

# Navigating the Emerging Energy Transition



Dr. Fatih Birol  
Executive Director  
International Energy Agency

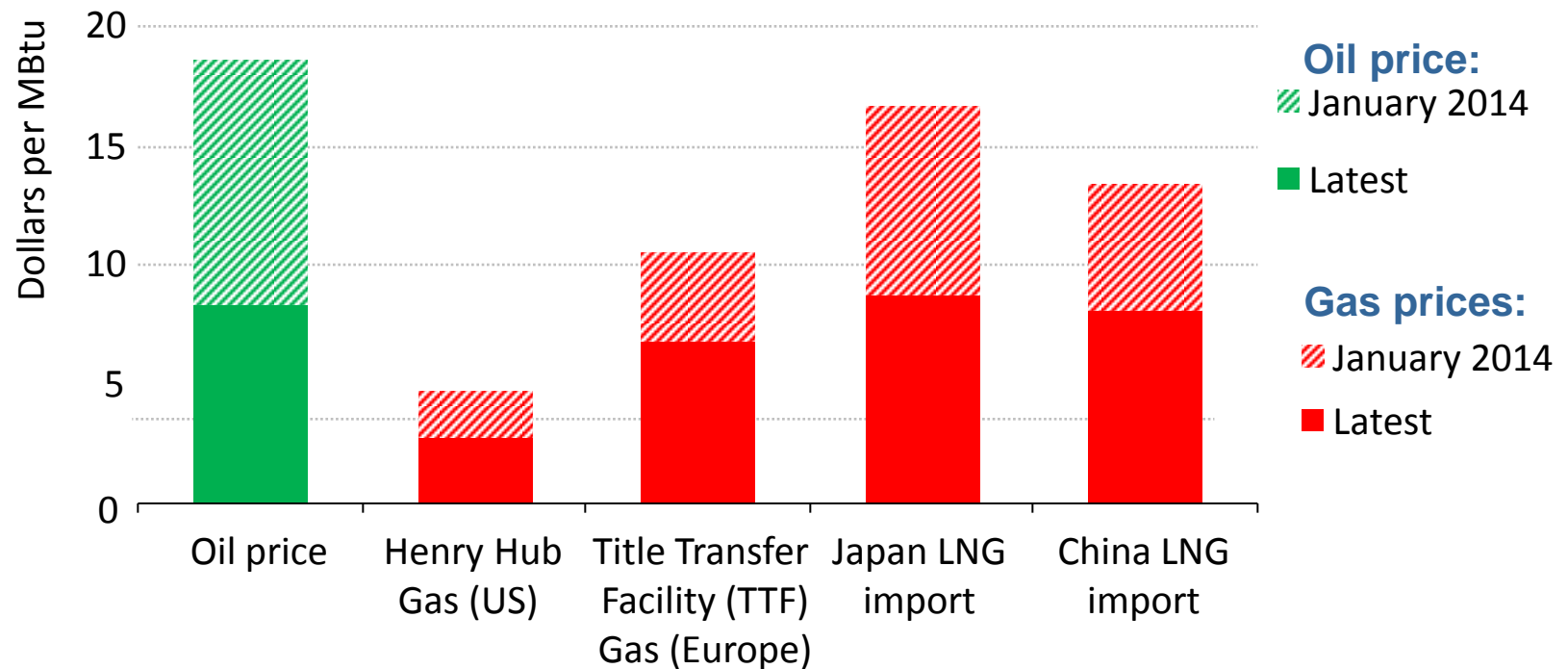
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# An energy system in transition

- The fall in energy prices has been a welcome boost to consumers, but should not disguise difficult road ahead
  - *Cutbacks & cost-efficiency the new watchwords for the upstream*
  - *Turmoil in the Middle East raises doubts over future oil balance*
- Momentum is building in run up to COP-21 climate summit in Paris
  - *Flattening in global CO<sub>2</sub> emissions a turning point, or a pause?*
  - *Ongoing reforms to fossil fuel subsidies, but at \$500 billion they remain over four-times those to renewables*
  - *Renewables growing strongly & increased emphasis on energy efficiency*
- Will change in global energy be led by policies, or driven by events?

# The great plunge in energy prices

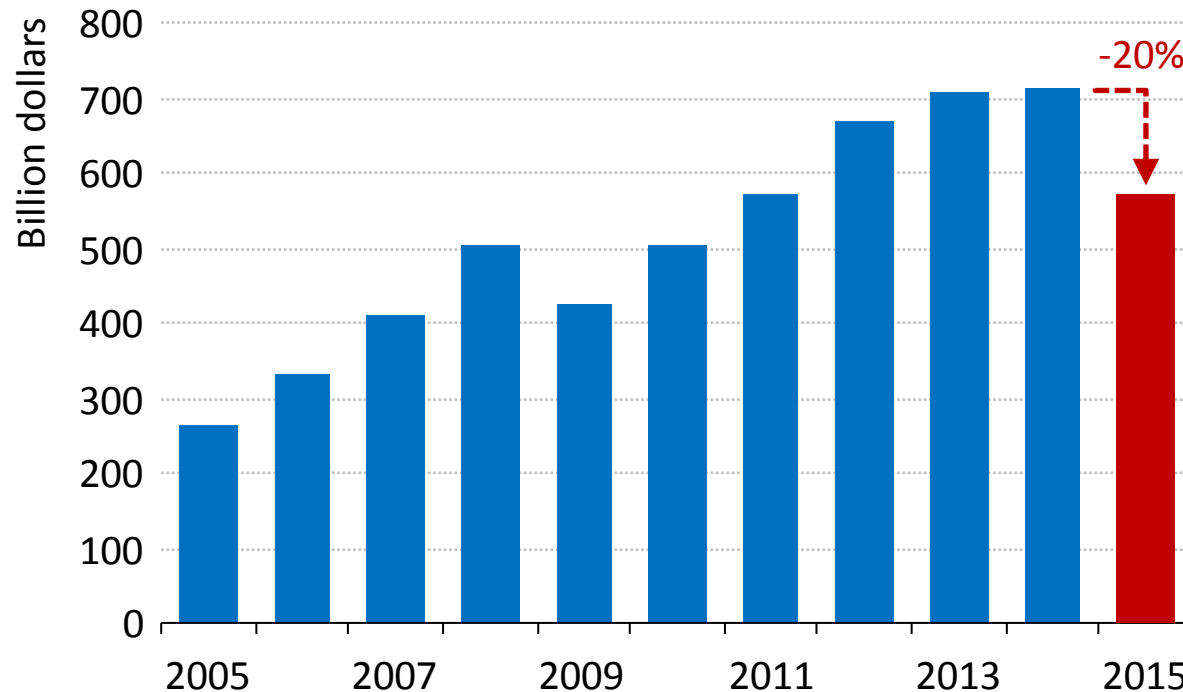
## Oil and natural gas prices, 2014-2015



***Amid signs of over-supply for both fuels, oil & gas prices have tumbled since 2014 & the divergence between different regional gas prices has narrowed sharply***

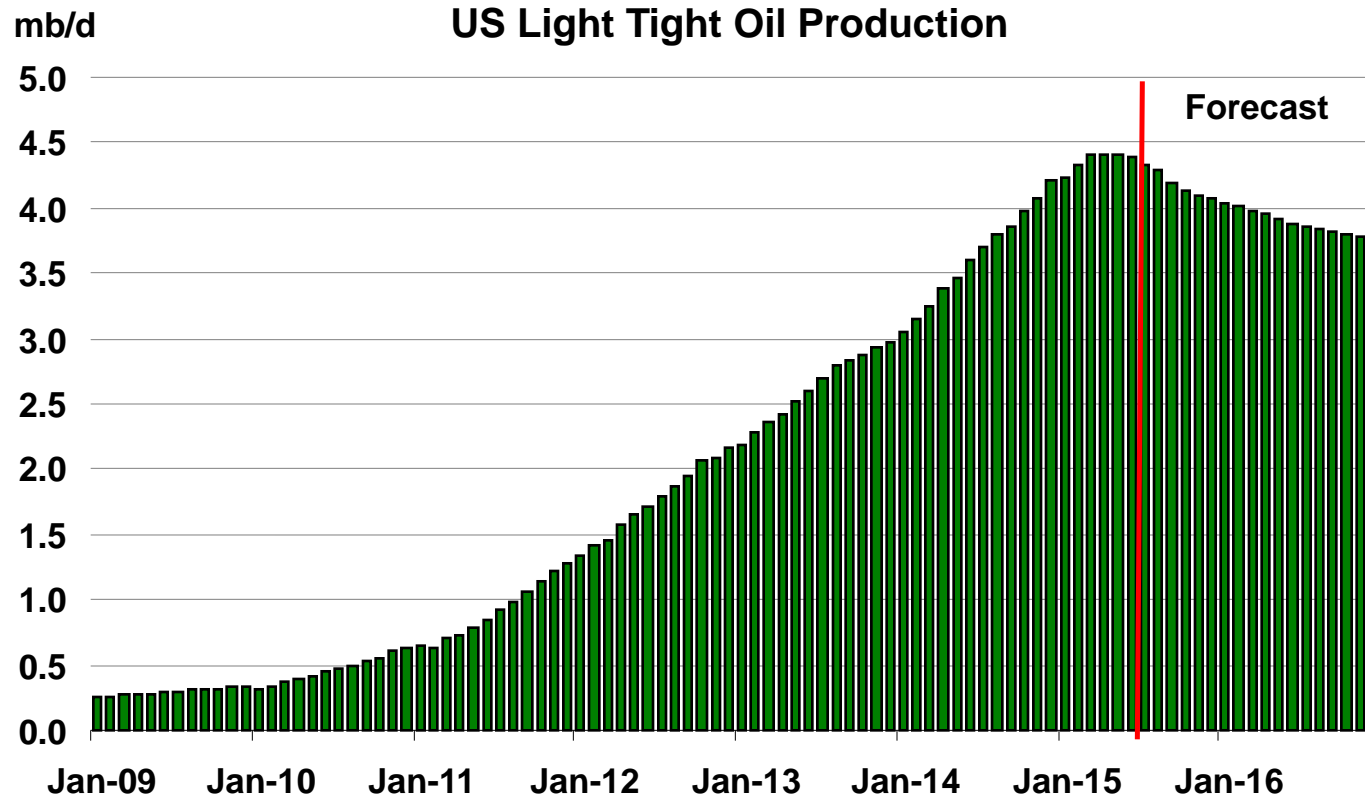
# Lower revenues are hitting upstream oil & gas investment

## World upstream oil and gas capital investment



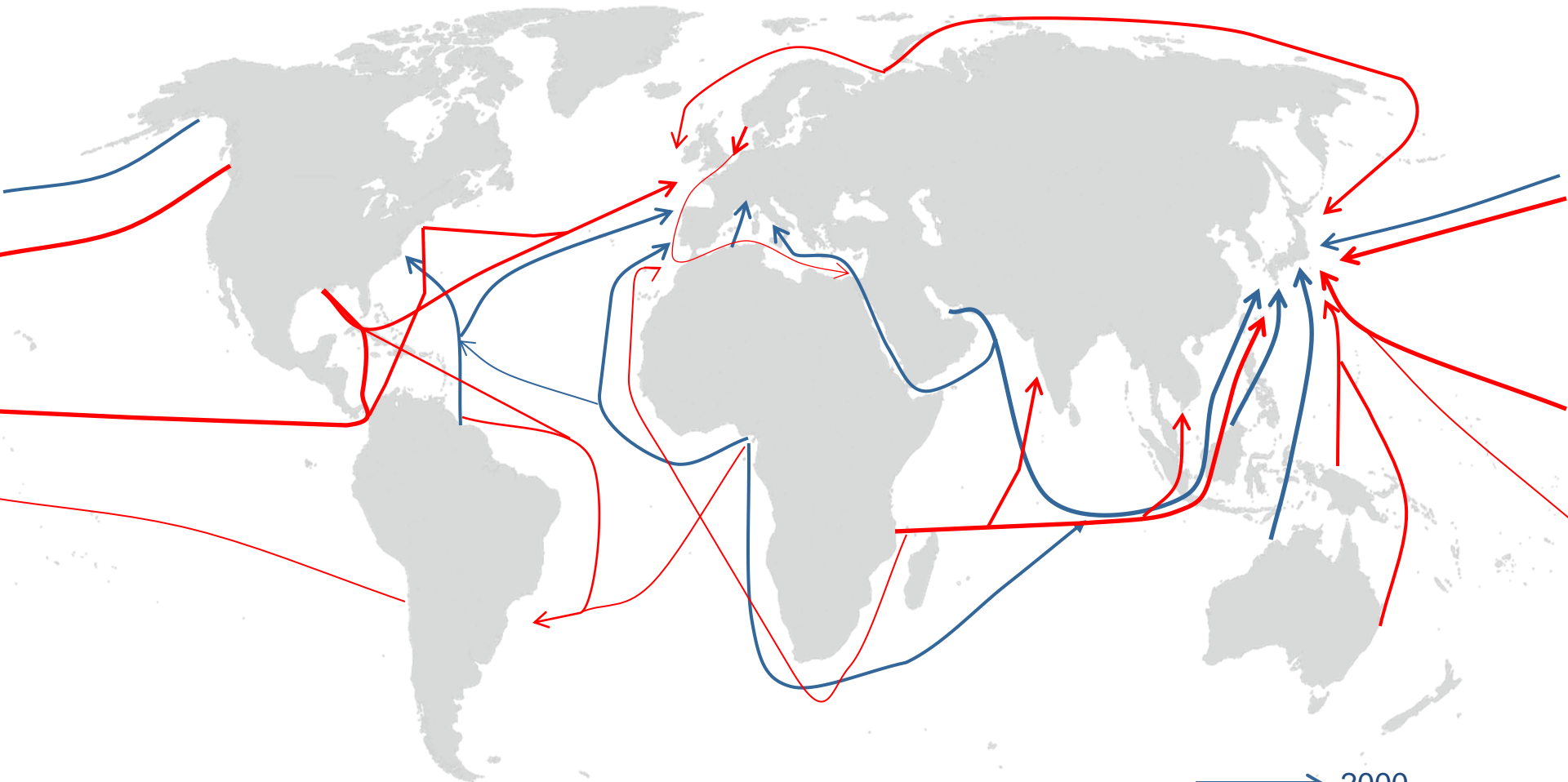
*Capex cuts are highest in North America, but pressure is widely felt and compensated only in part by cost reductions for services & supplies; more cuts expected in 2016 if low prices persist*

# Sharp decline looms for Light Tight Oil



***Following remarkable growth over recent years, the fall in oil prices is expected to see US Light Tight Oil output decline by 400 kb/d in 2016***

# LNG trade keeps on expanding supported by increasing demand across the globe

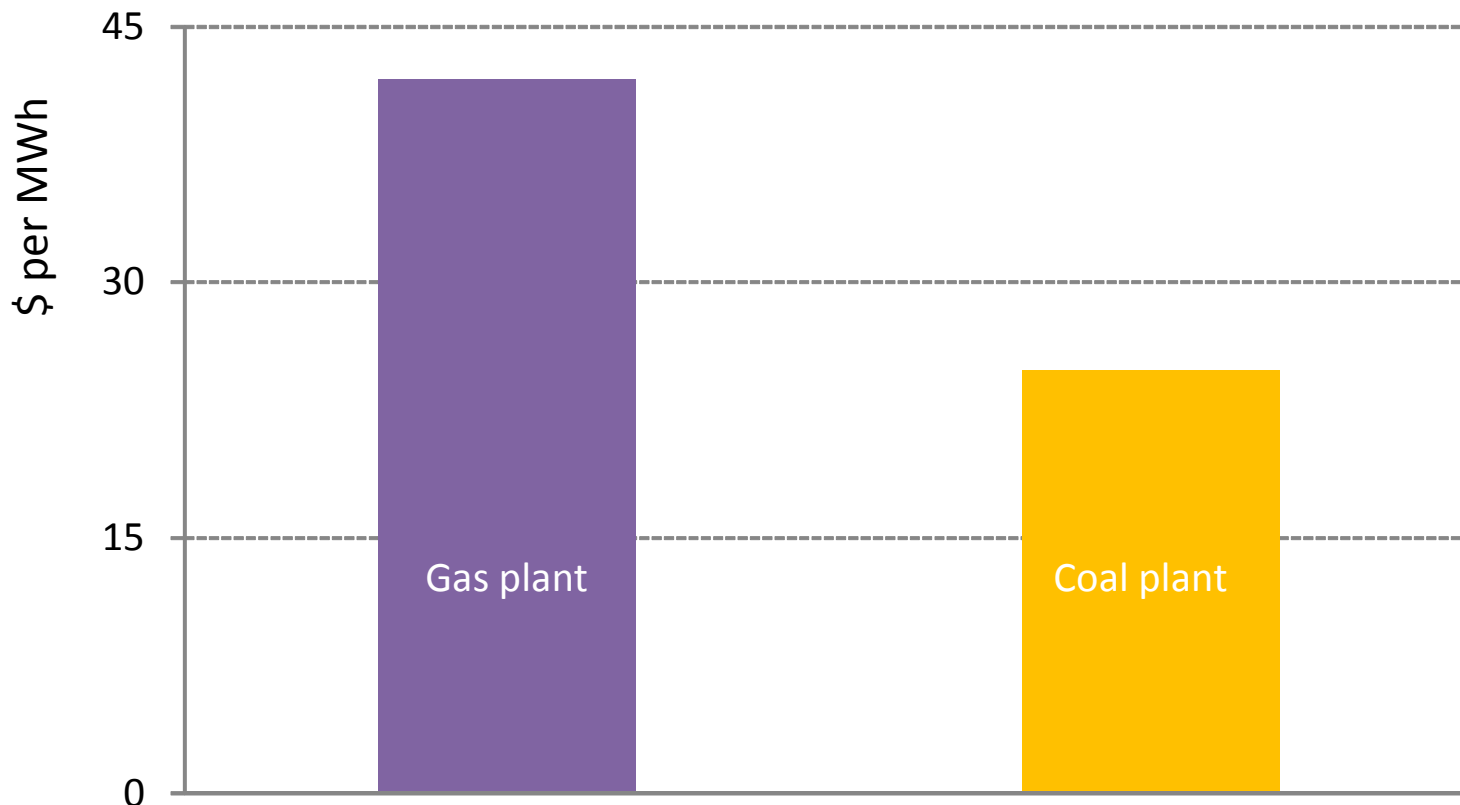


***LNG is basically the only option to deliver gas from continent to continent***

—→ 2000  
—→ 2020

# But coal will not disappear quickly

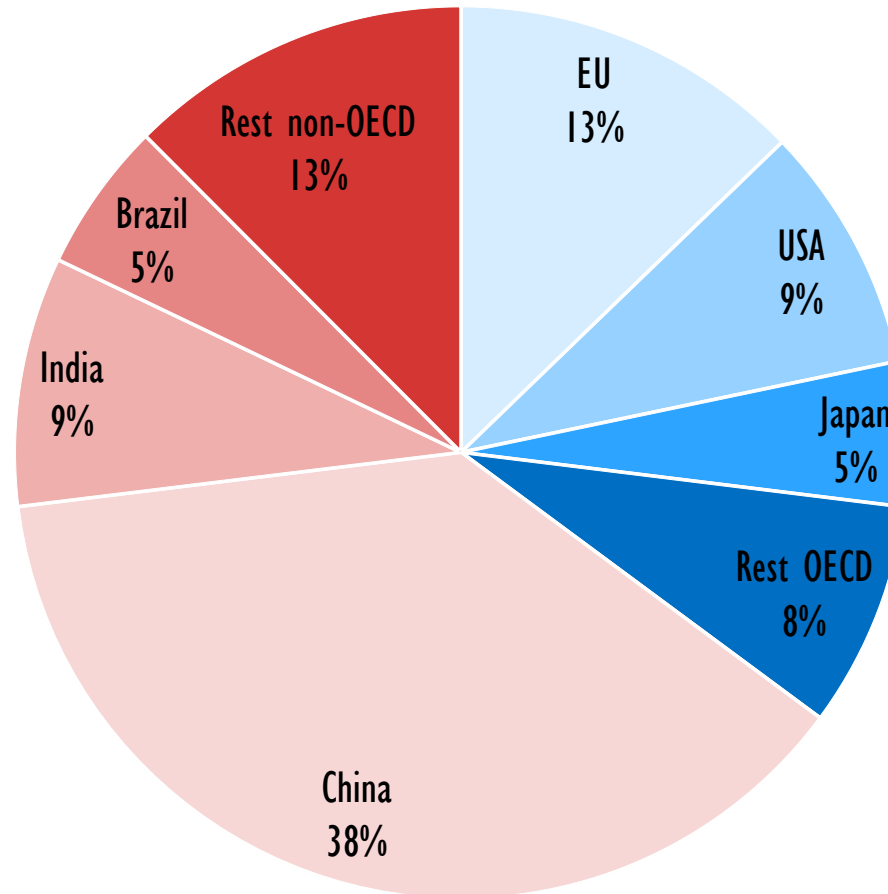
## Power generation cost of existing plants in Asia



***Only very competitively priced LNG has a chance to beat coal in Asia***

# Renewables to lead world power market growth to 2020

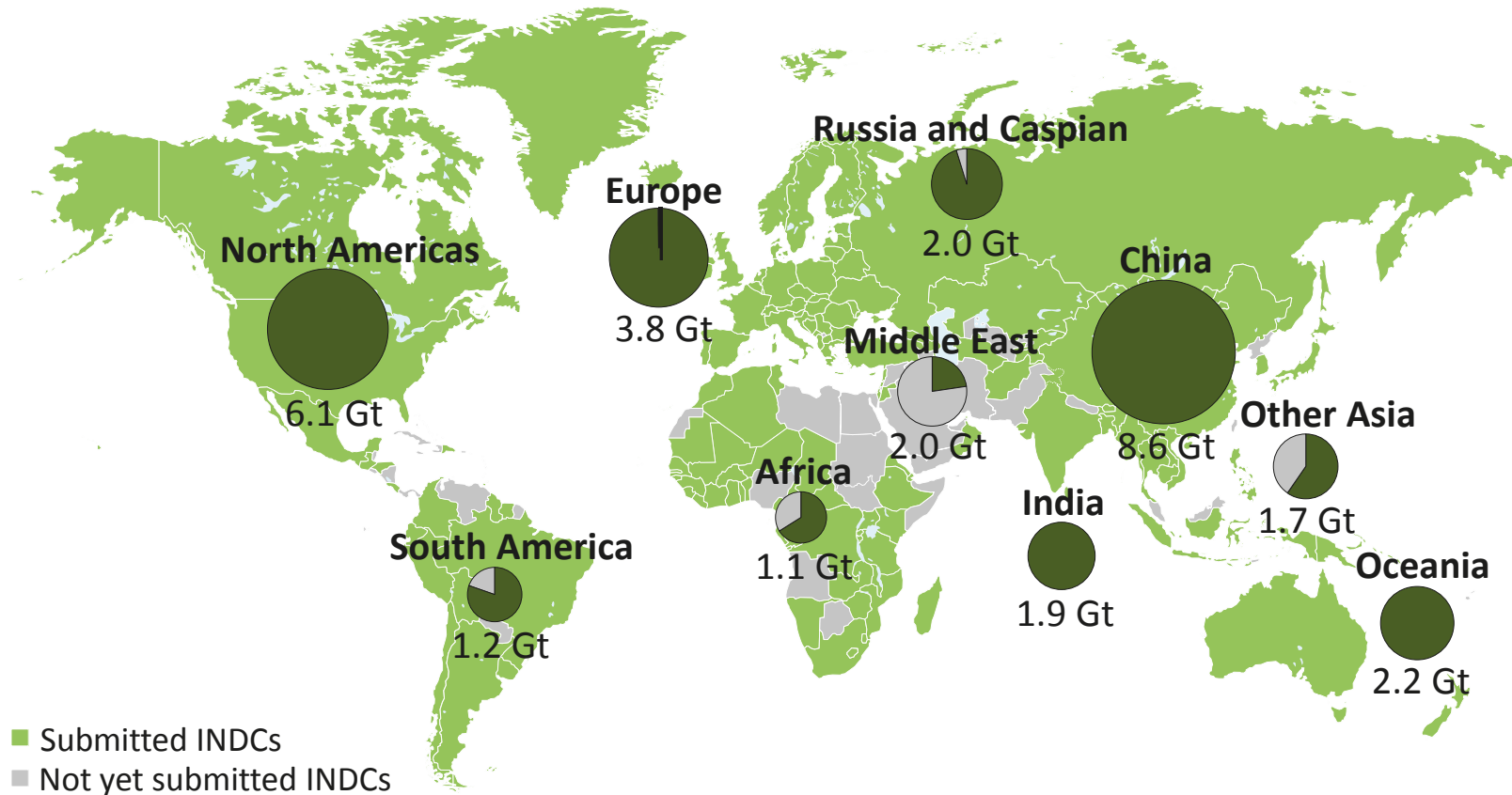
## Shares of net additional renewable capacity, 2014-20



***Renewable electricity additions to 2020 will top 700 GW or almost two-thirds of net additions; Emerging economies make up two-thirds of the expansion***



# The coverage of climate change pledges is impressive

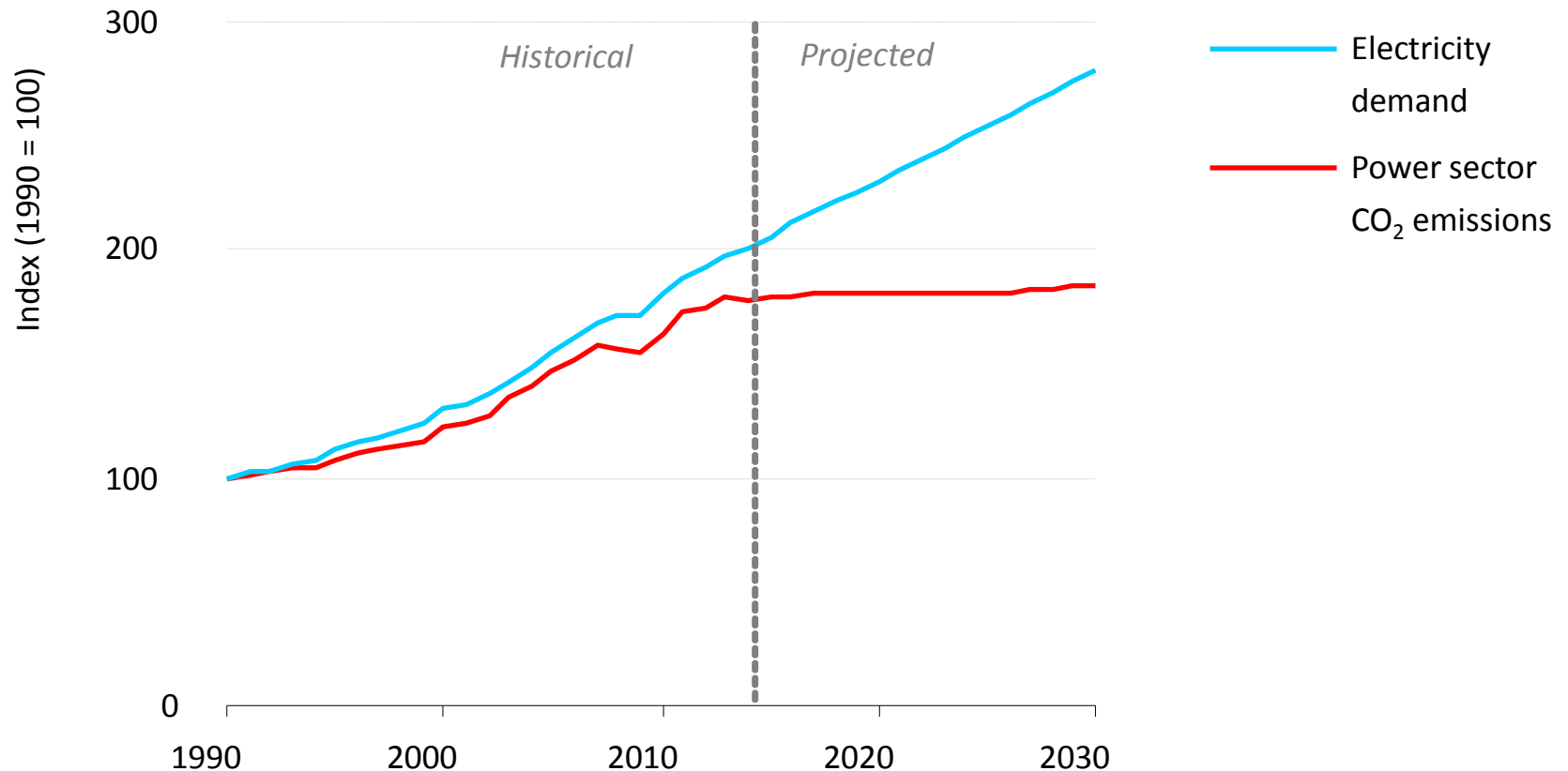


This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

***More than 150 countries submitted climate pledges;  
together these countries account for 90% of global GDP and almost 90% of emissions***

# Demand and emissions growth decouple in the power sector

## Growth in world electricity demand and related CO<sub>2</sub> emissions



***If all INDCs are implemented, power sector emissions stay broadly flat to 2030, despite electricity demand rising by more than 40%***

# Concluding remarks

- Oil at current prices is a powerful driver to rebalance markets, but the big question is just when will equilibrium be restored
  - *Attention paid to energy security appears indexed to oil prices*
- Pressure on natural gas prices is amplified by new supplies, but only very competitively priced LNG has chance to beat coal in Asia
- Investment in renewables remains strong as costs continue to fall, but government support is still crucial
- Climate pledges are an excellent basis from which to build ambition, but not yet enough to achieve our climate goal
- As new IEA Executive Director, “IEA modernisation” is my priority