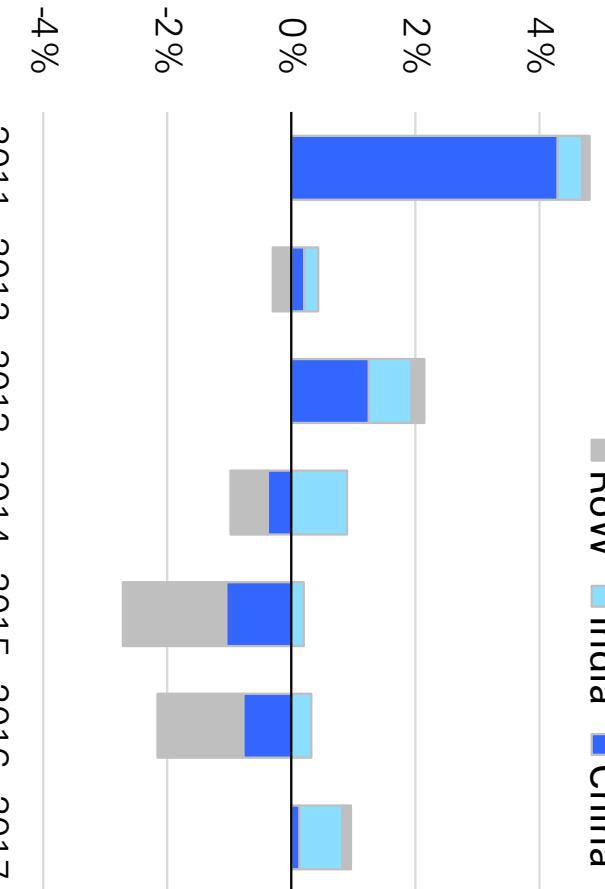
# Global coal consumption and production



Consumption growth and regional contributions

Annual change, %

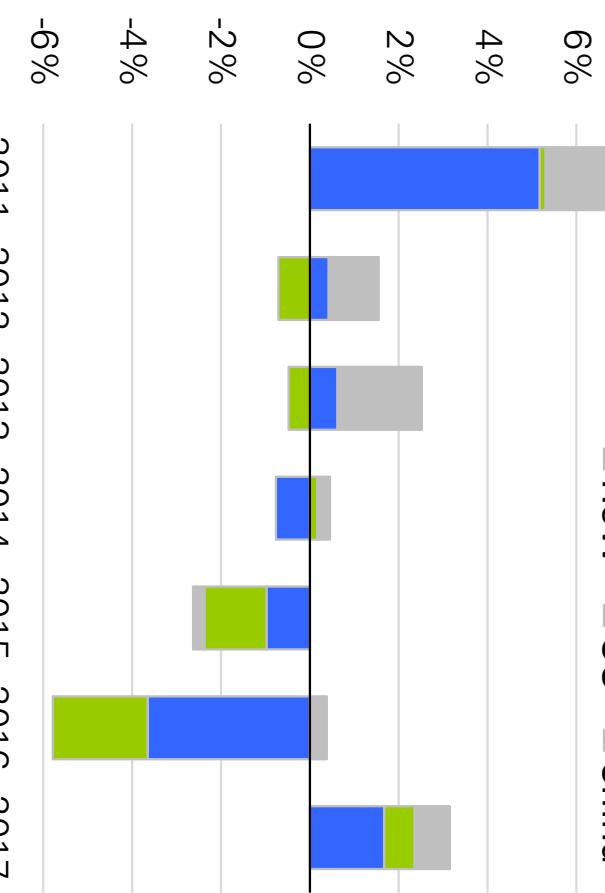
■ Row ■ India ■ China



Production growth and regional contributions

Annual change, %

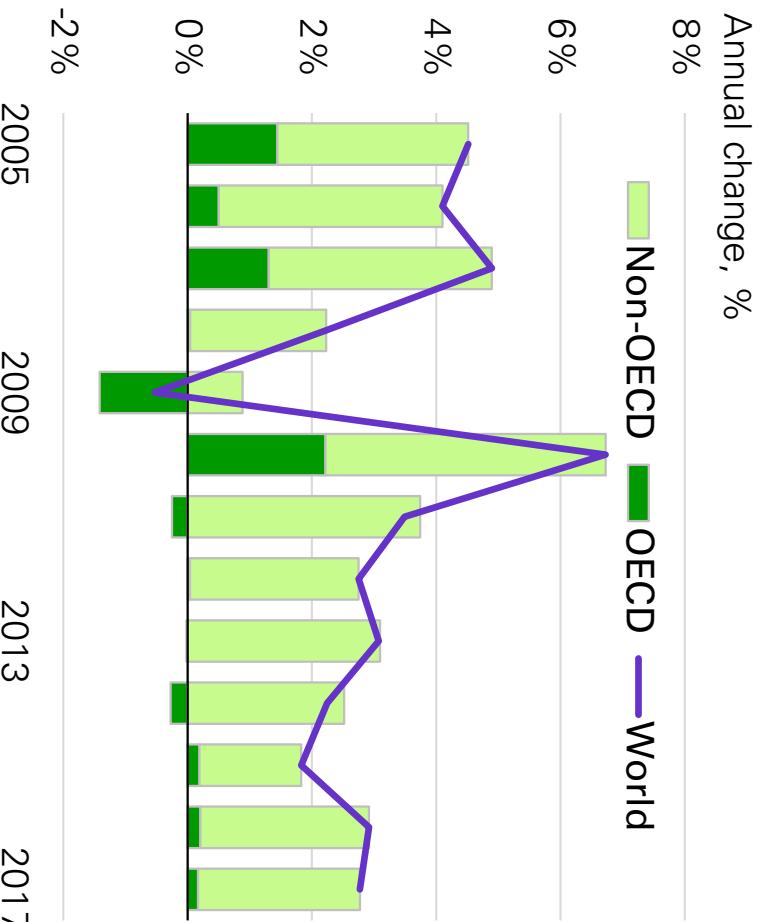
■ Row ■ US ■ China



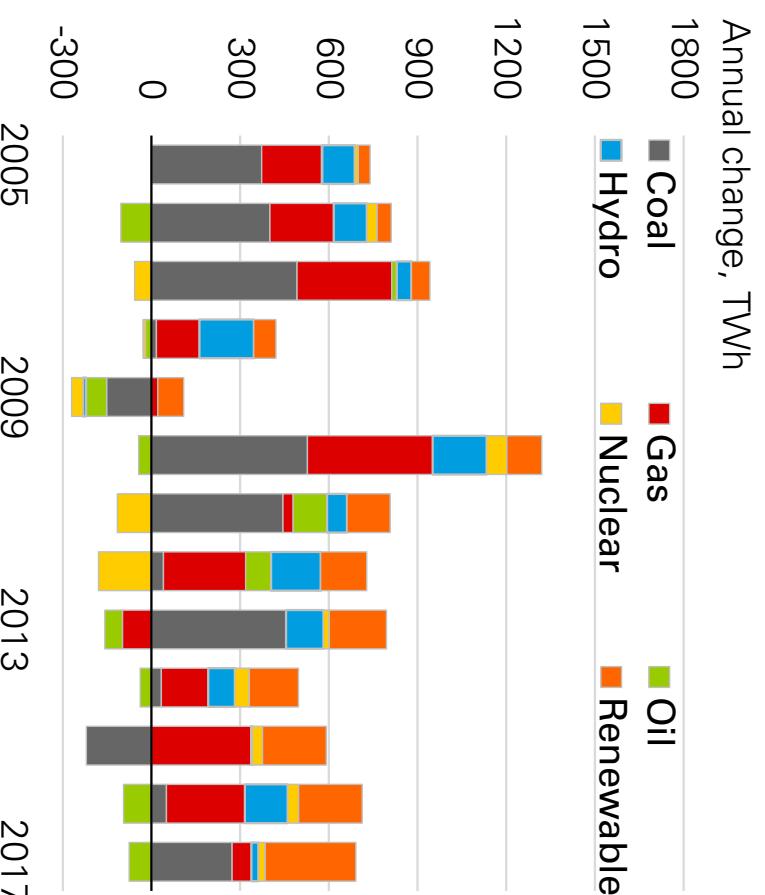
# Power

# Growth in power generation

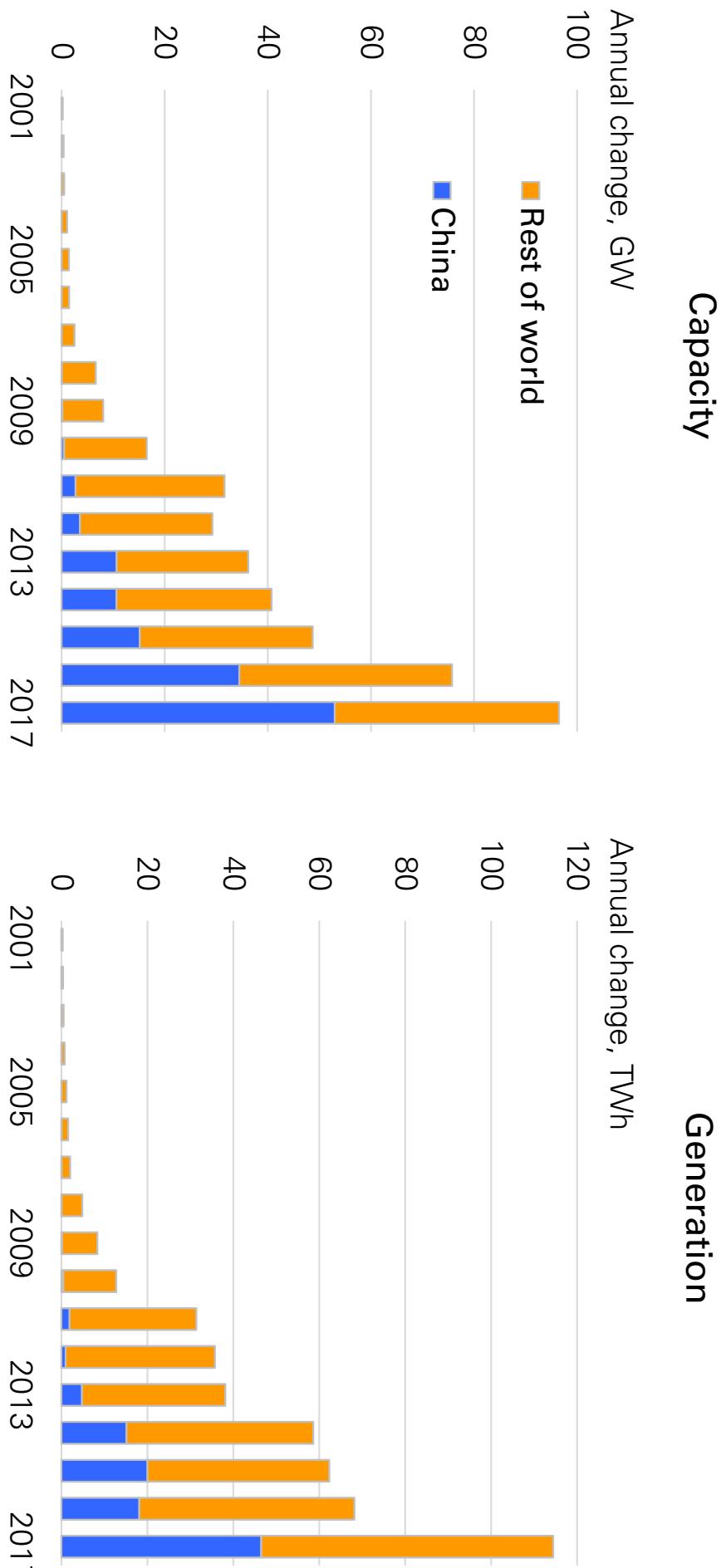
By region



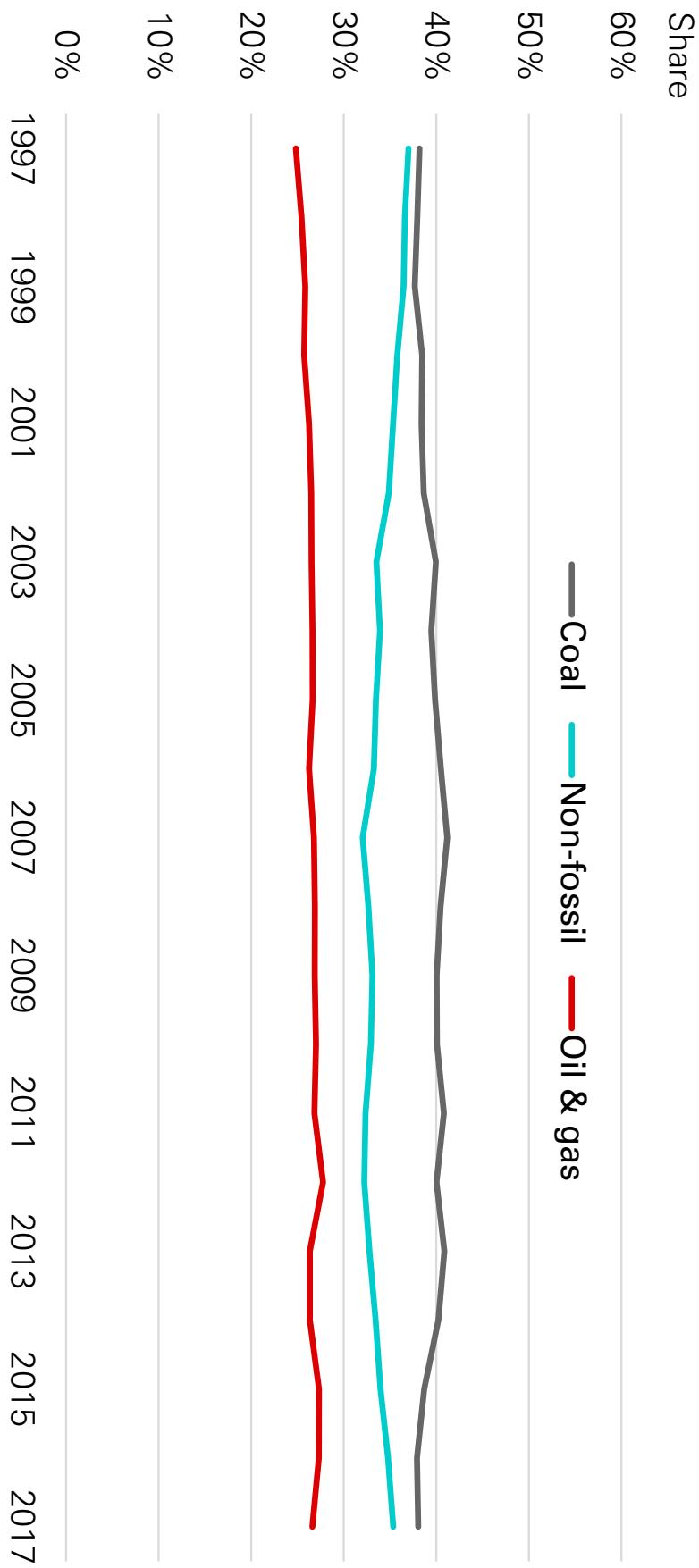
By fuel



# Growth in solar capacity and generation



# Fuel shares in power generation



# Carbon emissions

# Growth in carbon emissions



2017 vs 2013-16

Annual change, %

6%

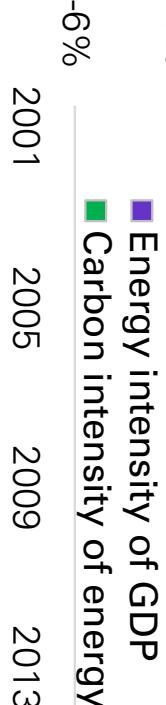
4%

2%

0%

-2%

-4%



GDP and carbon emissions

Annual change, %

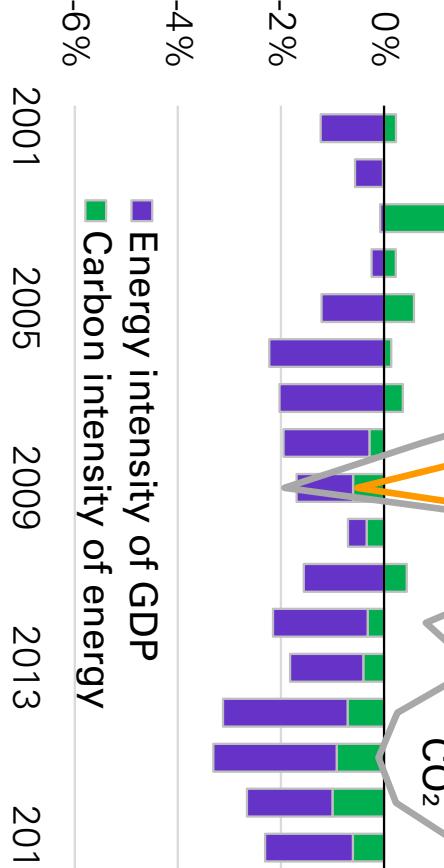
6%

4%

2%

0%

-2%



Note: change in the carbon intensity of GDP is the sum of  
"energy intensity of GDP" and "carbon intensity of energy"

# Energy in 2017: two steps forward, one step back

Spencer Dale, group chief economist



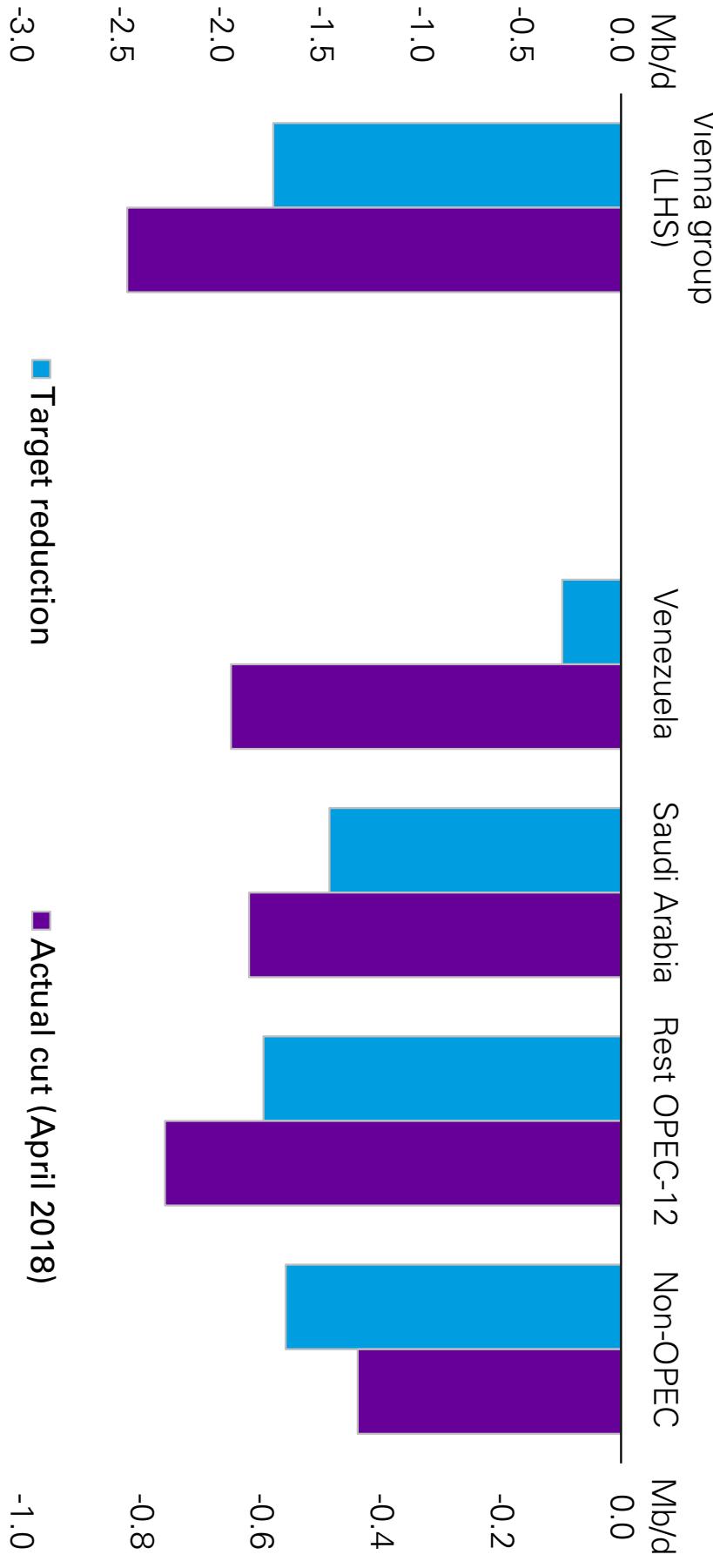
# Oil supply



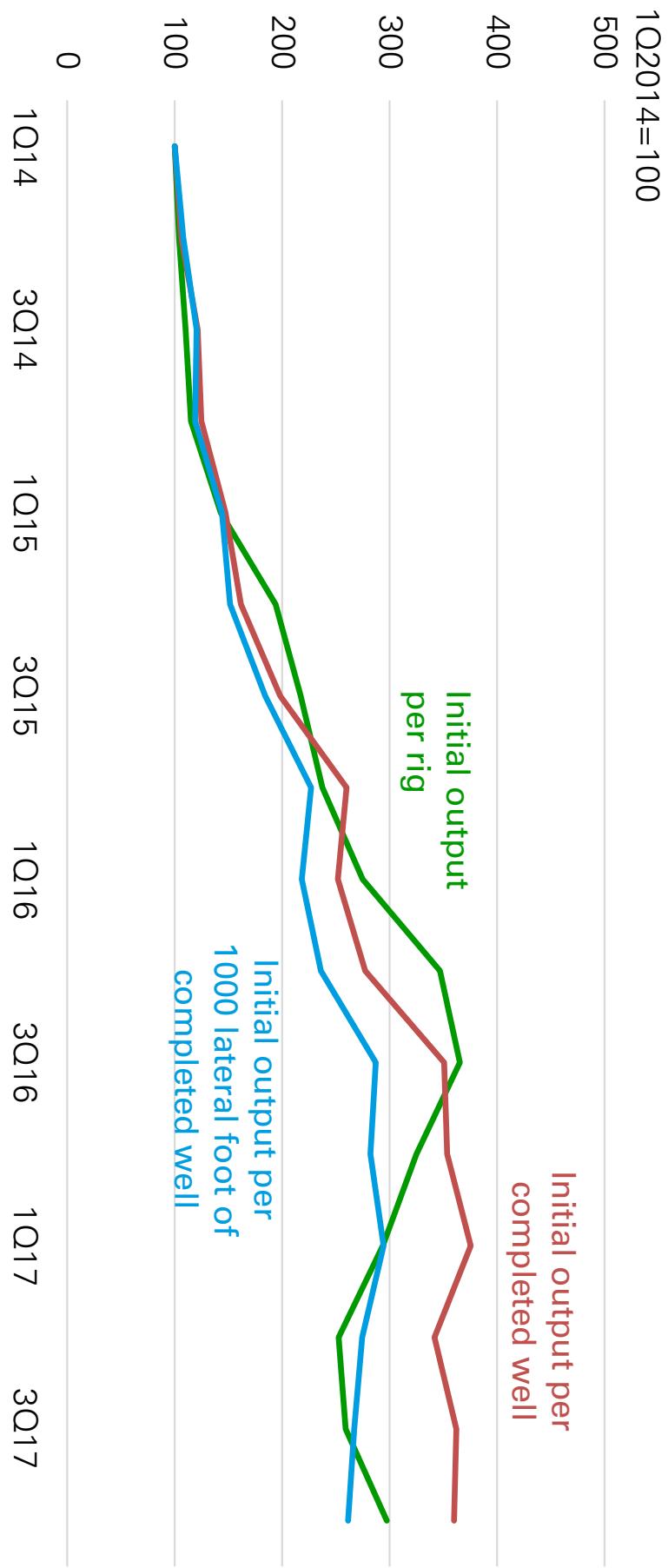
# Production cuts



Vienna group production cut



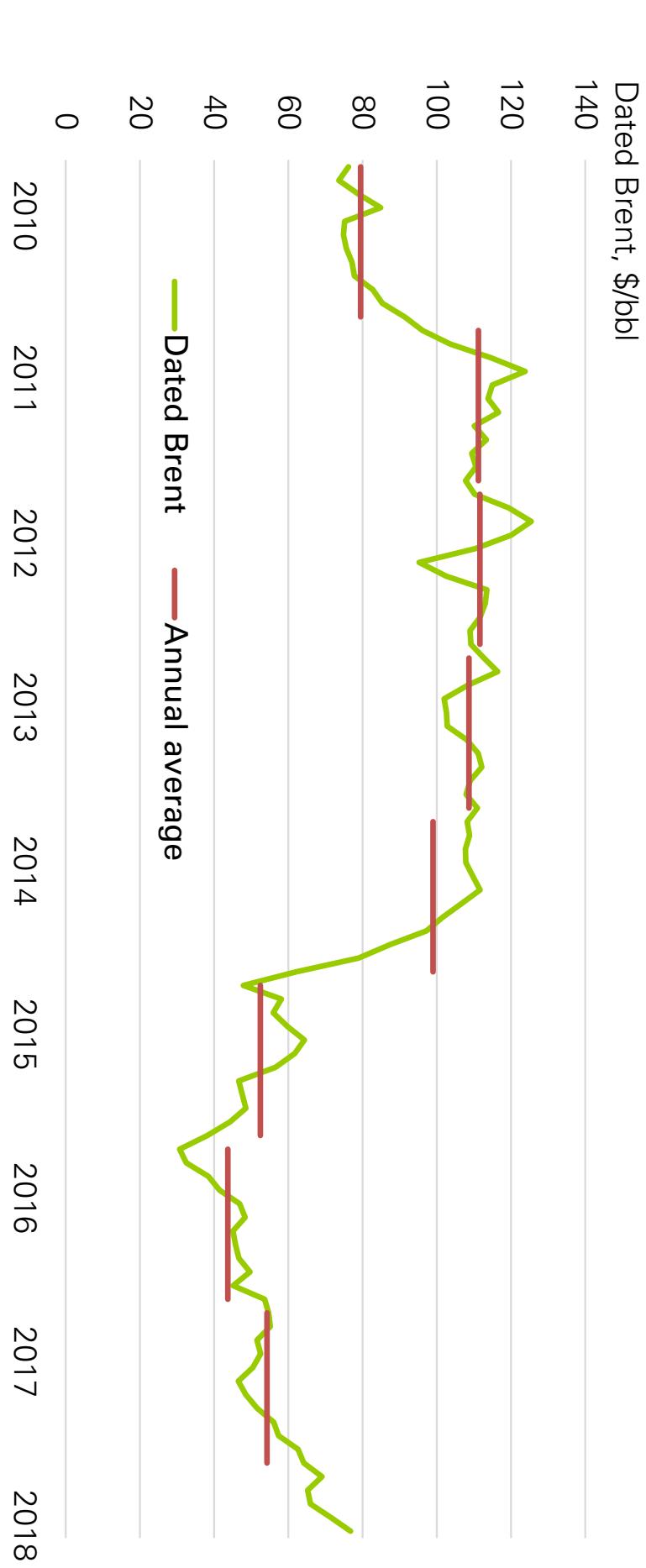
# Permian productivity



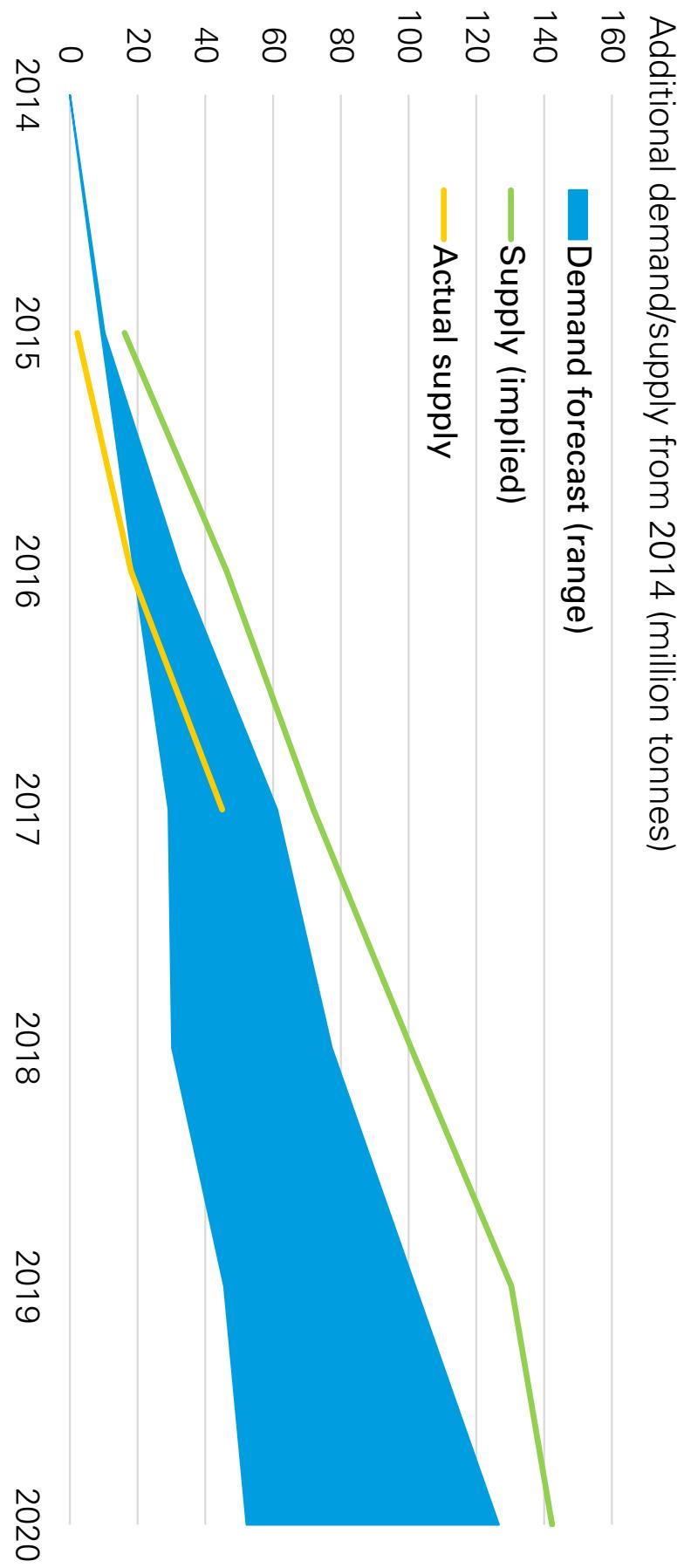
# US tight oil and oil prices



# Oil price

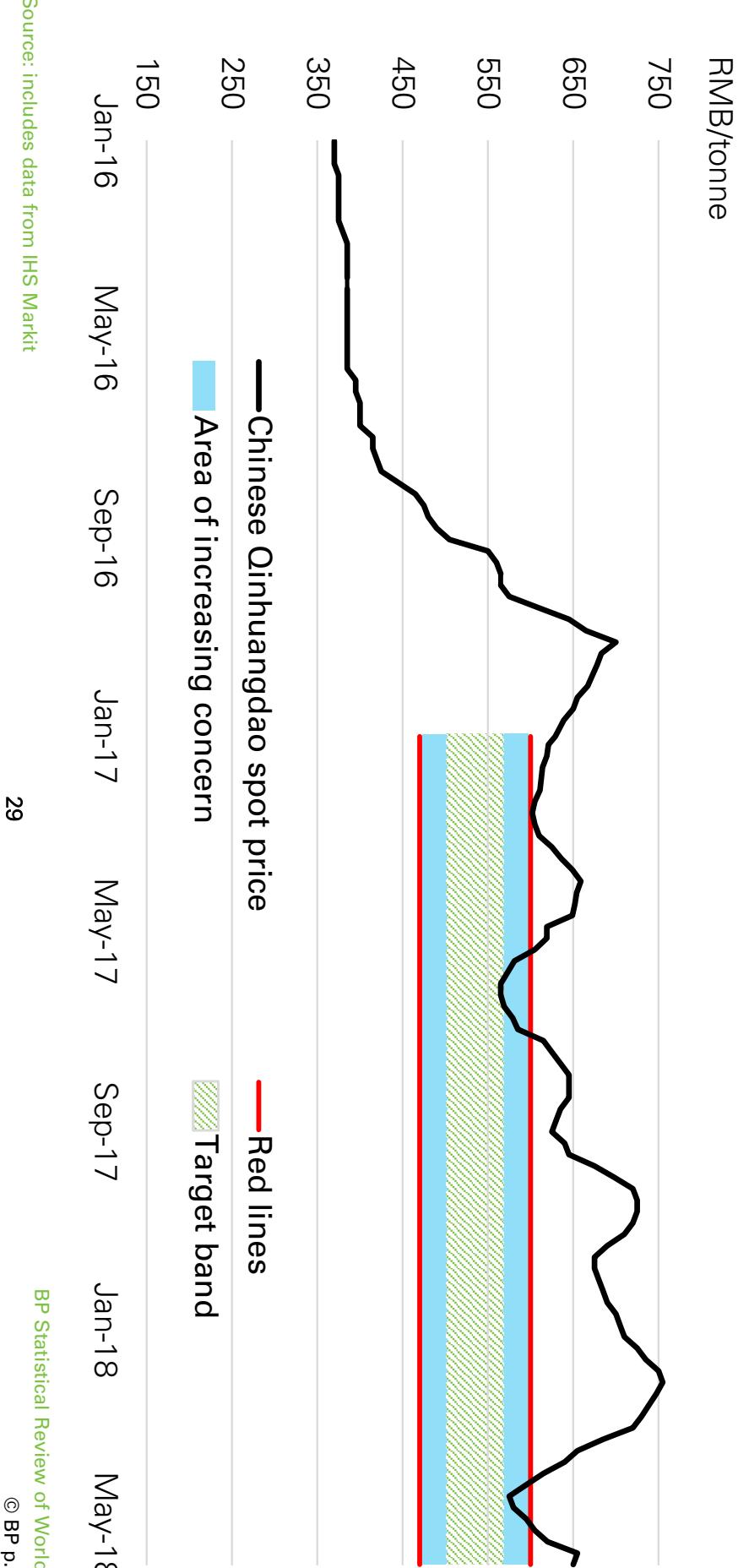


# LNG glut?



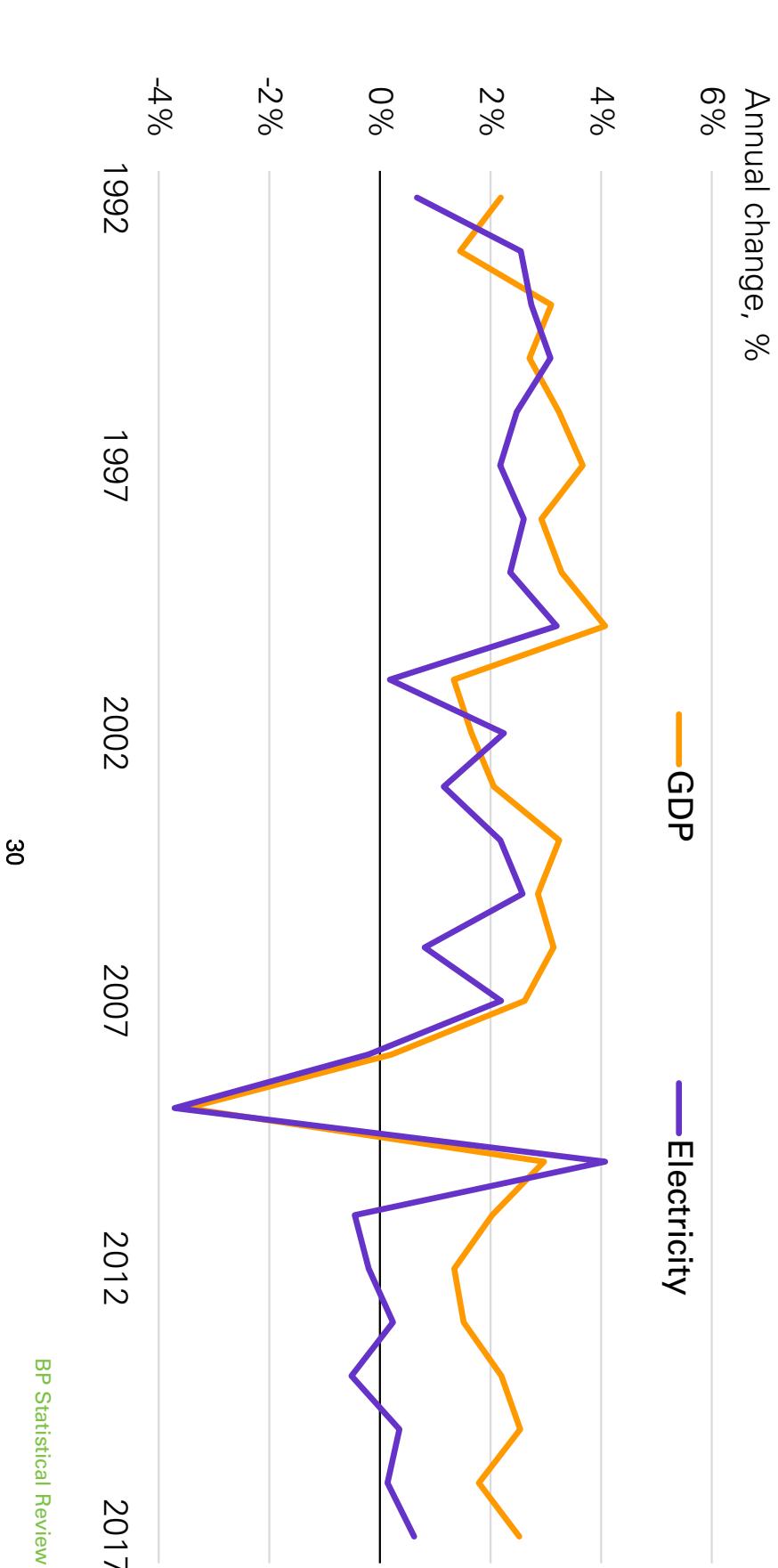
\* Source: PIRA, IHS, WoodMackenzie, BP

# Chinese coal prices



Source: includes data from IHS Markit

# OECD GDP and electricity consumption



# Lithium and cobalt: production and reserves

