

Global Renewable Energy Trends



Gurbuz Gonul

Head of Regions Unit and Acting Director, Country Support and Partnerships, IRENA
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Established in 2011.

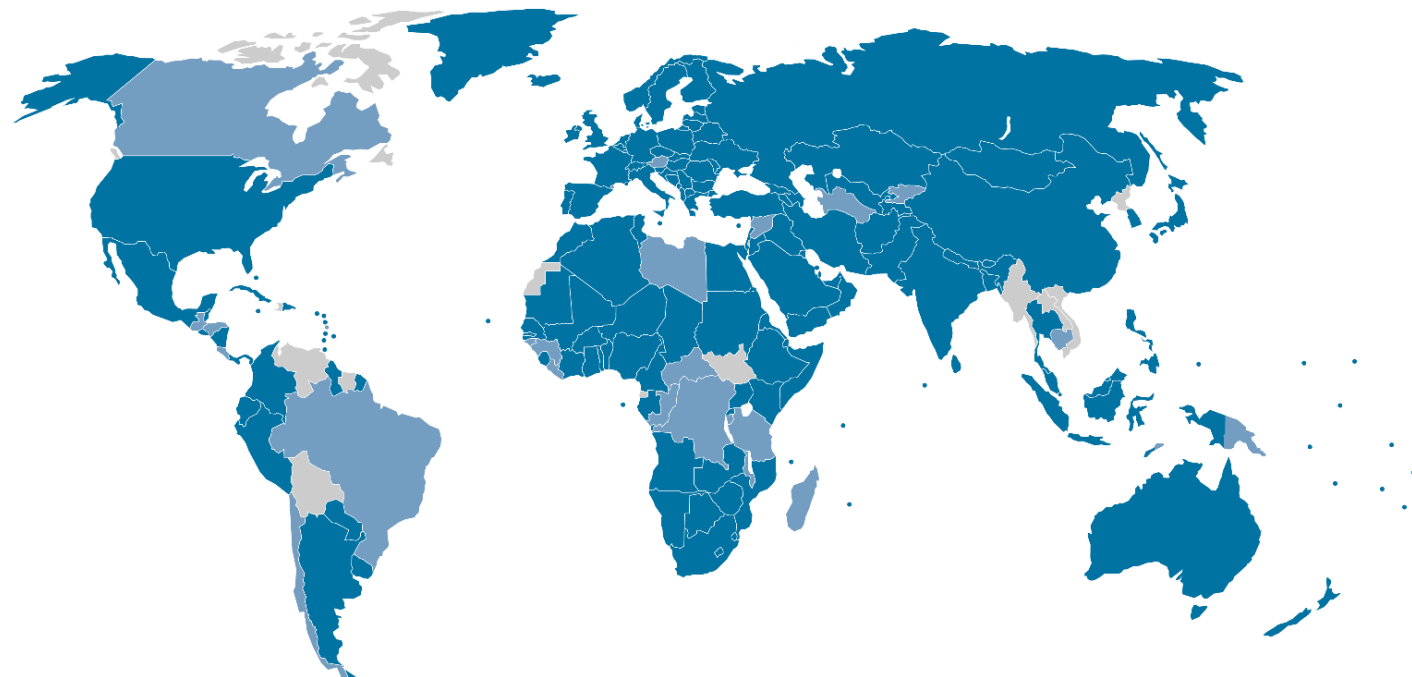
158 Members

24 States in accession.

Mandate: promote the widespread adoption and sustainable use of all forms of renewable energy worldwide

IRENA serves as:

- Centre of excellence for knowledge and innovation
- Global voice of renewables
- Network hub
- Source of advice and support



BIOENERGY



GEOTHERMAL
ENERGY



HYDROPOWER



OCEAN
ENERGY

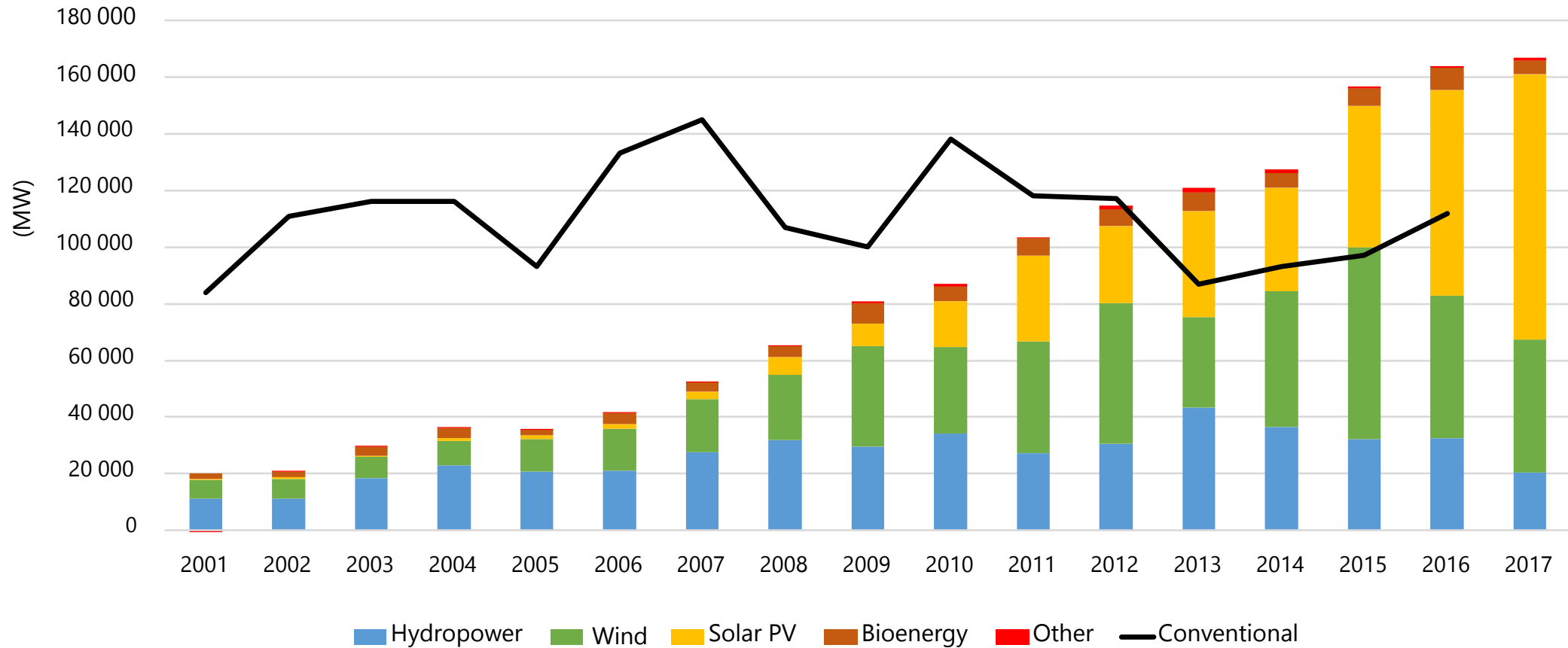


SOLAR
ENERGY



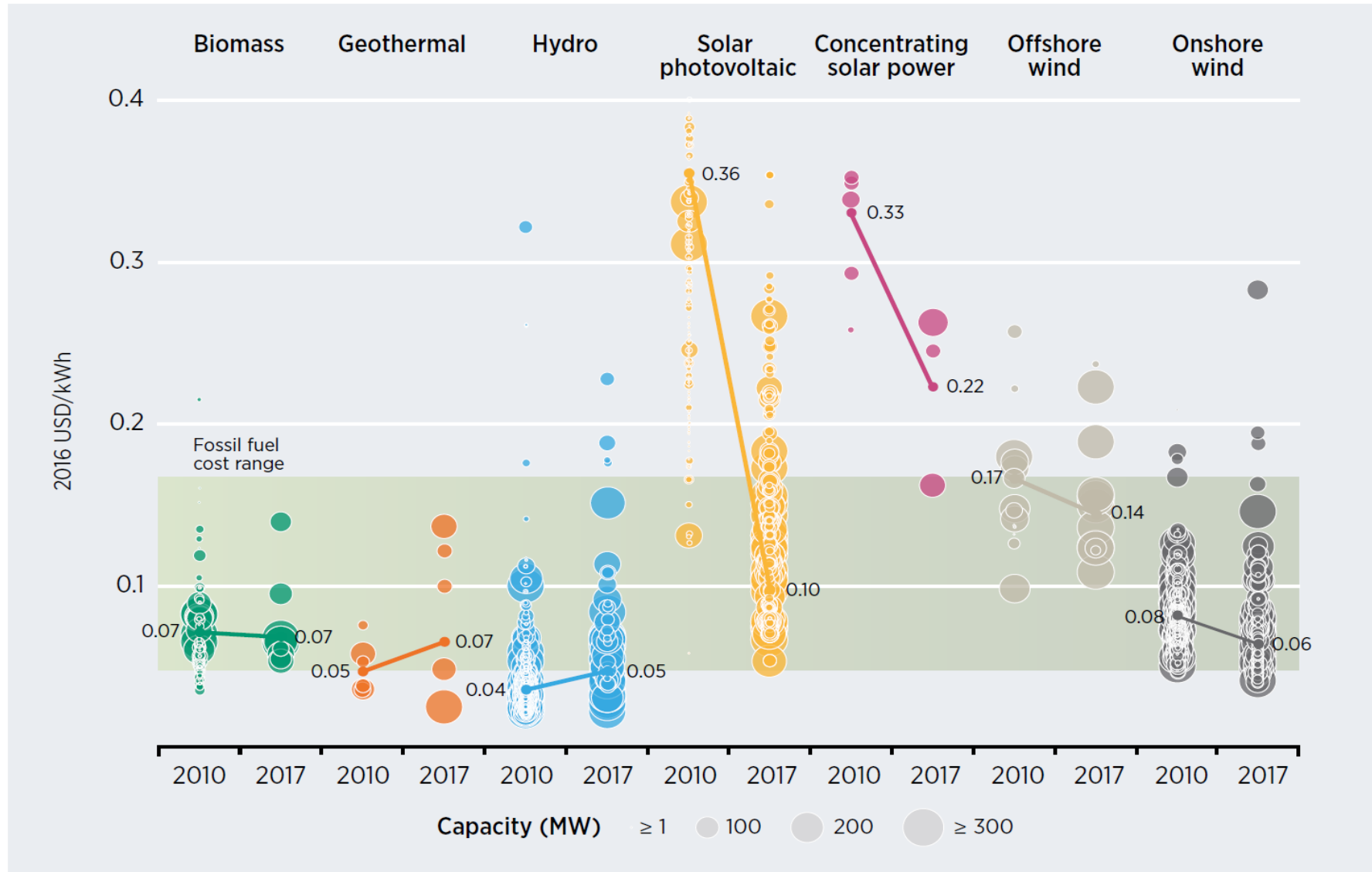
WIND
ENERGY

RE power capacity additions exceed conventional power



- Wind and solar PV led the uptake of RES.
- Solar PV accounted for more than 56% of total RES additional installed capacity in 2017
- Latin America and Caribbean hold 10% share of global RE power capacity (217 GW)

RE technology costs drastically declined

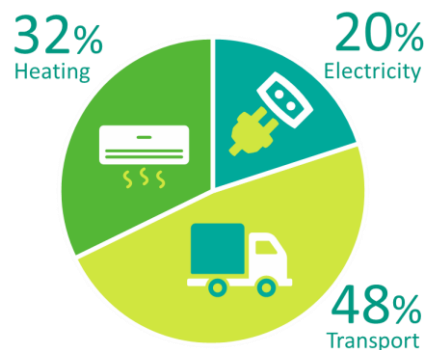
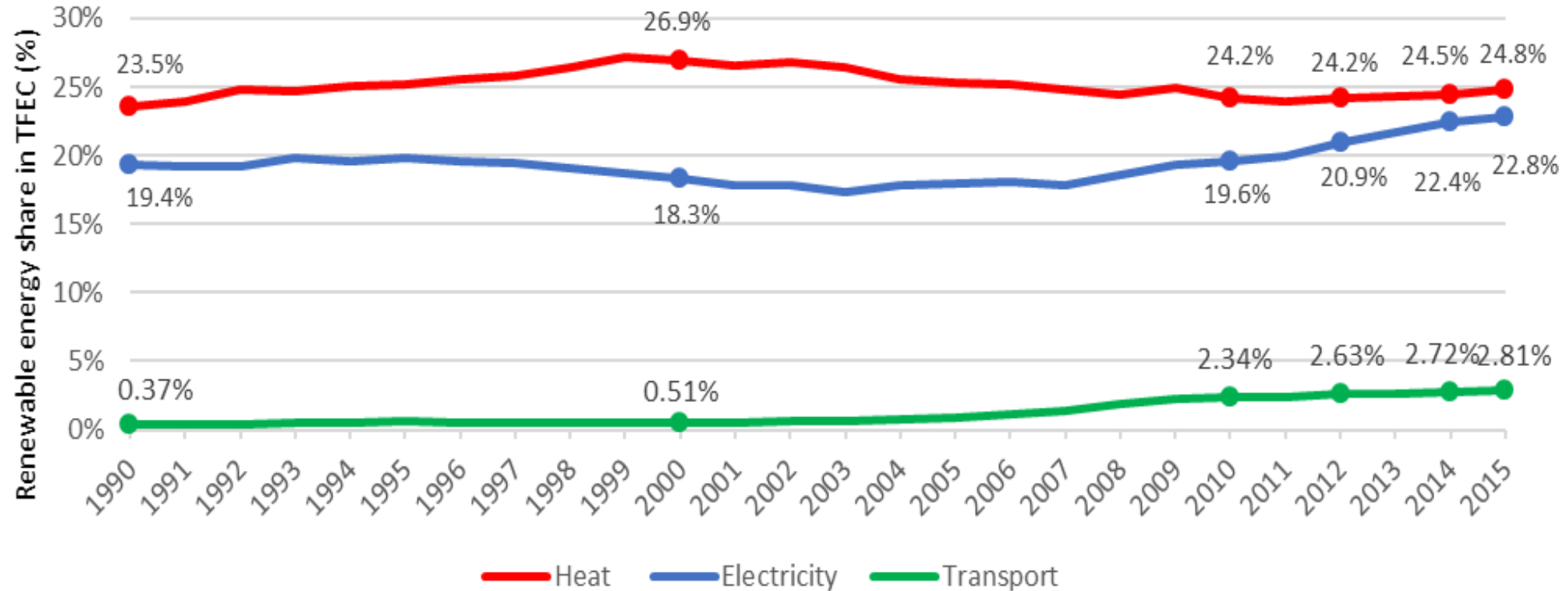


IRENA Costing Database

15,000 large scale RE power projects and 1.5 million rooftop PV systems.

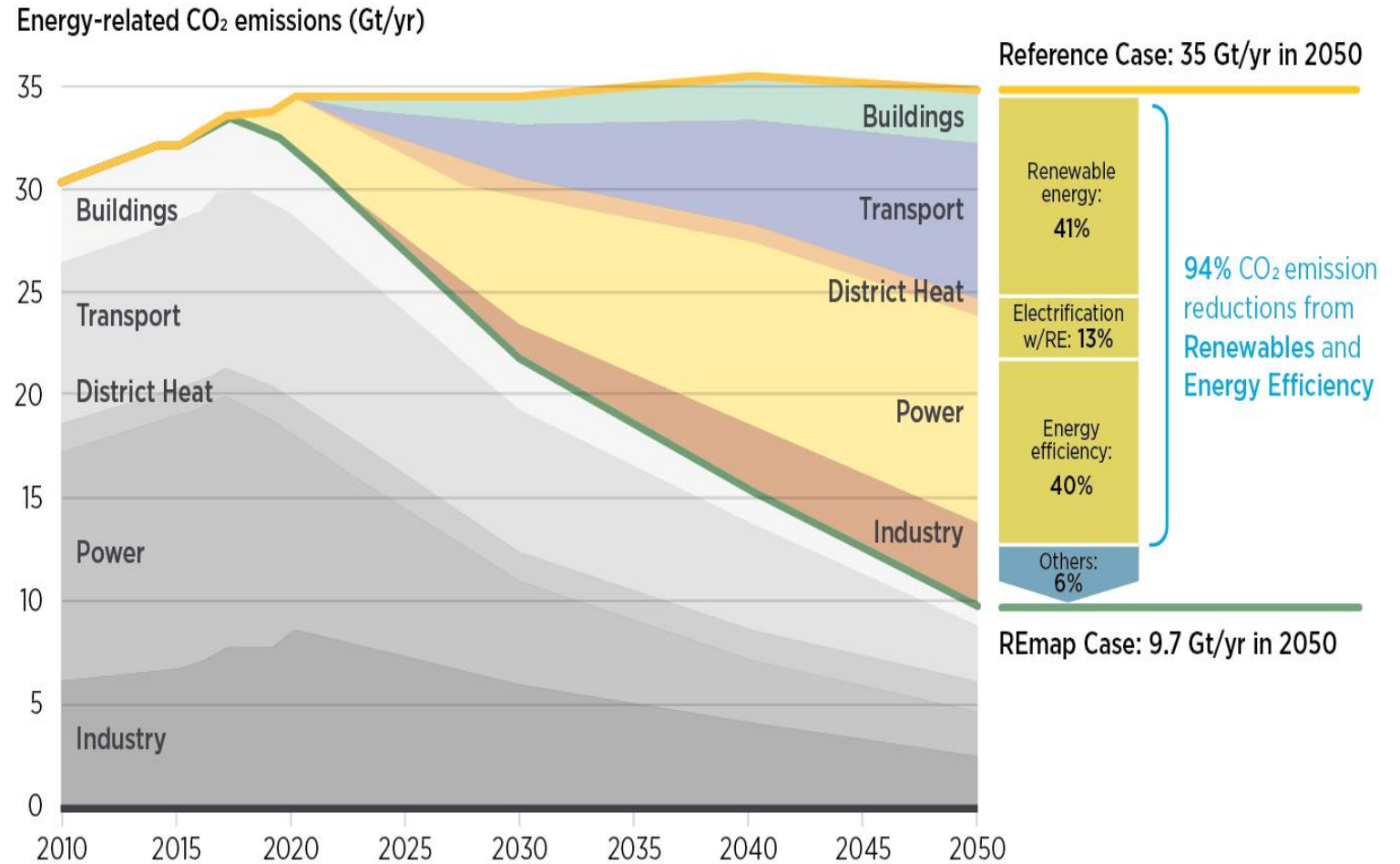
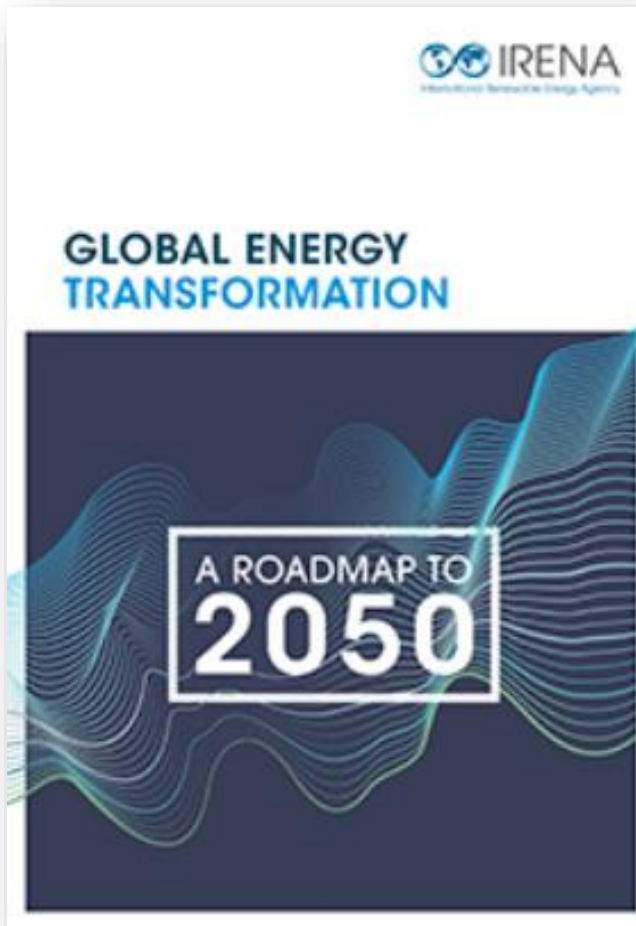
Covering half of all existing and planned RE capacity

RE penetration in heating and transport requires boosted efforts



Progress in the power sector is not being matched in transport and heating – which together account for 80% of global energy consumption.

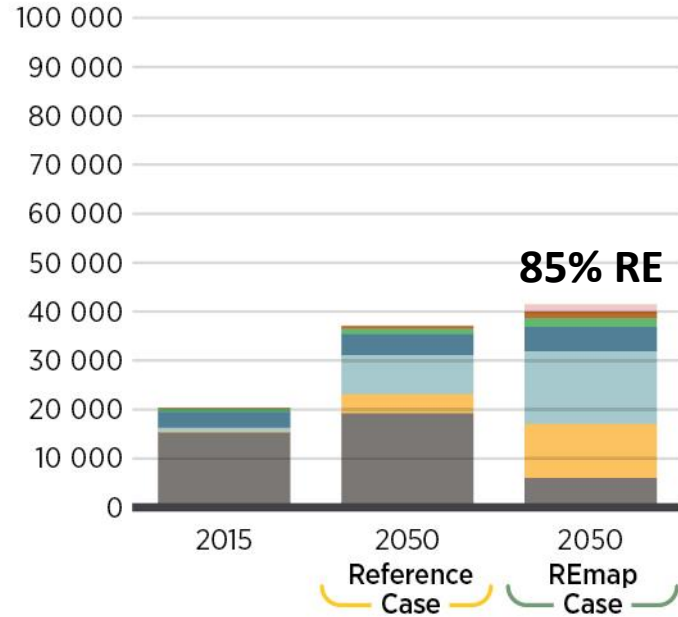
Annual energy-related CO₂ emissions and reductions, 2015-2050



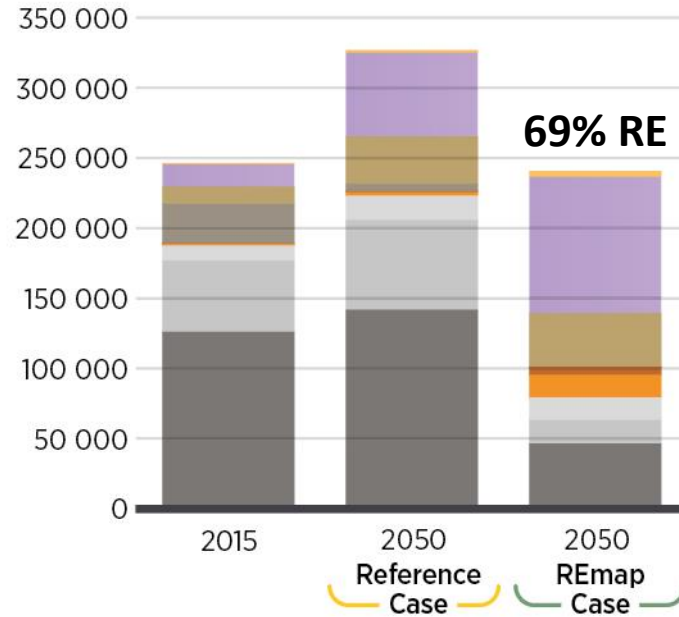
RE & EE provide more than 90% reduction in energy-CO₂ emissions

RE should scale up in all power, heat and transport sectors

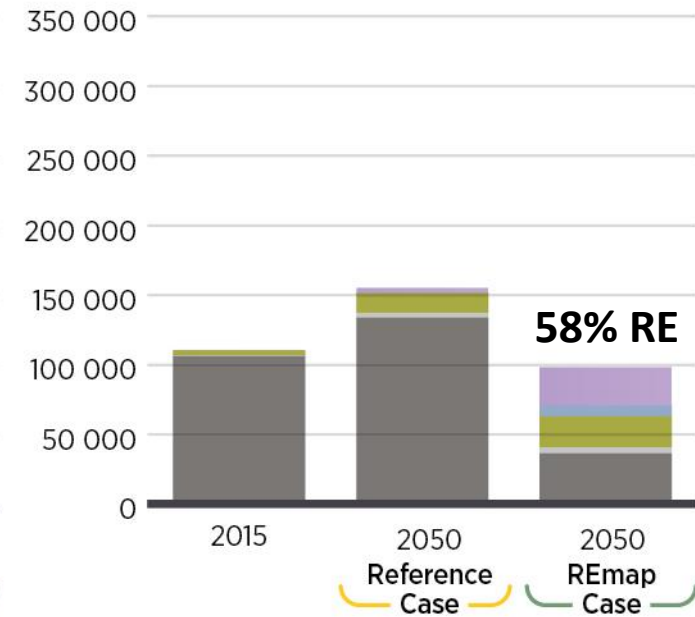
Electricity consumption (TWh)



Industry and buildings final energy consumption (PJ/yr)



Transport final energy consumption (PJ/yr)



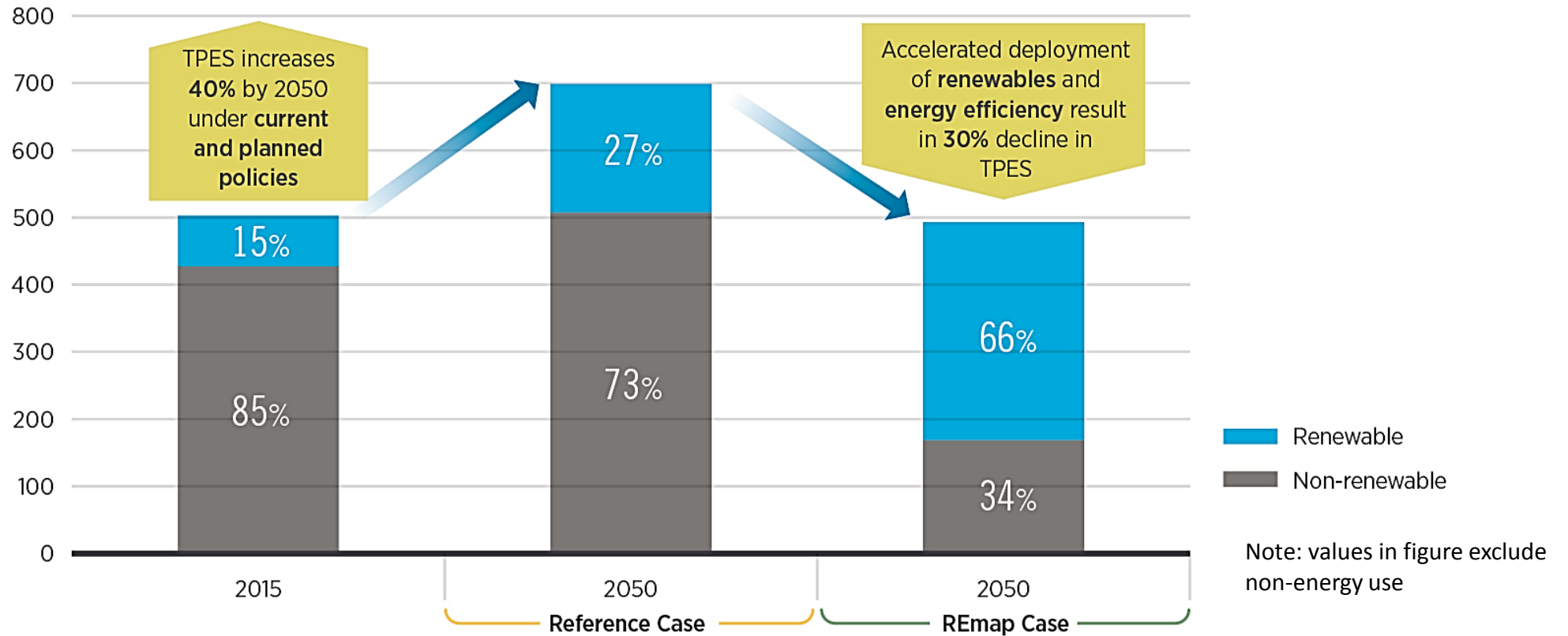
- Others (incl. marine and hybrid)
- Geothermal
- Bioenergy
- Hydro power
- Wind
- Solar PV (incl. CSP)
- Non-Renewables

- District heat: Renewables
- Electricity: Renewables
- Modern biomass
- Traditional biomass
- Geothermal heat
- Solar thermal

- Hydrogen
- Liquid biofuels/biogas
- Non-Renewables
- District heat: Non-Renewables
- Electricity: Non-Renewables

RE share in global energy supply is to increase to two-thirds

Total primary energy supply (EJ/yr)

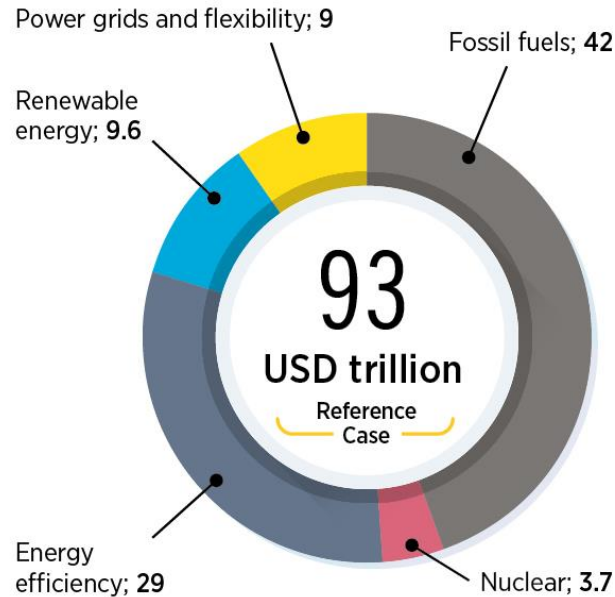


To achieve a pathway to energy transition (the REmap Case):

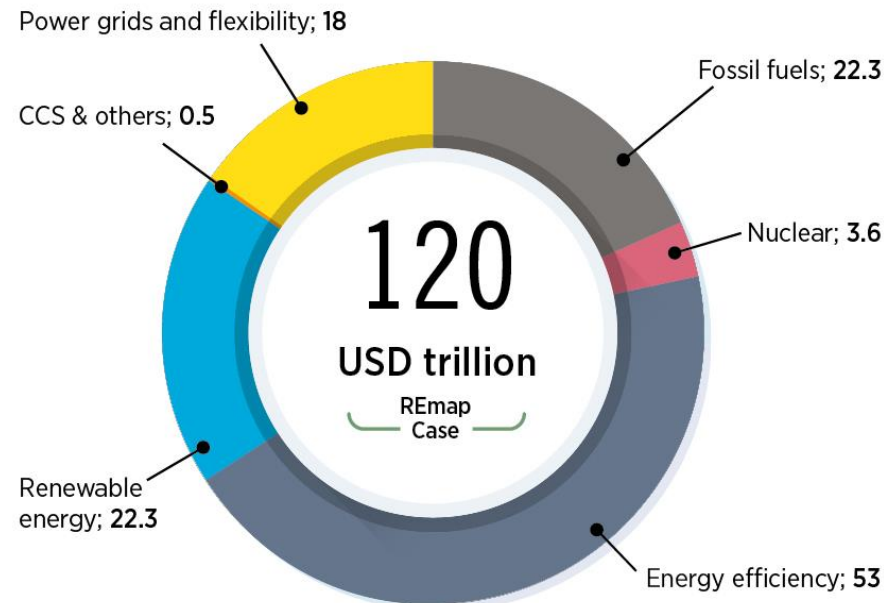
- Energy Efficiency to reduce TPES slightly below 2015 levels
- Renewable Energy to provide two-thirds of the energy supply

Cumulative investment - Reference and REmap cases, 2015-2050

Reference Case energy sector investments between 2015-50 (USD trillion)

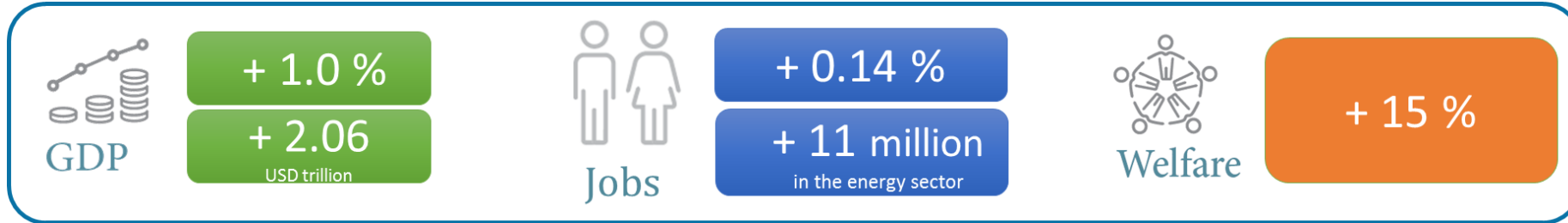


REmap Case energy sector investments between 2015-50 (USD trillion)

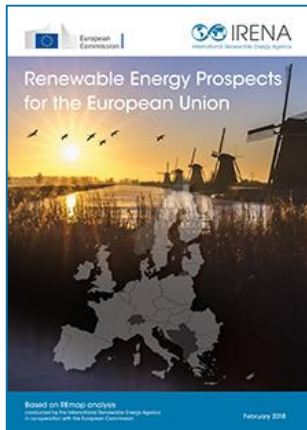


Reduced negative externalities (annual health and CO2 emissions) associated with the energy transition outweigh incremental costs by 2 to 5 times in 2050.

Socio-economic benefits of renewable energy deployment



➤ *Around 2 million jobs in renewable energy in Latin America in 2016*



European Union

Used as input for process to increase the EU's 2030 renewable energy target, in line with climate priorities

South East Asia

Identifies ways for ASEAN members to accelerate RE in line with regional goal of 23% RE share by 2025

Africa

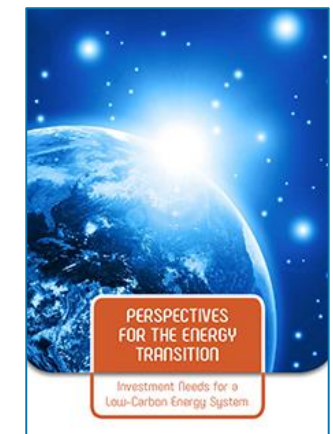
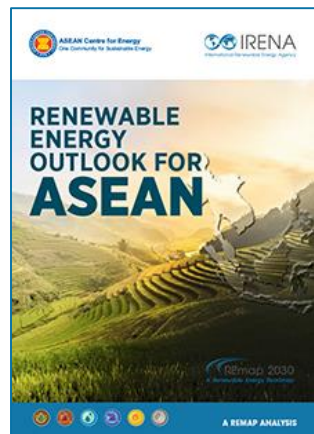
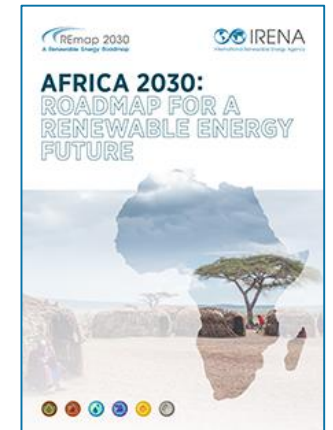
Recommends actions for African countries to help reach 50% RE share in power sector by 2030

G20

Identifies options for G20 countries to meet Paris agreement through RE and EE

South East Europe (ongoing)

Supporting the process for setting post-2020 RE framework for the Energy Community countries





To know more about the **Global Energy Transformation**, this and other IRENA publications are available for download from www.irena.org/publications

For further information or to provide feedback, please contact IRENA at info@irena.org

For further information or to provide feedback on the socio-economic analysis please contact the Policy team at policy@irena.org, on the REmap analysis please contact the REmap team at remap@irena.org.



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