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Energy Agency

Secure • Sustainable • Together

Renewables and the energy transition

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Renewable Energy Division

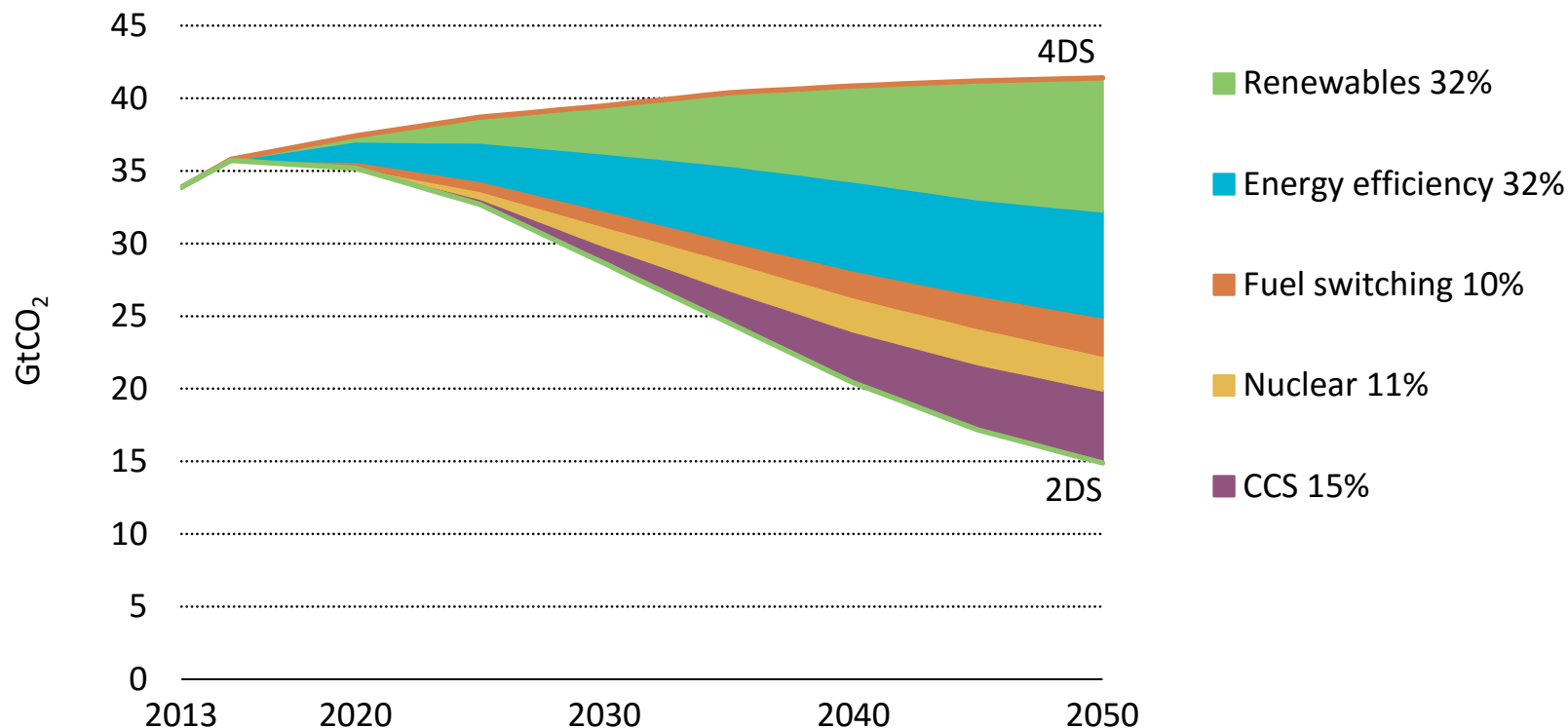
*Laying the foundation in the UNECE region for economic integration
and sustainable development towards 2030*

Minsk, 27 October 2016

www.iea.org

Meeting the climate change challenge

Contribution of technology area to global cumulative CO₂ reductions



Renewables, together with energy efficiency, will have to provide almost two-thirds of required CO₂ emission reductions

The good news: renewables are on the up

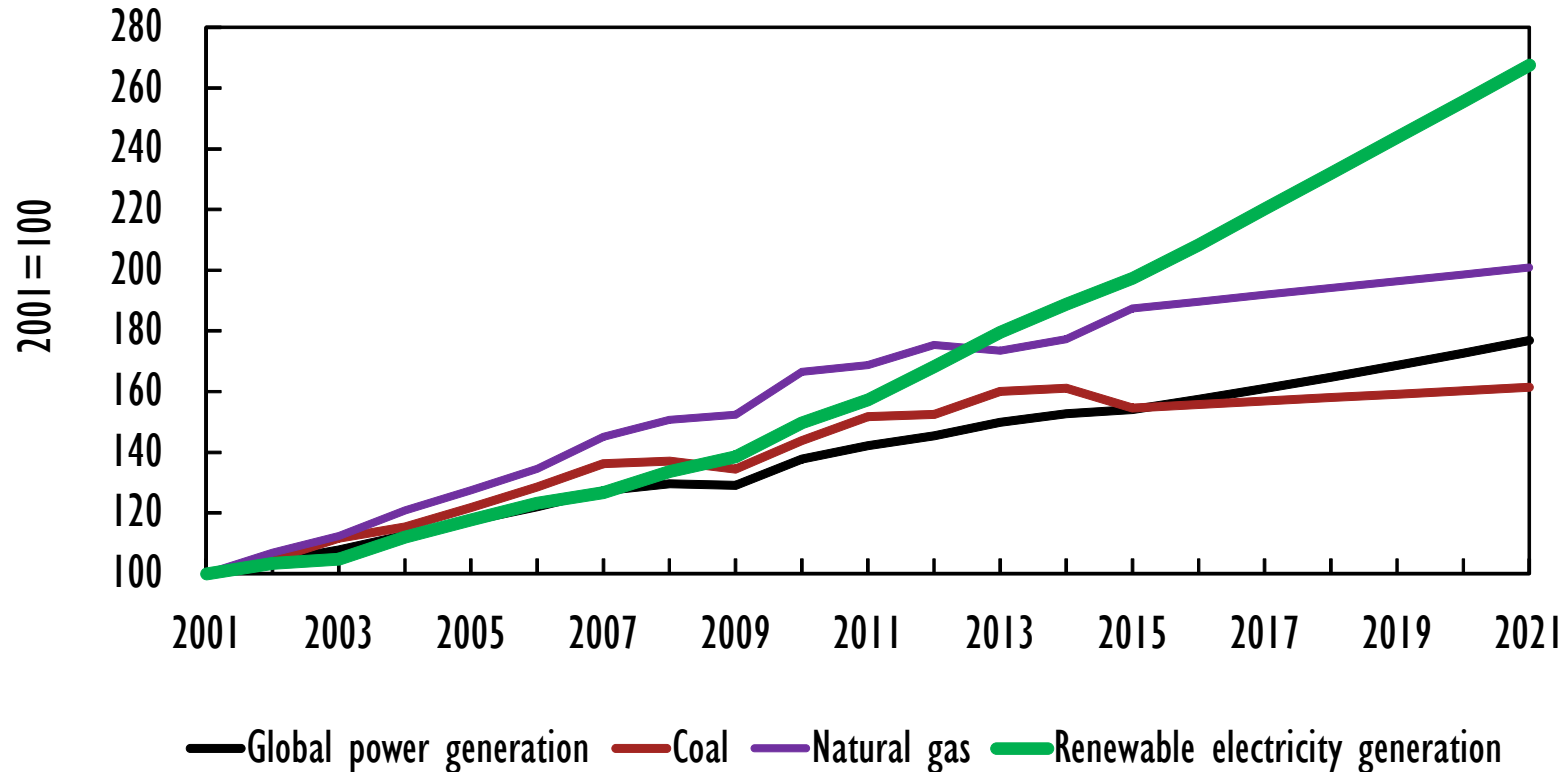
- **2015 was a year of records for renewable electricity**
 - *A record amount of new capacity was installed in 2015*
 - *Total capacity has now overtaken coal*
- **COP21 Paris Agreement gives momentum to renewables**
- **Local air pollution & energy security are also key drivers**
- **Energy investment flows confirm shift to renewables**

Renewables to remain fastest growing source of electricity generation

RENEWABLE
ENERGY

Medium-Term
Market Report
2016

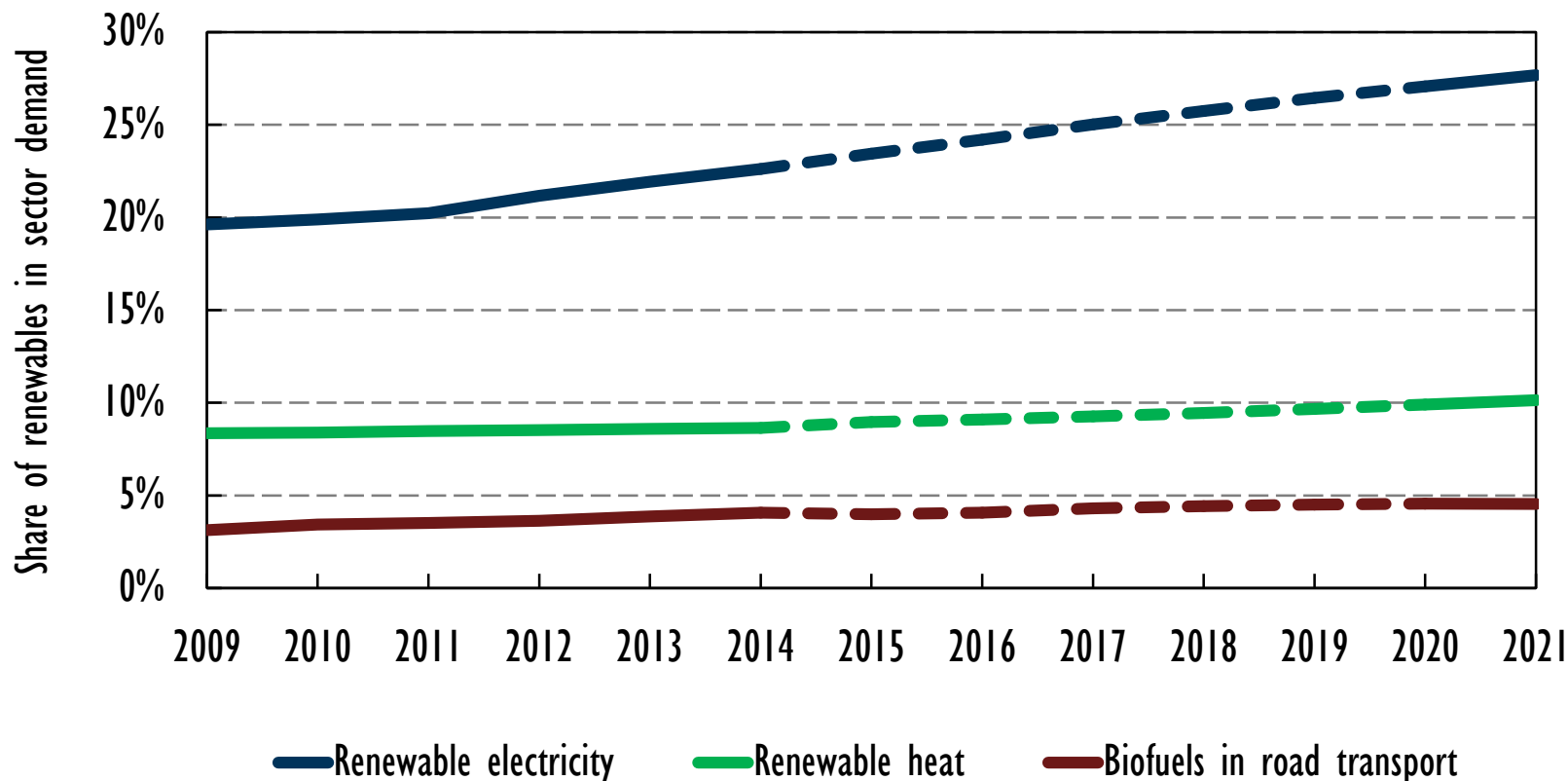
Indexed electricity generation by fuel (2001-21)



Generation from renewables to rise by almost two-fifths over 2015-2021, pushing their share of total electricity generation from 23% to 28%

Renewables dominate electricity growth, but less progress in heat and transport

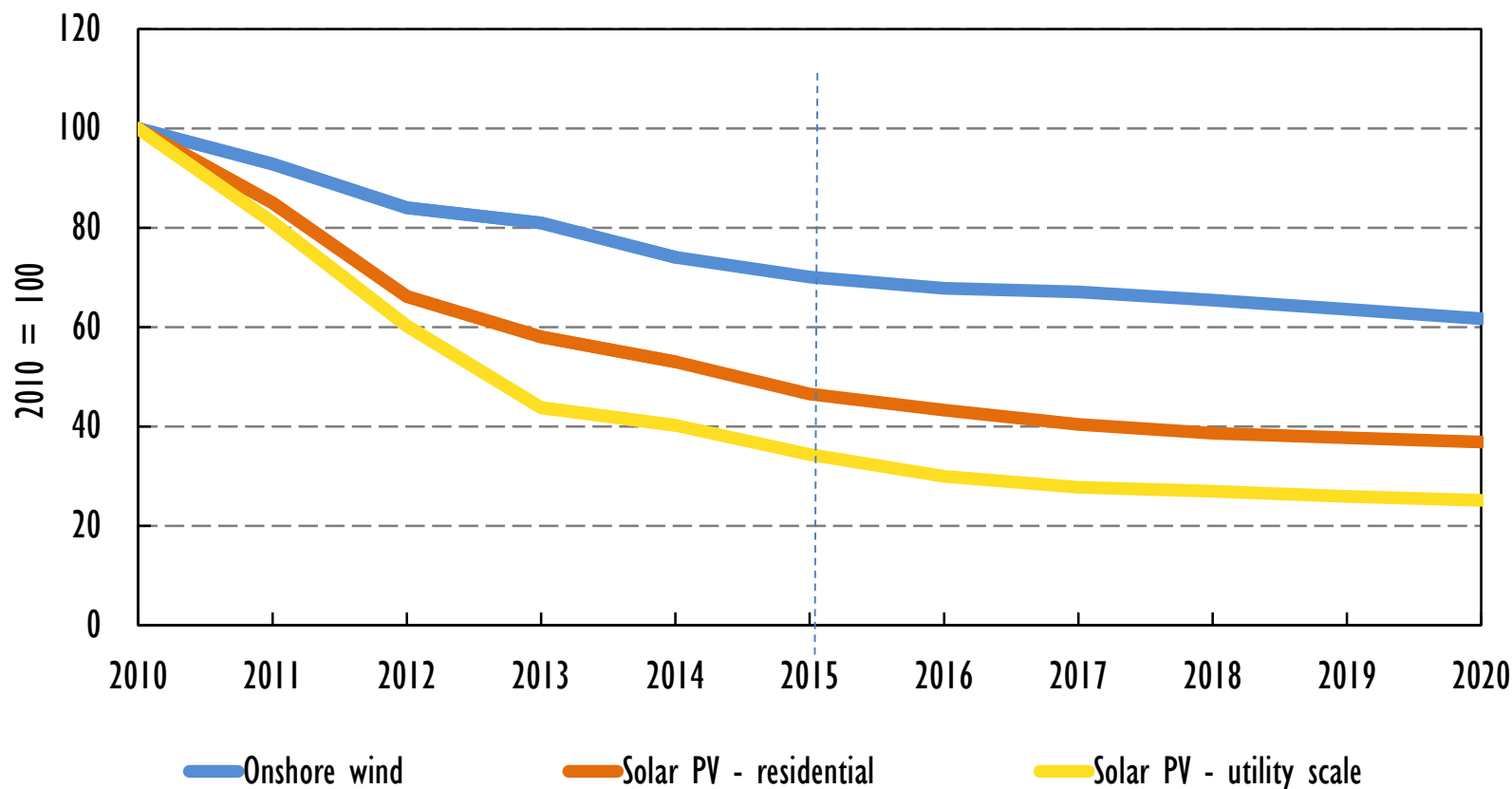
Share of renewables in electricity, heat and transport sectors



The share of renewables rises in all sectors, despite persistent challenges in heat & transport; interactions between energy efficiency & renewables become critical

Rapid cost reductions mean high levels of incentives are no longer needed for solar PV and onshore wind

Indexed generation costs

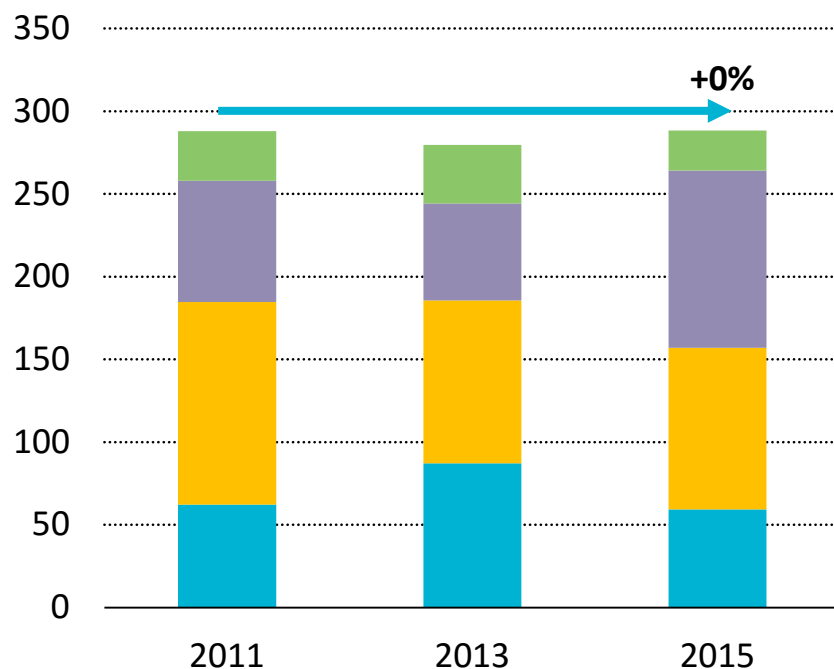


However, economic attractiveness still depends on regulatory framework and market design

More power for the same amount of money

Global renewable power investment

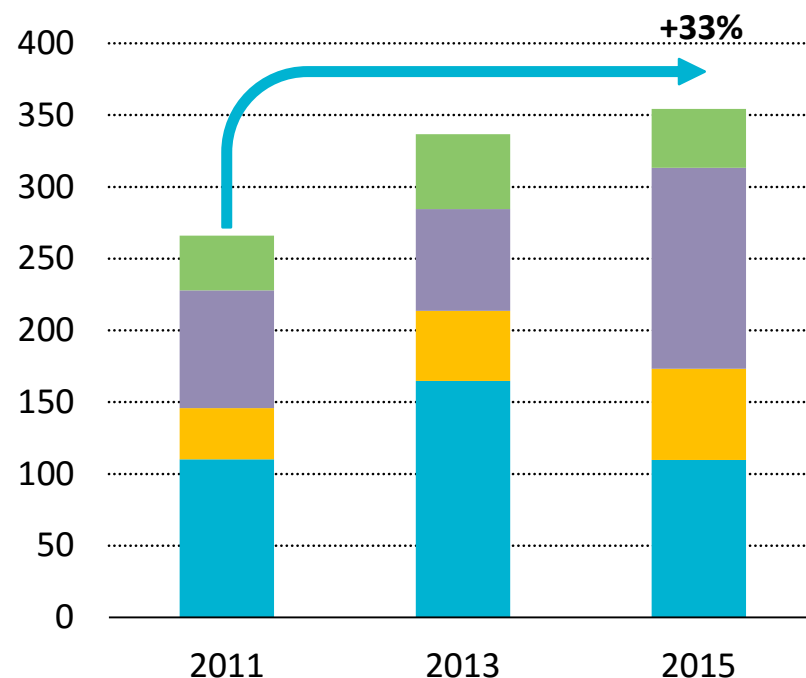
USD (2015) billion



■ Hydropower ■ Solar PV ■ Wind ■ Other renewables

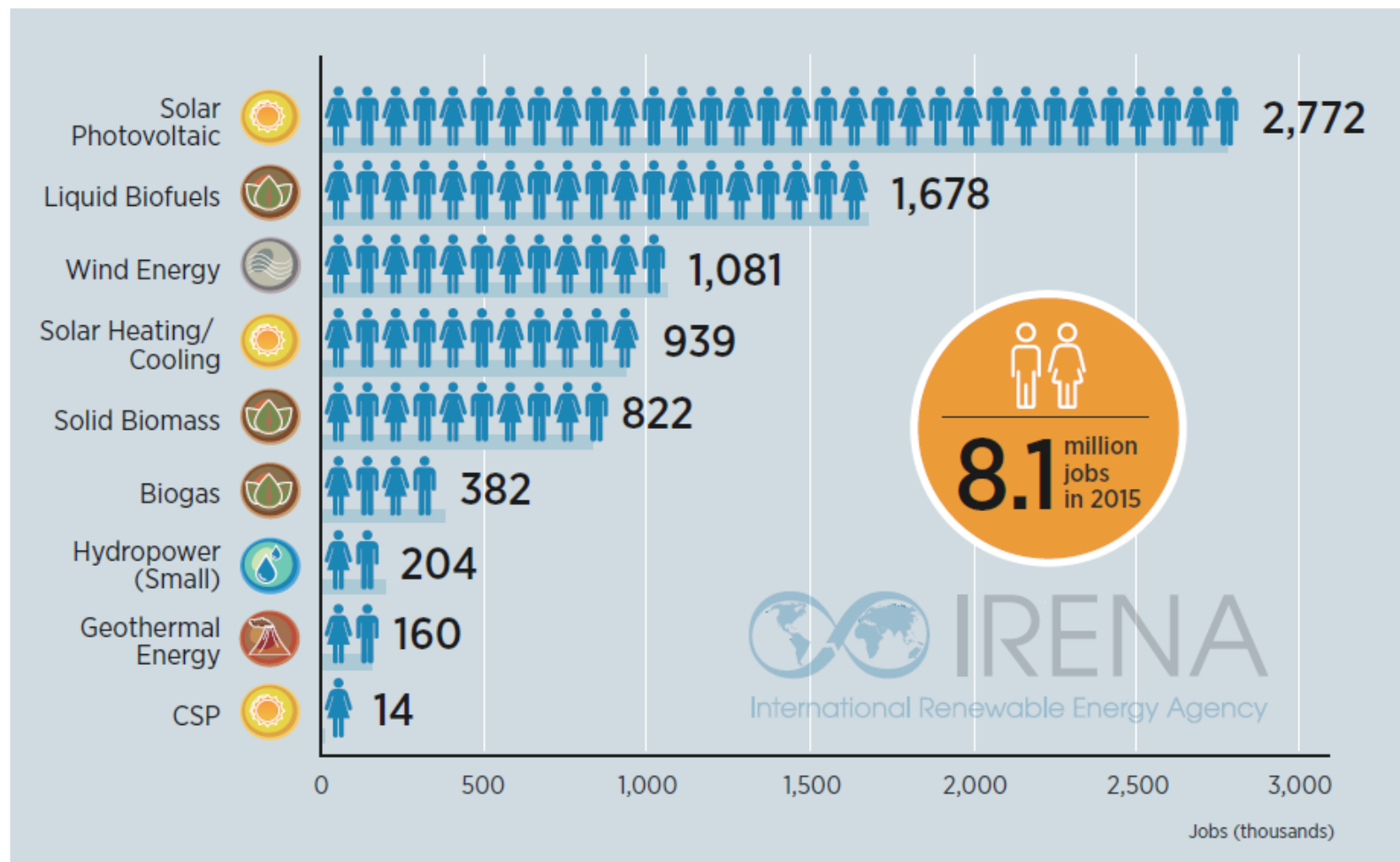
Expected generation from investment

TWh



Wind capacity surged by 35% on improved economics & record offshore growth

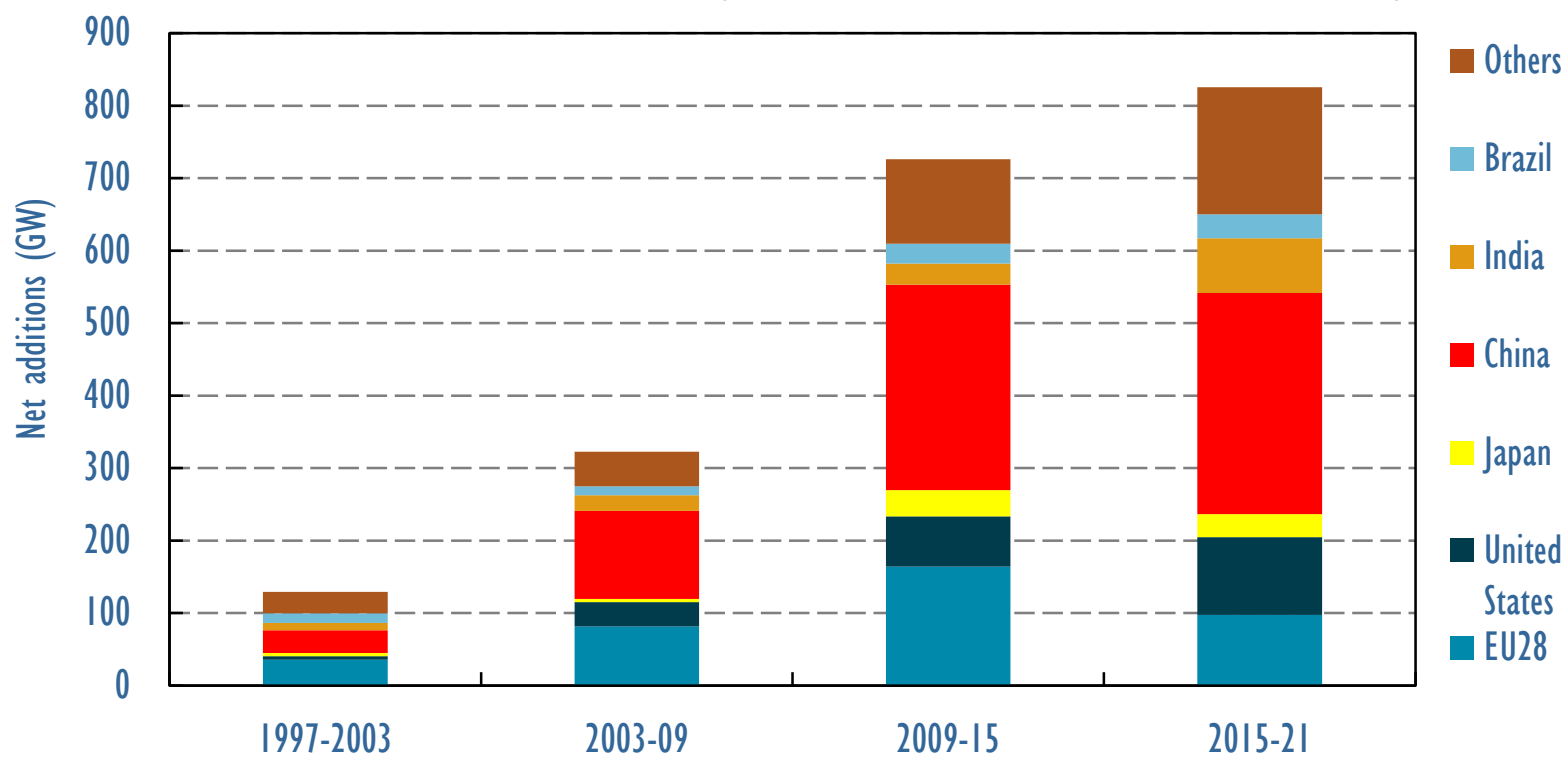
Renewables create jobs



Source: IRENA, 2016

Six markets will provide close to 80% of new renewable additions over 2015-21

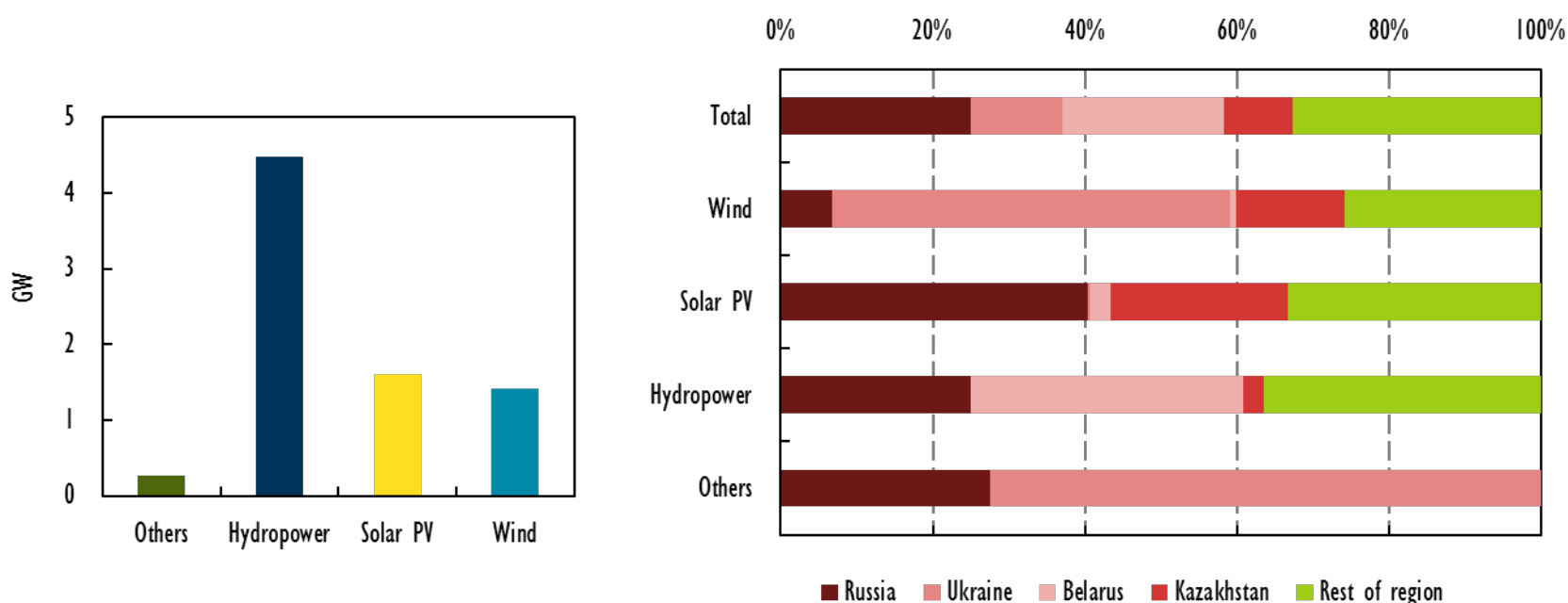
Global renewable electricity net additions to power capacity



China remains the largest global renewables market but the US for the first time becomes the second largest growing market globally.

But UNECE region trails behind

Eurasia: net renewable capacity additions (2015-21)

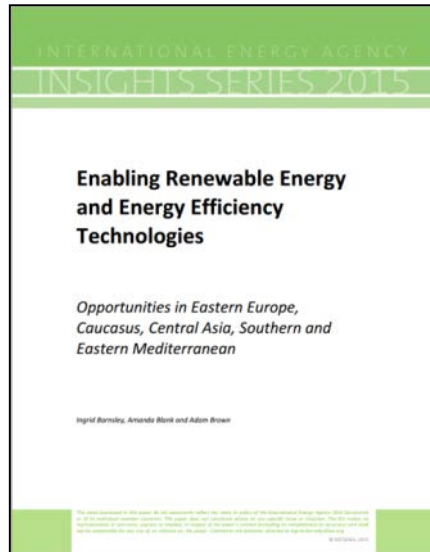


Despite good renewables potential, 2015 capacity additions down for the 4th consecutive year, from 1.1 GW (2014) to 0.4 GW due to weak macroeconomic conditions and political instability.

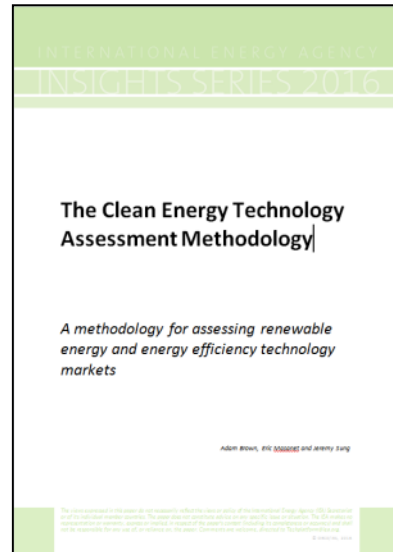
Conclusions

- **Renewables are essential for meeting global climate targets**
- **Multiple benefits (energy security, jobs, air pollution)**
- **Policy strengthening is key for UNECE region:**
 - Targets and strategies/action plans
 - Level playing field (c.f. fossil fuel subsidies)
 - Investment de-risking
 - Appropriate market rules and regulations

IEA Enabling Clean Energy Technologies study



Policy paper
(June 2015)

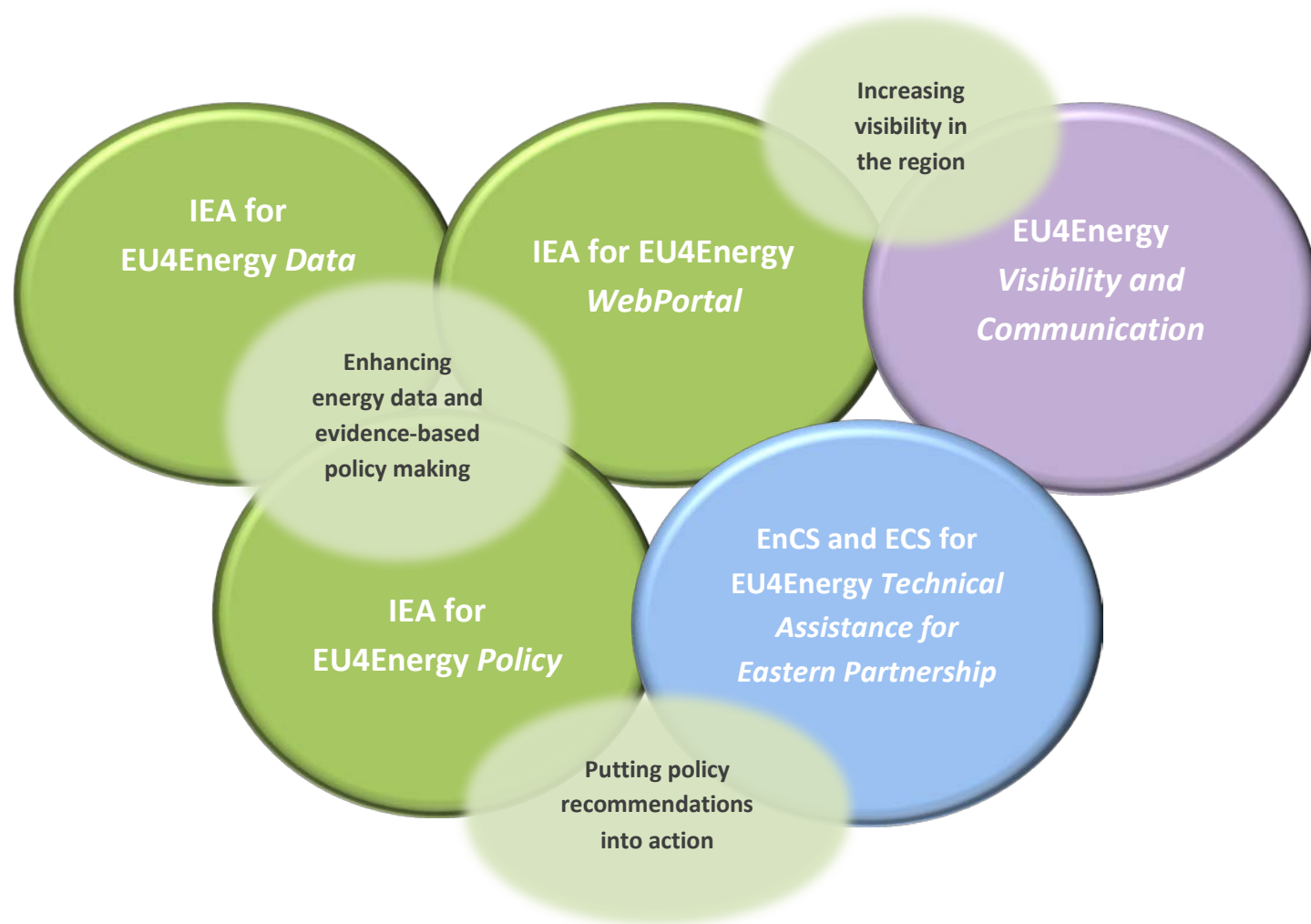


Methodology paper
(June 2016)



Pilot studies: Belarus, Morocco & Kazakhstan
(June - July 2016)

EU4Energy programme framework



**Armenia,
Azerbaijan,
Belarus,
Georgia,
Kazakhstan,
Kyrgyzstan,
Moldova,
Tajikistan,
Turkmenistan,
Ukraine
Uzbekistan**

Thank you - Спасибо!

