



# **SOME THOUGHTS ON A SUSTAINABLE FUTURE**

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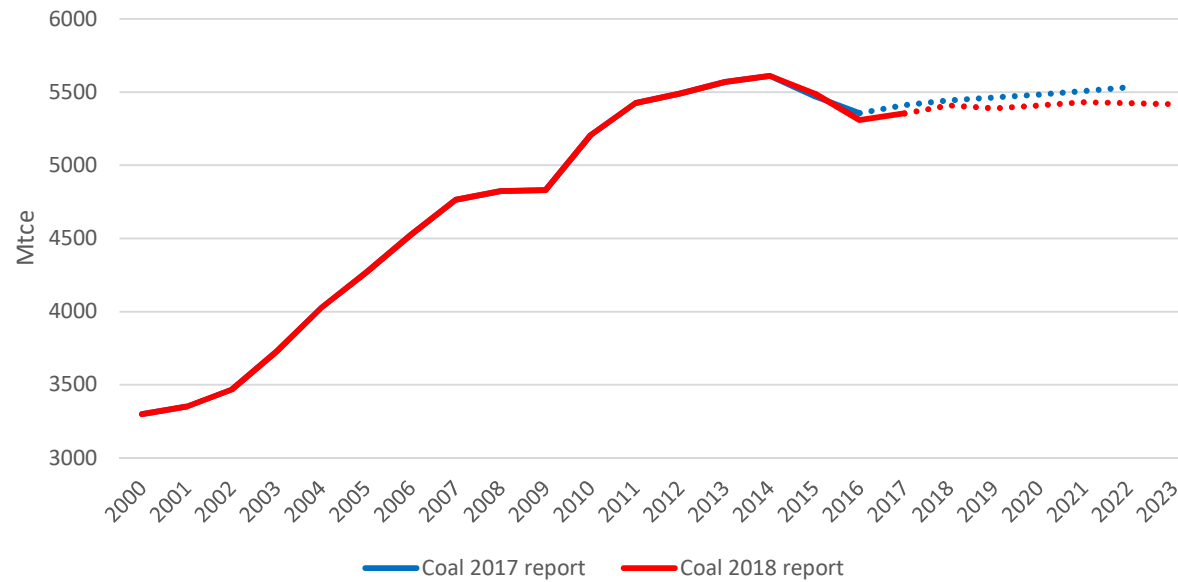
Carlos Fernández Alvarez – Senior Coal Analyst  
Assocarboni National Congress, 21st March 2019

IEA

# Much talk but not much change



Comparison between Coal 2017 and Coal 2018 global coal demand forecasts



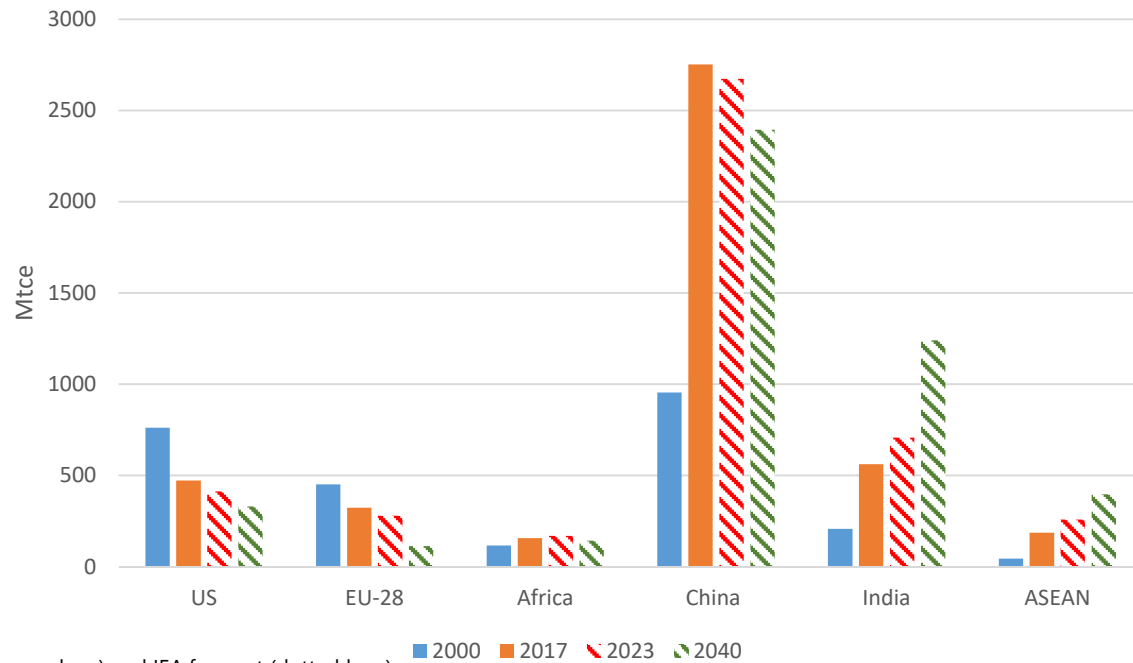
IEA statistics (continuous line) and IEA forecast (dotted line)

**Despite numerous policy changes and announcements, the forecast of coal demand is almost unchanged compared with last year's forecast**

# One planet, two coal worlds



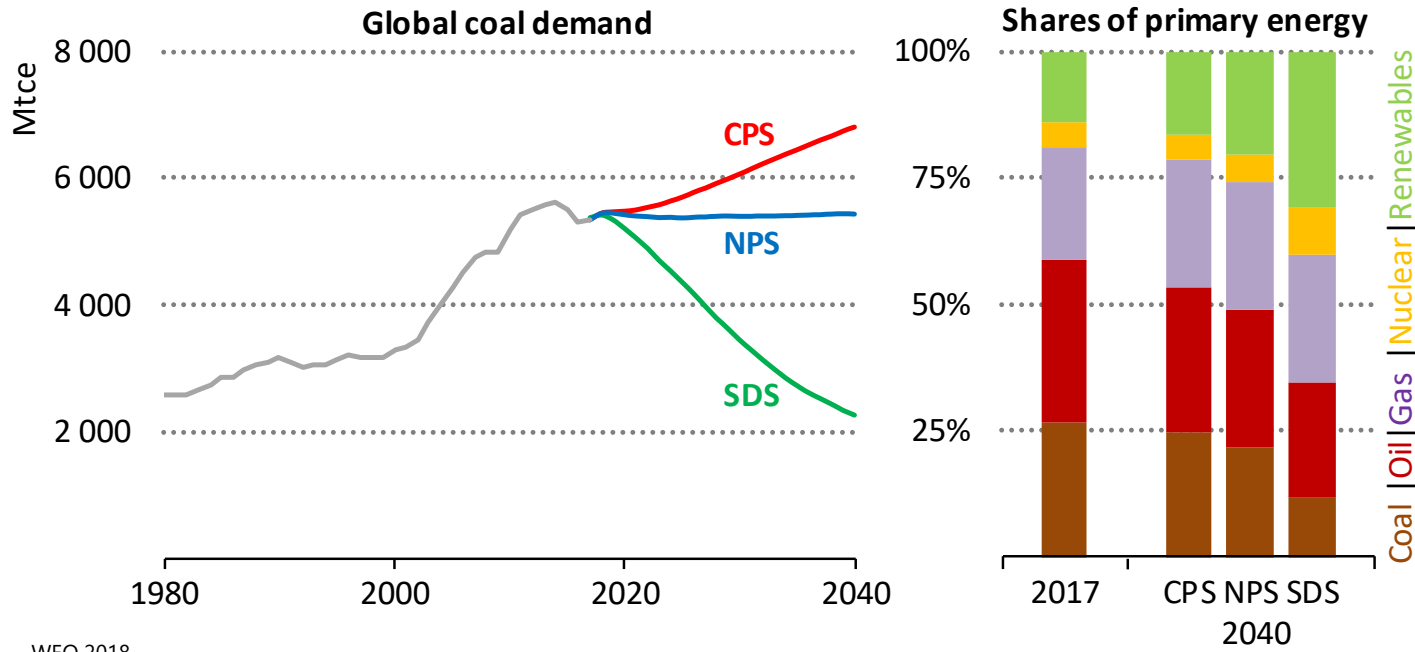
Coal demand in select countries/regions in 2000, 2017, 2023 (forecast), and 2040 (NPS)



IEA statistics (continuous bars) and IEA forecast (dotted bars)

**India and southeast Asia will lead coal demand growth while it will continue to decline in Europe and United States**

# The different paths of coal demand



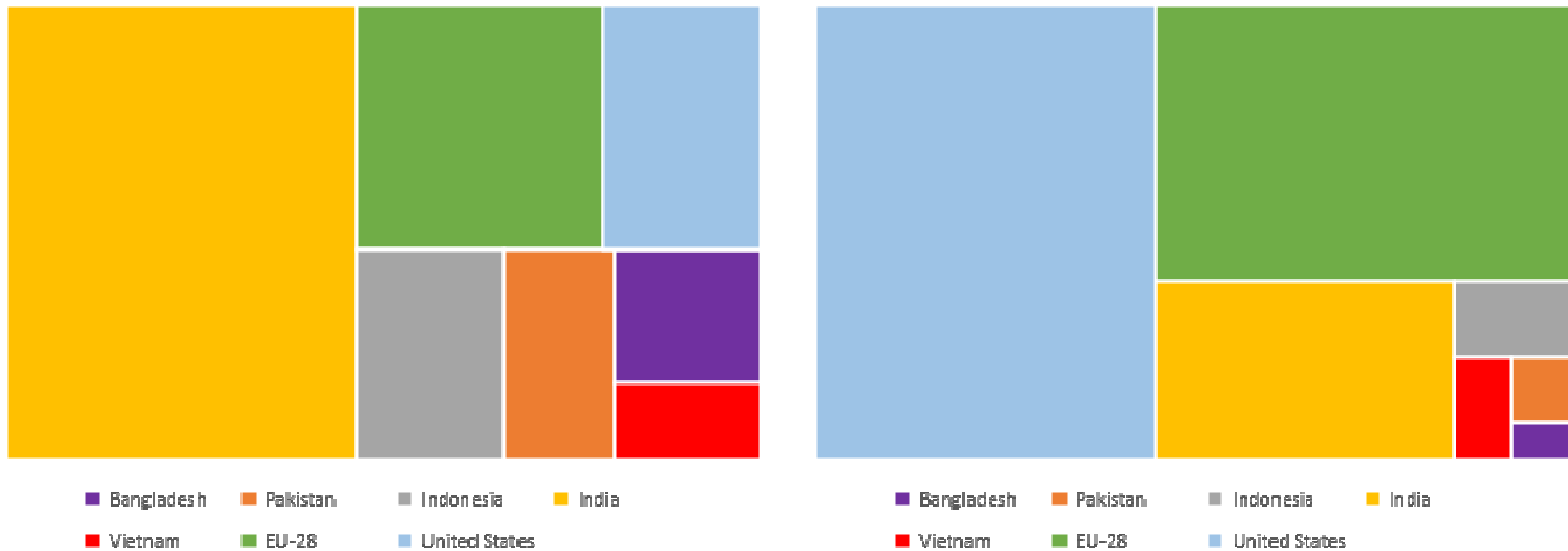
WEO 2018

**Stringency of environmental policies determines coal's fortunes in the scenarios**

# Electricity-thirsty world

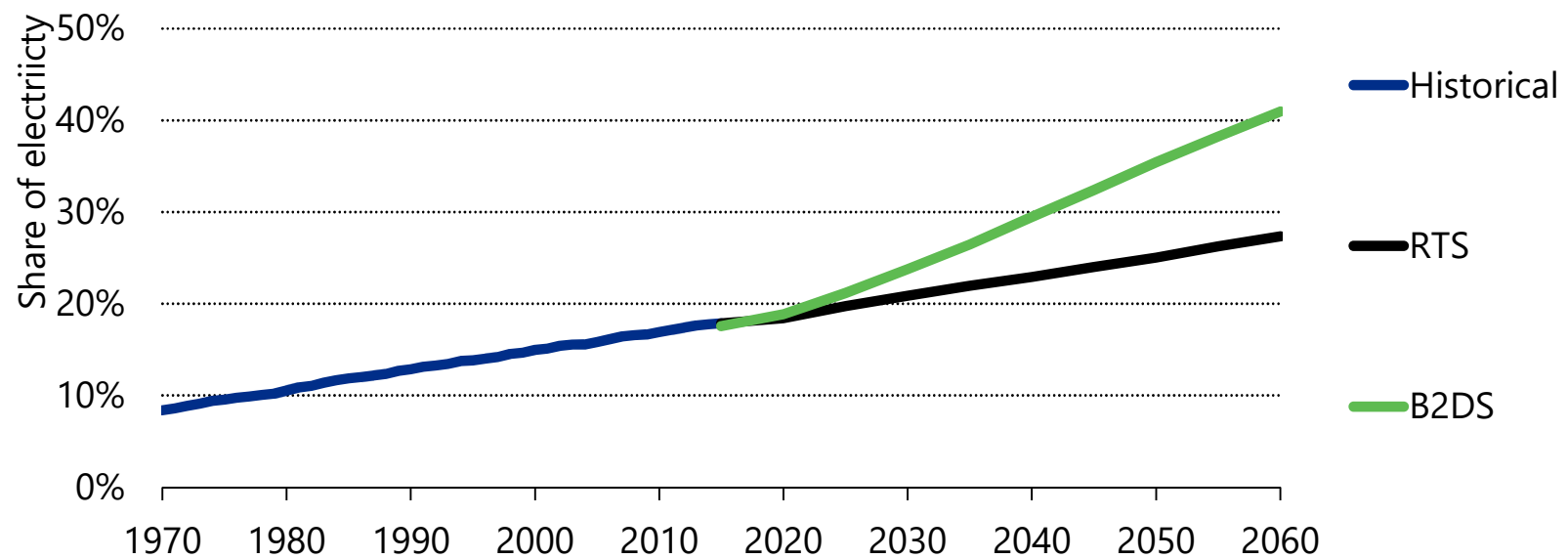


Population (left) and electricity consumption (right) in select country regions



**Increase in coal power generation mostly occurs in countries where per capita electricity consumption is currently very low**

# Climate policy strongly accelerates the historical trend of electrification



**Rapid decarbonization of electricity opens new opportunities on a well-below 2° path.**

## Imagine an alternative universe where



Large scale deployment of baseload geothermal replaces baseload coal



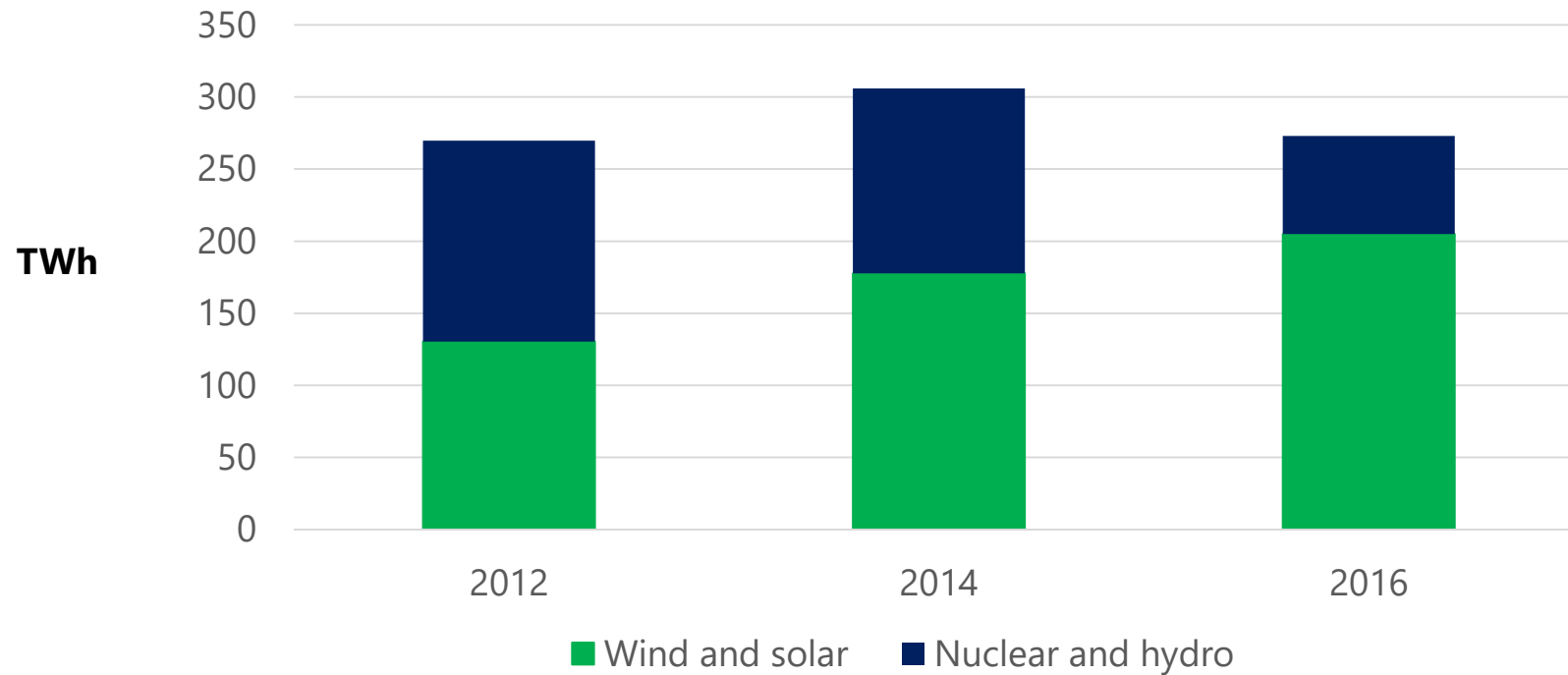
Rapid progress with biogas provides low carbon CH<sub>4</sub> for gas turbines

**In this case we would have a “copy paste” transition without needing to rethink grid operations**

# The headwind of the hydro and nuclear slowdown



*Expected annual production from facilities starting construction*



**New low-carbon investment covers only around half of the global electricity demand increase.**



# The four pillars of a successful renewable integration



Transmission interconnection



Demand response



Storage



Dispatchable generation

**Efficient, competitive markets help unlocking flexibility**



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