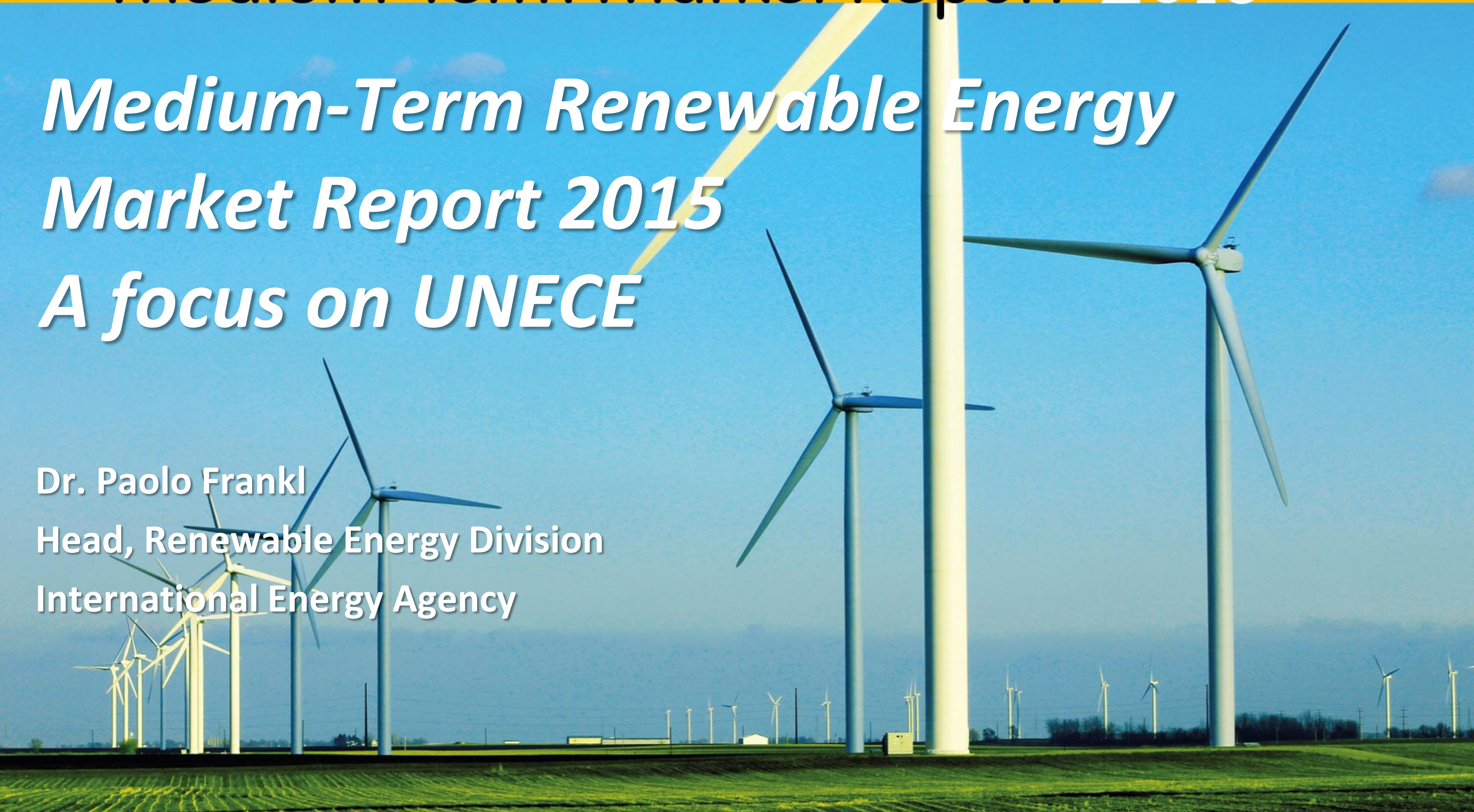
RENEWABLE ENERGY

Medium-Term Market Report 2015

International Energy Agency
Secure Sustainable Together



Medium-Term Renewable Energy Market Report 2015
A focus on UNECE

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International Energy Agency

Market Analysis and Forecasts to 2020

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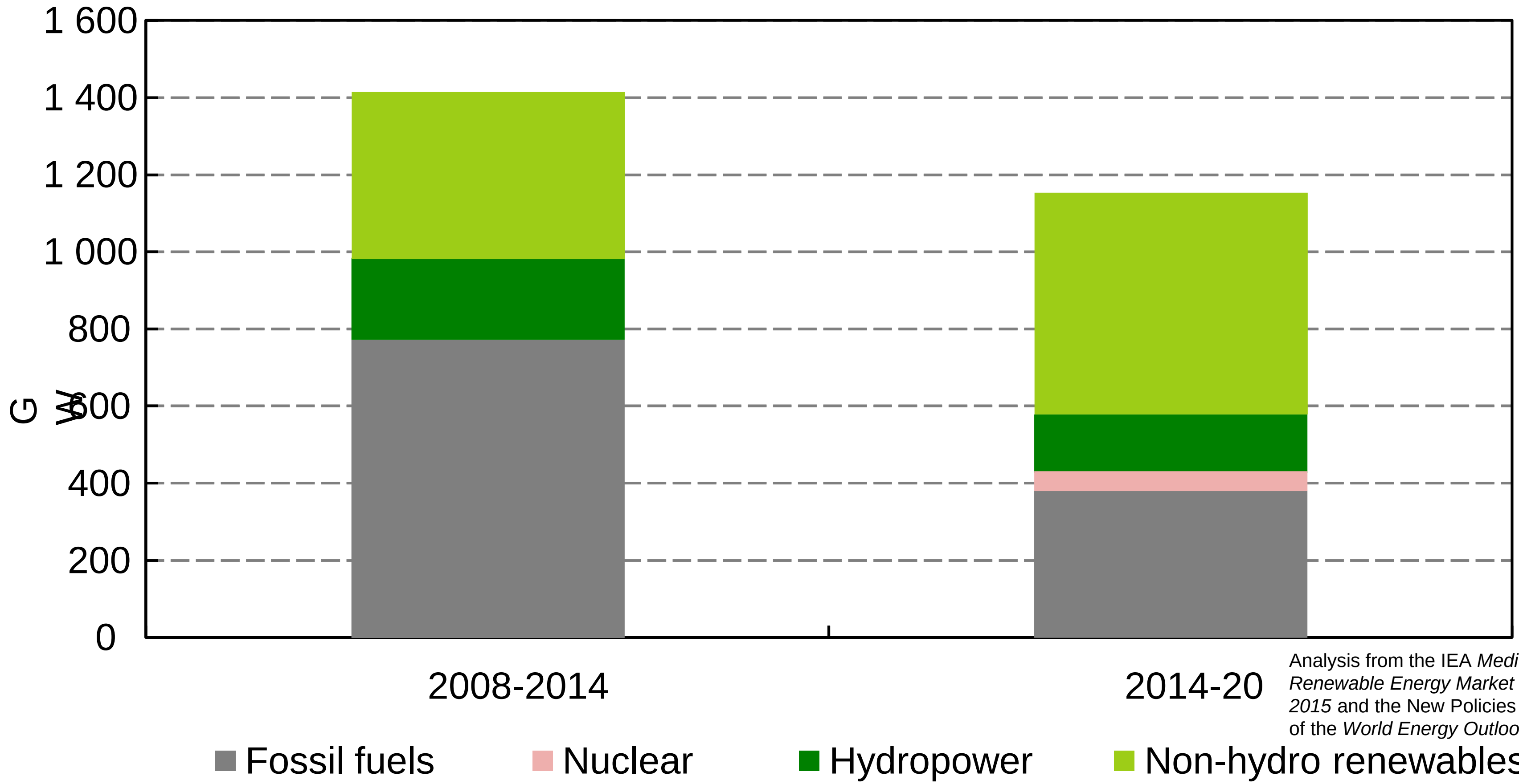
Renewables are becoming the largest source of new power generation capacity

World net additions to power capacity



Analysis from the IEA *Medium-Term Renewable Energy Market Report 2015* and the New Policies Scenario of the *World Energy Outlook 2015*.

The share of renewables in net additions to power capacity continues to rise with non-hydro sources reaching nearly half of the total

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Renewable electricity generation is more than a hydropower story

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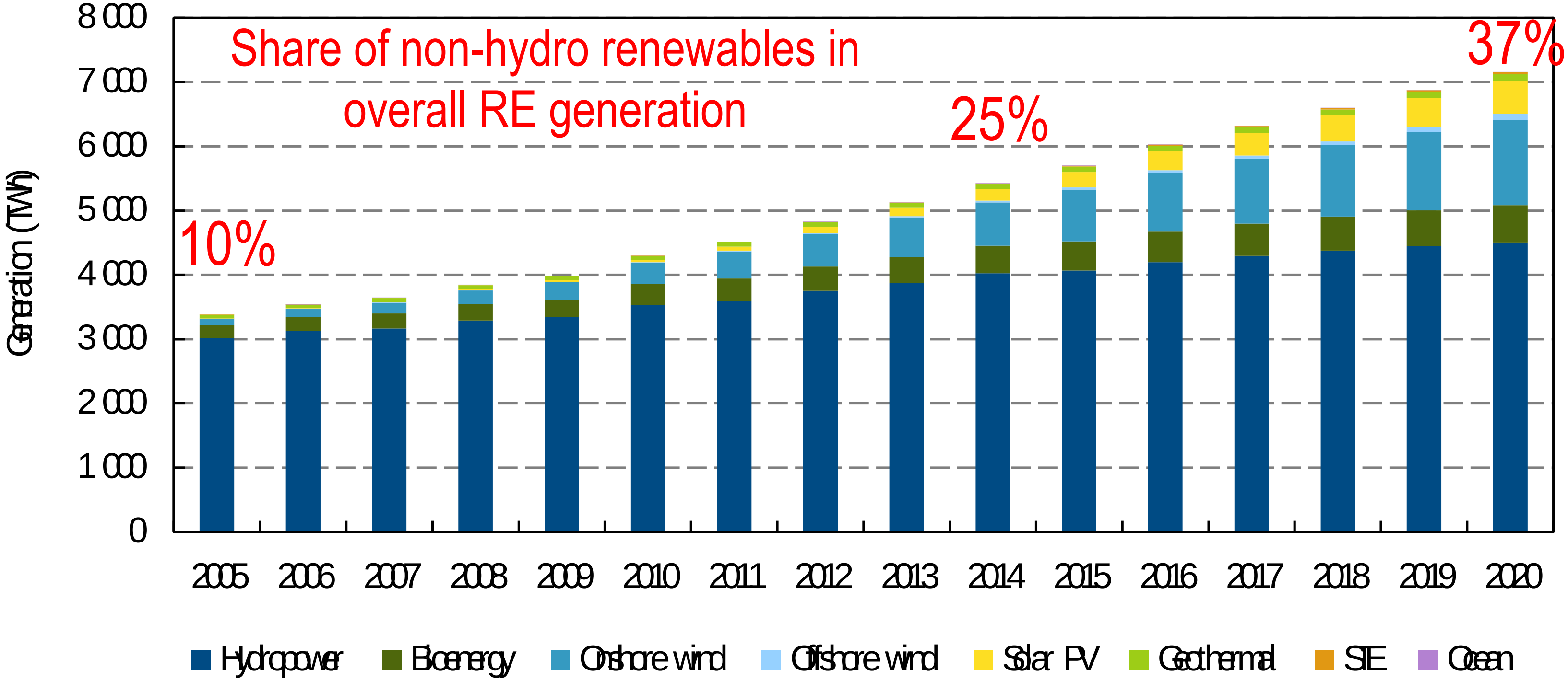
Renewable generation by technology (2005-20)



Share of non-hydropower in renewable electricity generation is expected to increase significantly

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Policies support biofuels output, but structural challenges limit growth

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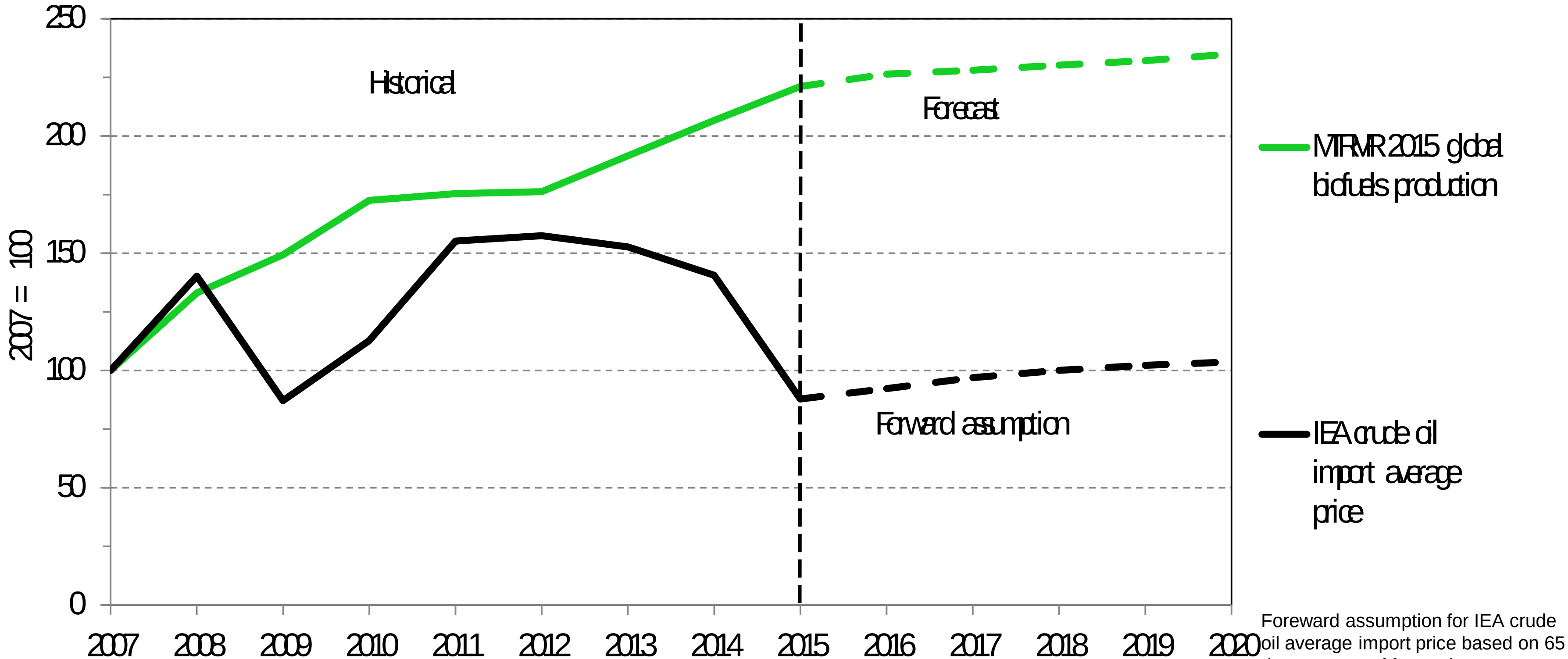
Comparison of global biofuels production and oil prices 2007-20 (indexed)



Foreward assumption for IEA crude oil average import price based on 65 day average of forward contract prices for Brent crude oil.

Blending mandates support demand, even with lower oil prices. <u>Advanced biofuels</u> – needed for long-term decarbonisation of the transport sector – require further support to scale up

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More widespread policy support required in the renewable heat sector

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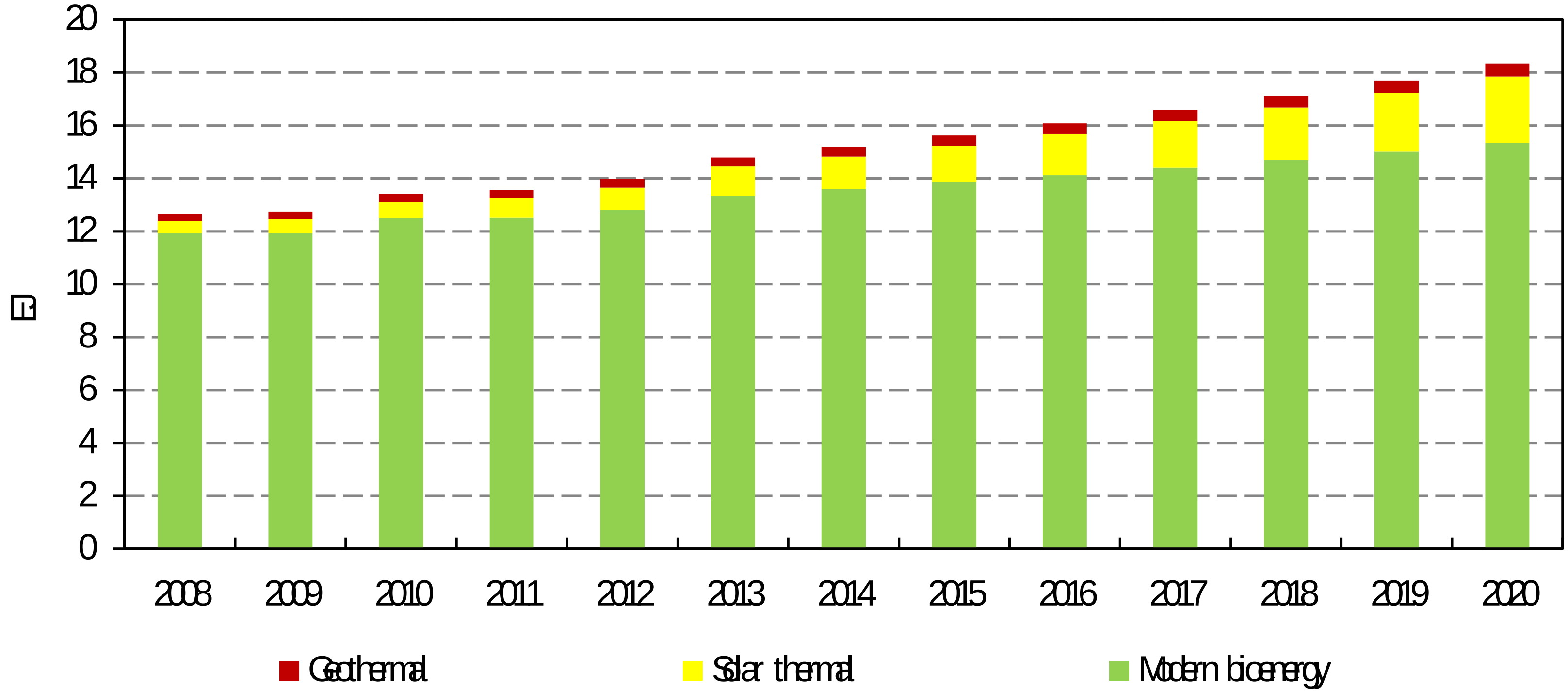
Consumption of modern renewable energy for heat 2008-20



Challenges persist to increasing the contribution of renewables and decarbonising the heat sector, however established renewable heat policies have proved successful.

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Persistent challenges slow growth in heat and transport

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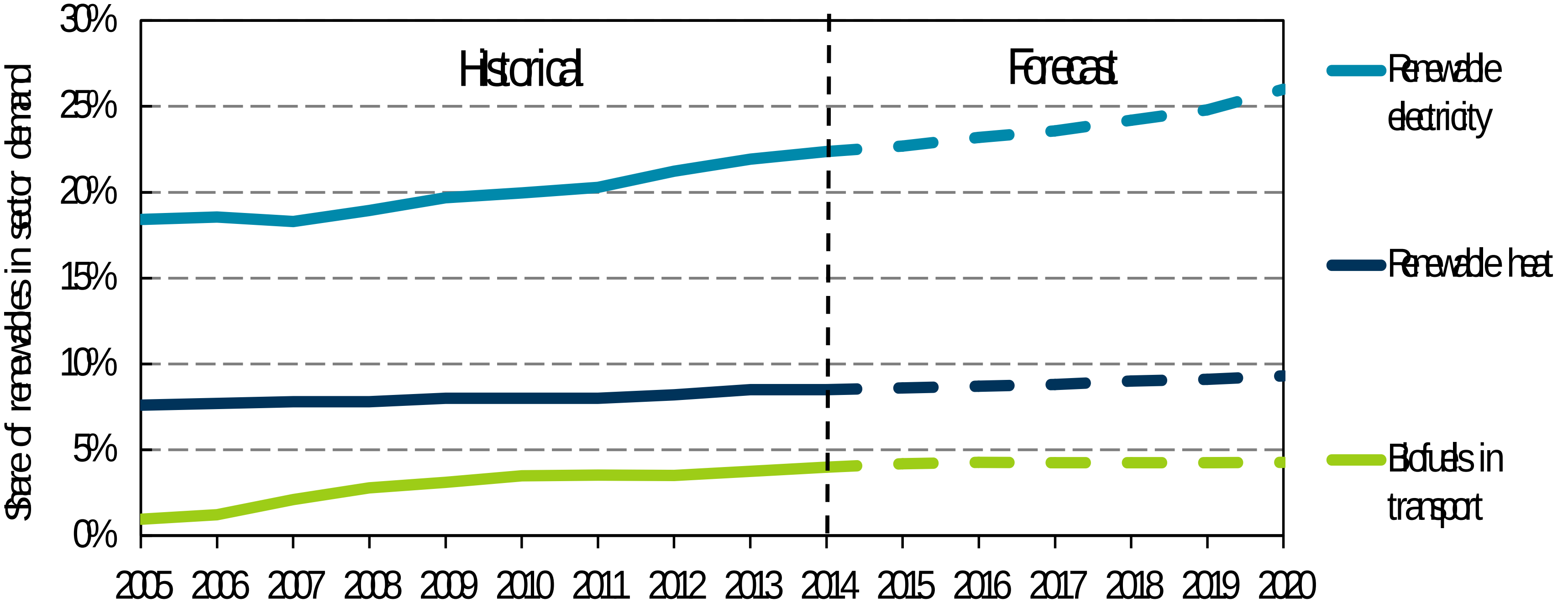
Historical and forecast share of renewables in electricity, heat and transport sectors 2005-20



Growth of renewable electricity generation is increasing, while renewable heat and transport are falling behind.

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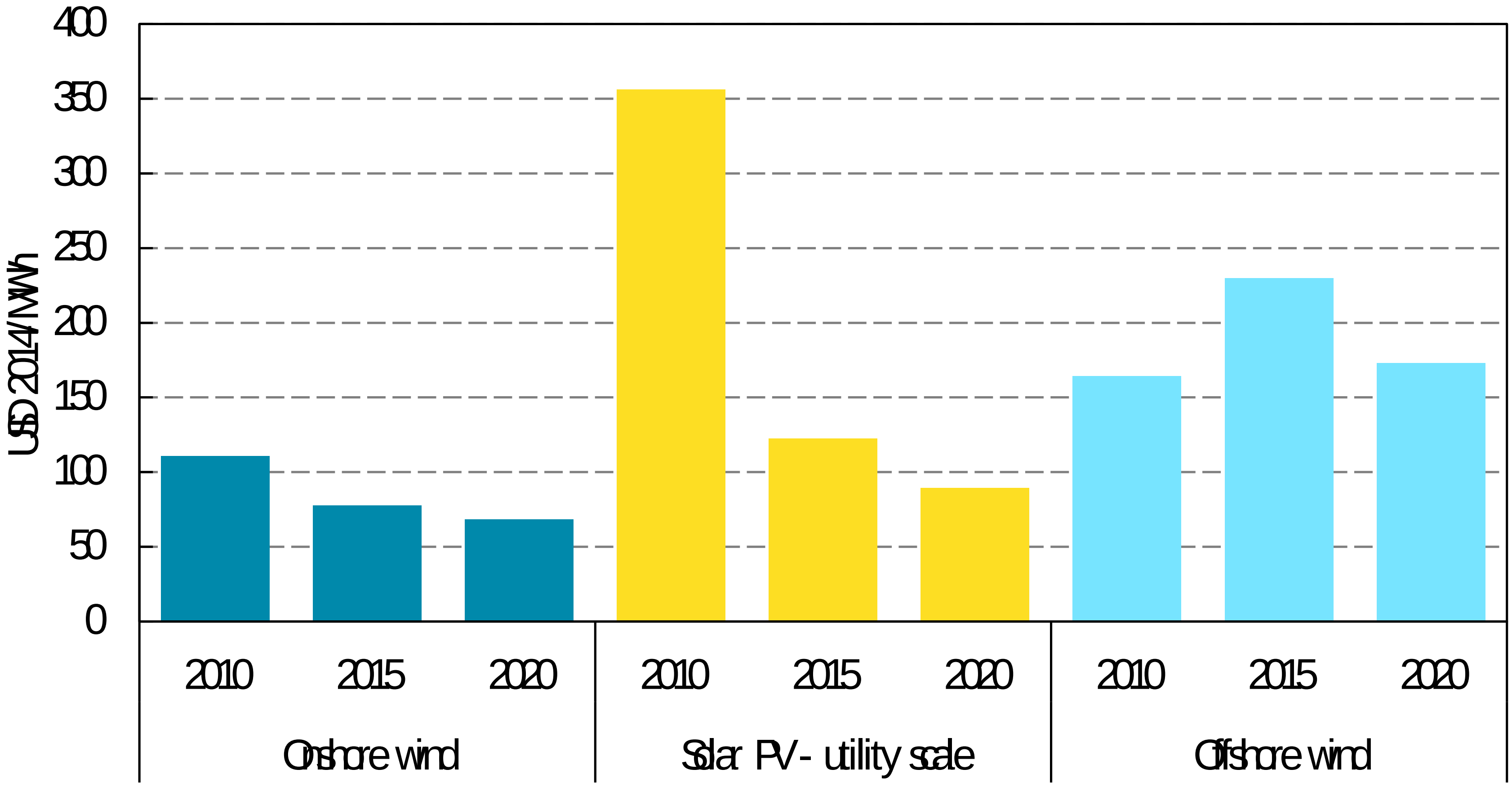
Renewables generation costs will decrease further

Historical and forecast global weighted average generation costs for new plants



High levels of incentives are no longer necessary for solar PV and onshore wind, but their economic attractiveness still depends on the regulatory framework and market design

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Evidence of lower costs on the horizon

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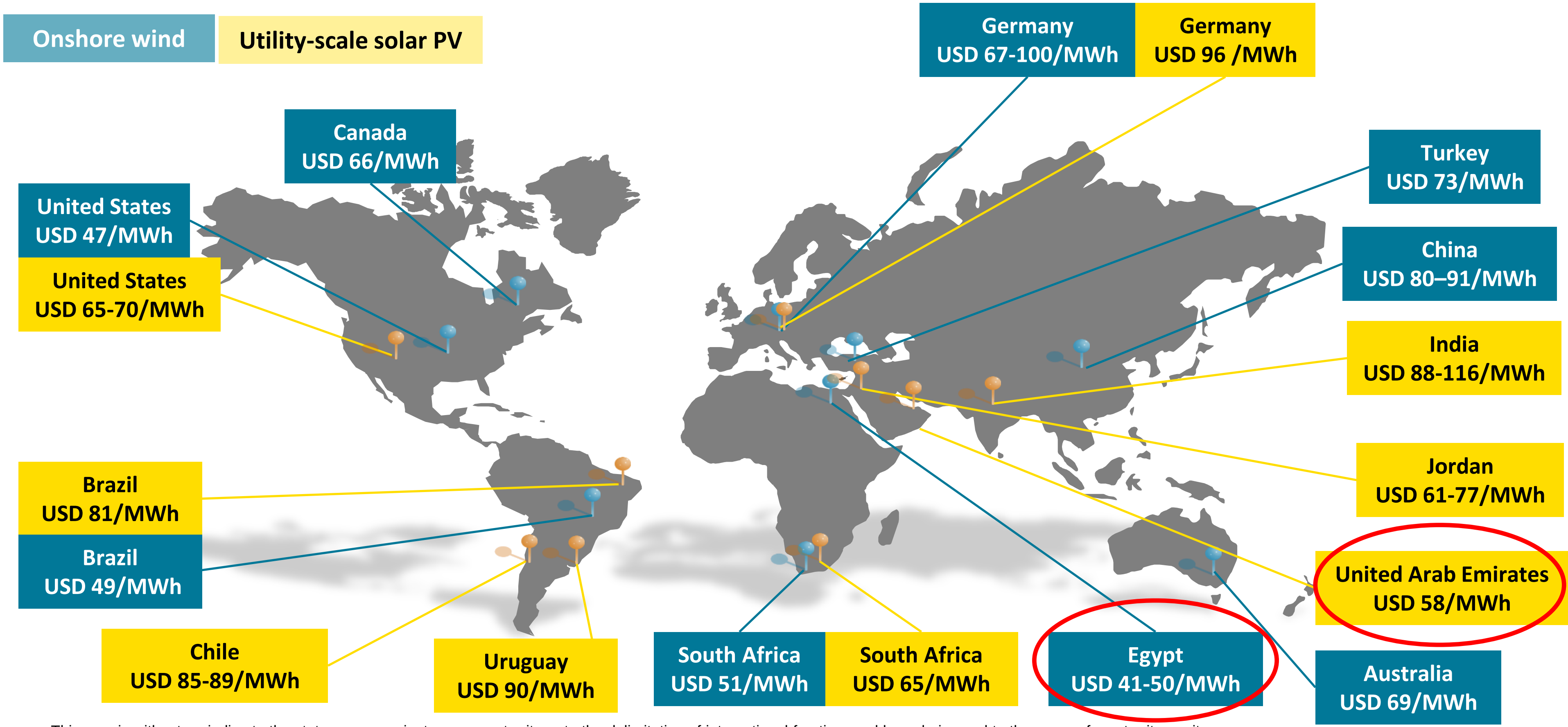
Recent announced long-term contract prices for new renewable power



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

A combination of price competition, long-term contracts, good resources and financial de-risking measures is creating deployment opportunities in newer markets and at lower costs

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More renewables for less money

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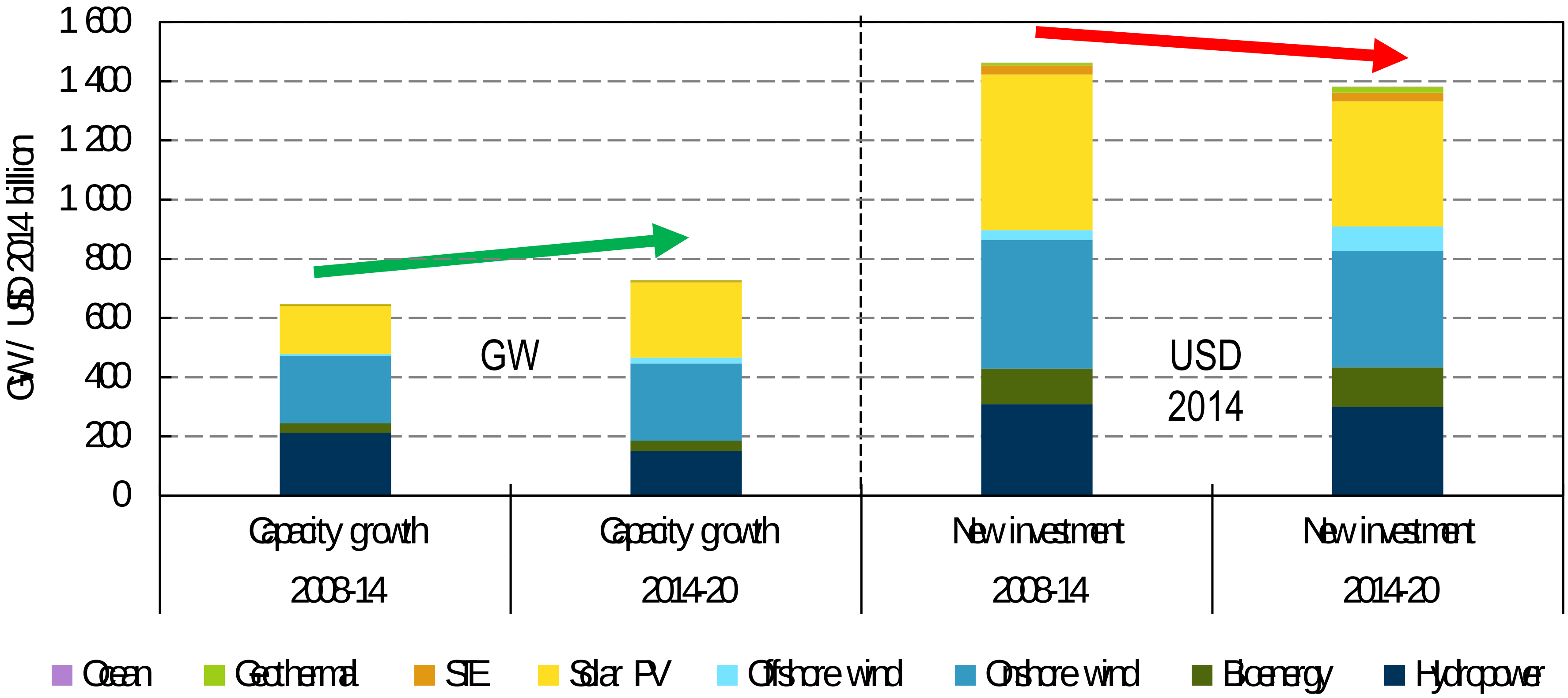
Renewable power capacity – net additions versus new investment



Wind and solar PV comprise two thirds, or USD 900 billion, of new investment needs to 2020 and capacity increases are being made at lower cost than in the past

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Can renewables get back on track to meet climate change goals?

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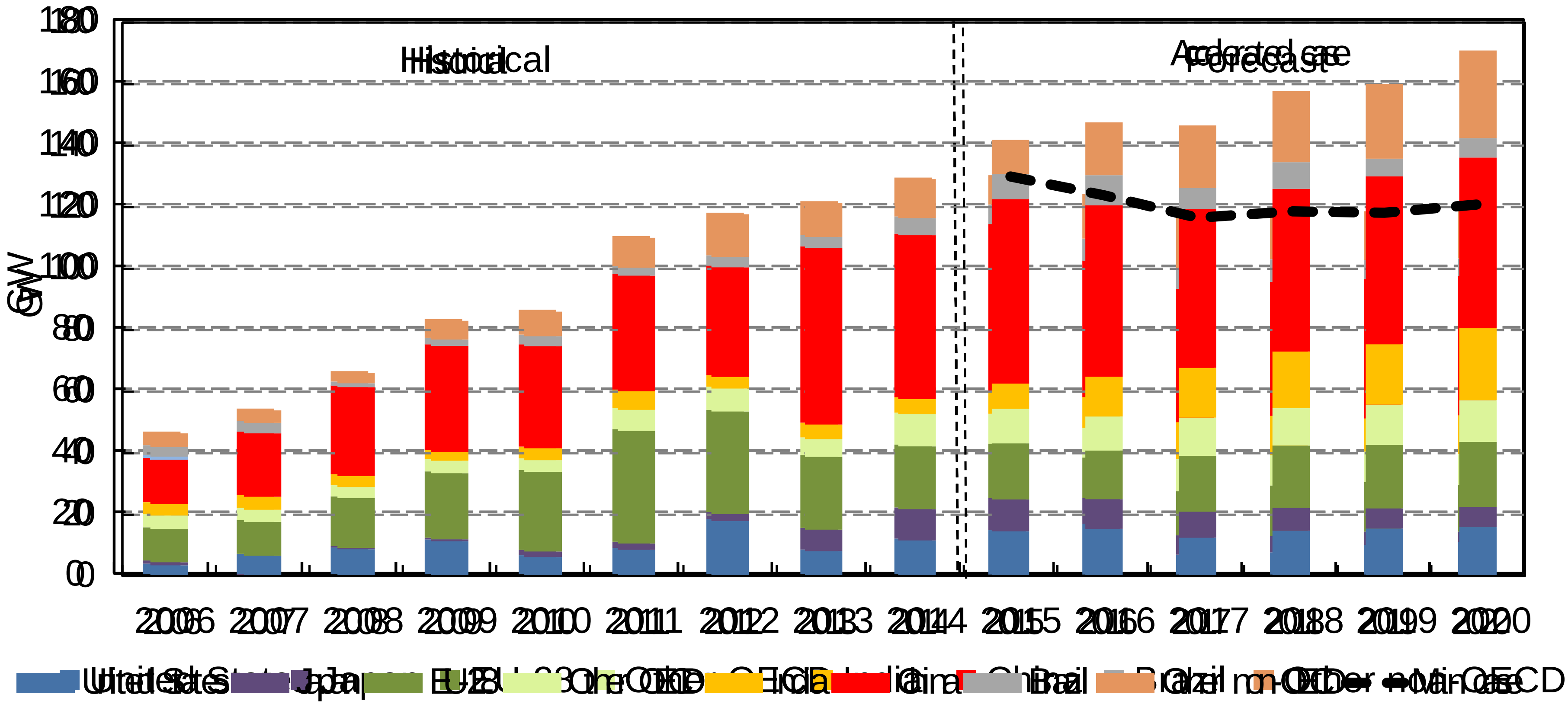
World renewable power capacity growth, main versus accelerated case



With policy enhancements renewables can be back on track to meet long-term climate change goals

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Slow renewable growth expected in non-OECD Europe Eurasia

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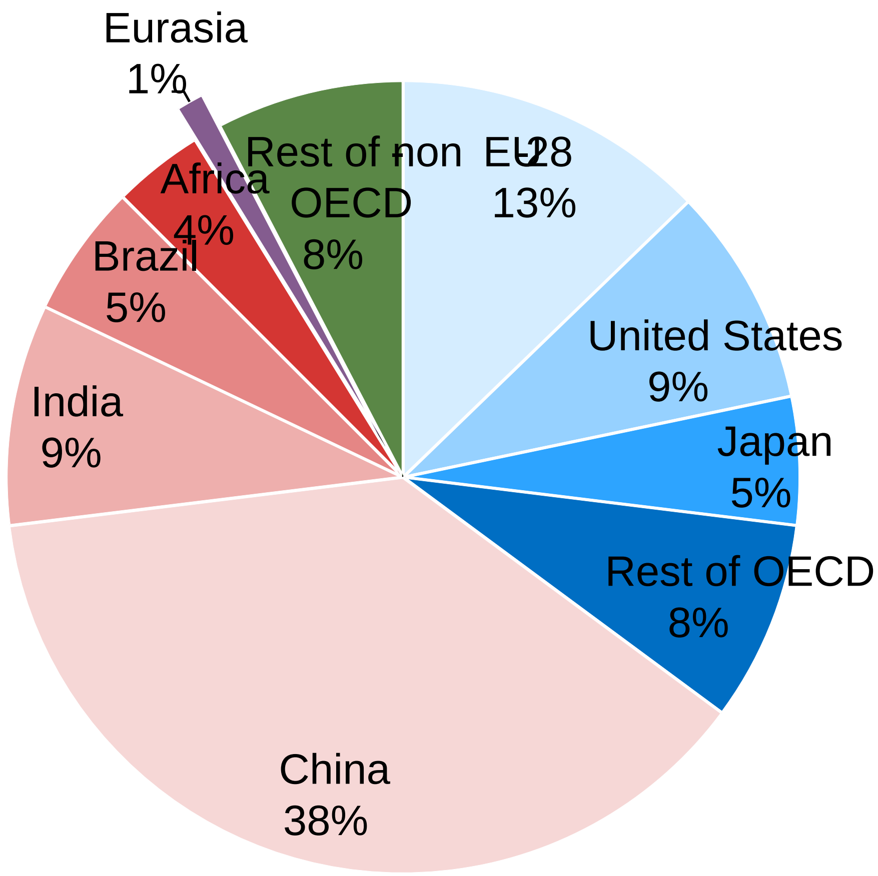
Shares of net additional renewable capacity, 2014-20



Eurasia only represents 1% of global renewable growth despite strong growth in the non-OECD region. Grid integration, market access and policy uncertainties are main challenges.

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Renewable additions in UNECE still small but wind and solar PV to contribute more

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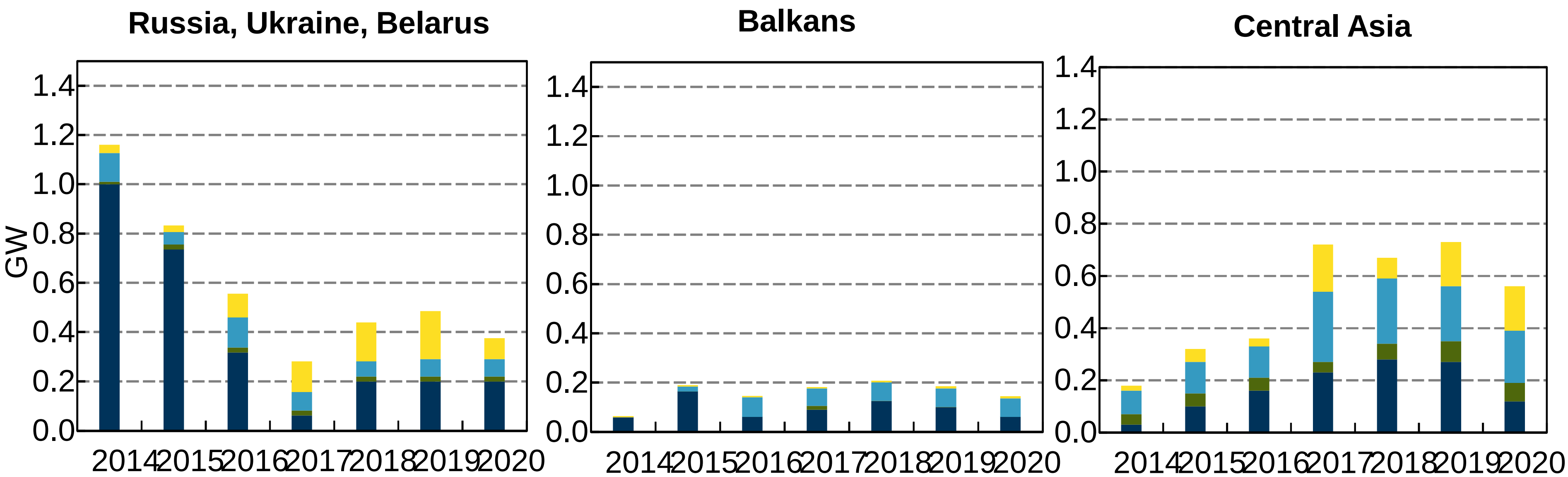
Annual net additions to renewable capacity, 2014-20



Renewable capacity in 2014: 59.4 GW
% of hydropower: 95%

Renewable capacity in 2014: 7.8 GW
% of hydropower: 99%

Renewable capacity in 2014: 23.6 GW
% of hydropower: 98%

Hydropower is a dominant renewable energy source in the region with wind and solar PV to grow from a low base.

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A decisive moment for the future of renewables

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- Increasingly affordable renewables are set to dominate the growing power systems of the world
- The effect of the lower oil price environment on global renewable growth is more perception than reality, though biofuels are an exception
- Yet, wavering policy commitments risk undermining investor confidence and are dampening growth
- While variability of renewables is a challenge energy systems can learn to adapt to, variability of policies poses a far greater risk
- Renewables set to grow in UNECE but major barriers still persist

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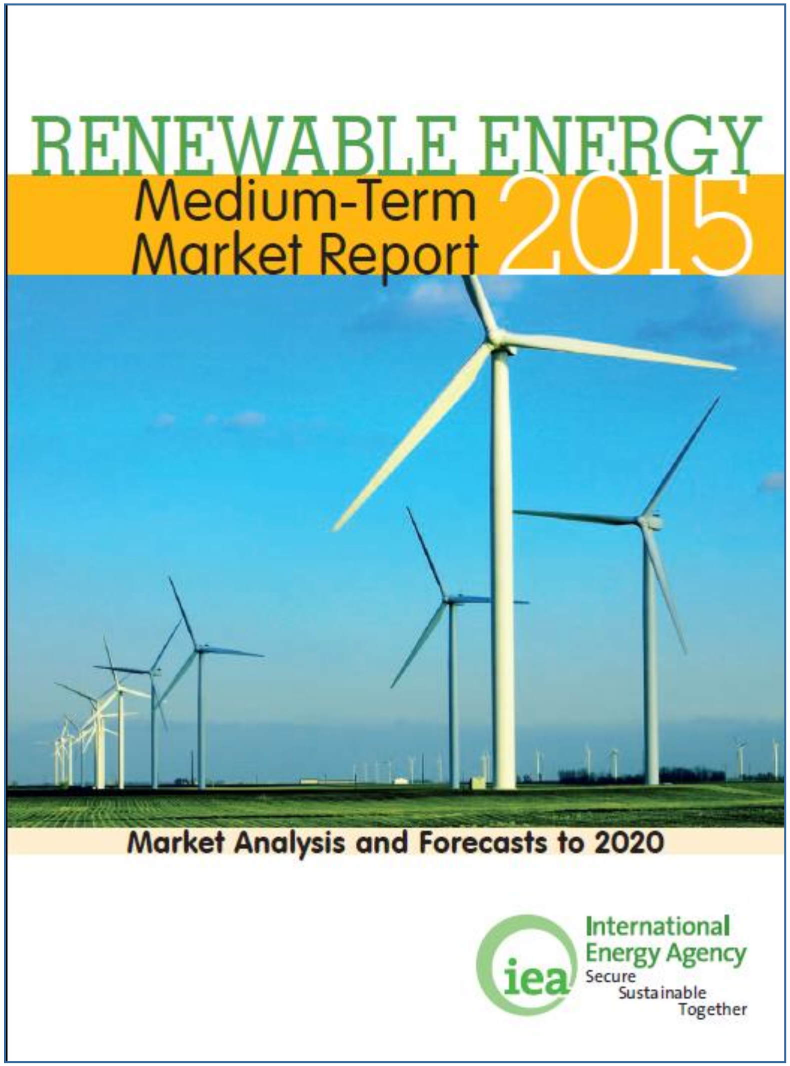
For further insights and analysis



- **The Medium-Term Renewable Energy Market Report 2015 can be purchased at:**

  www.iea.org/bookshop/

- **Thank you for your attention!**

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