



Renewable Energy Policies in a Time of Transition

Anuar Tassymov

**Associate Programme Officer – Central and South Asia,
Country Support and Partnerships**

International Renewable Energy Agency (IRENA)

The role of renewable energy in sustainable energy
pathways, 14 November 2018 - Kyiv, Ukraine





About IRENA



Established in 2011.

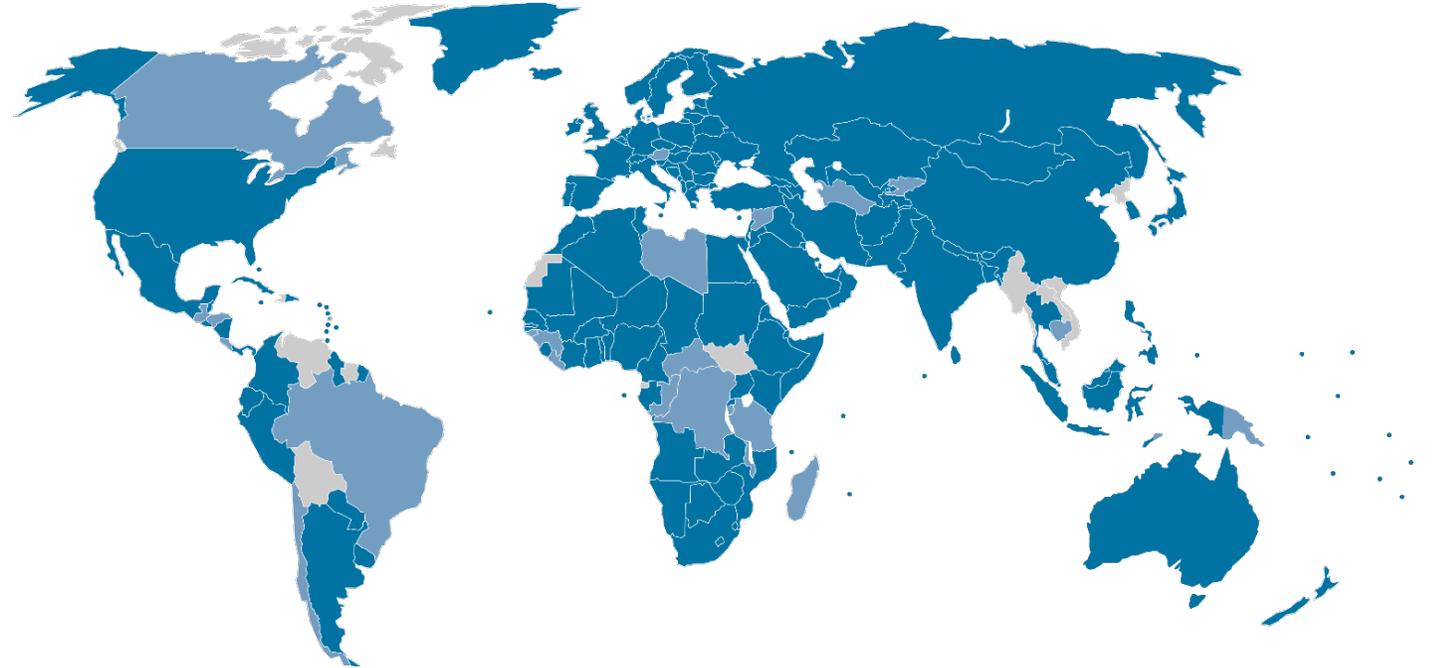
158 Members

24 States in accession.

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

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

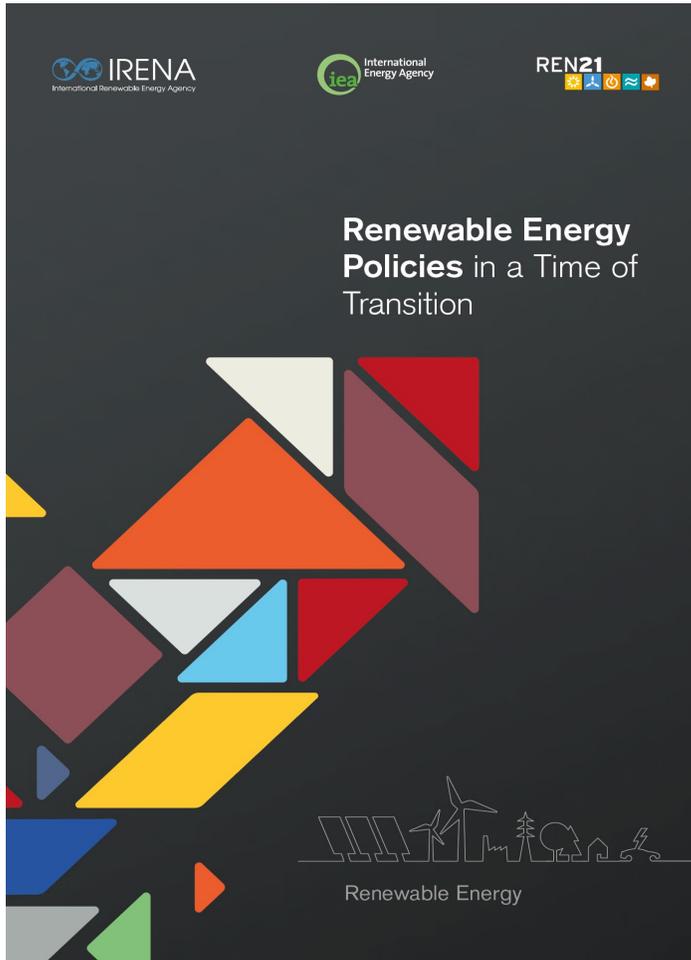


SOLAR
ENERGY



WIND
ENERGY

Renewable Energy Policies in a Time of Transition



- First joint policy report by **IRENA, IEA and REN21**, which was launched at the BETD in April 2018
- Covers renewable energy policies in **heat** (IEA lead), **transport** (REN21), **power** (IRENA), as well as **system integration** (IEA)
- Proposes a new **policy classification**
- **Peer-review** through REN21+ (50+ organizations providing over 1000 comments)

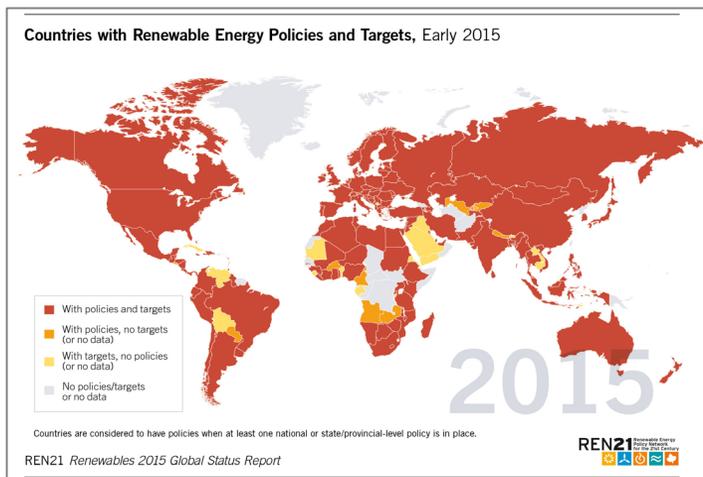
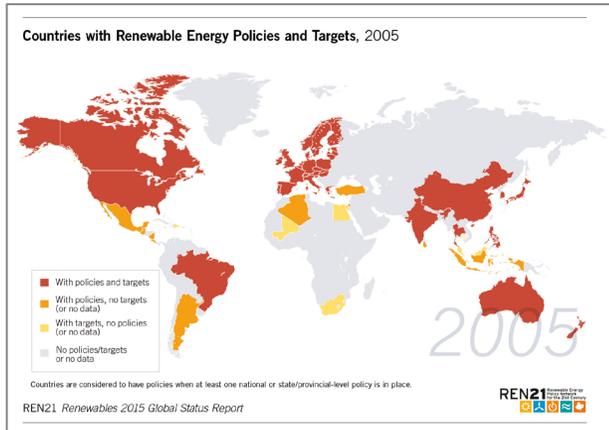


The spread of renewable energy policies

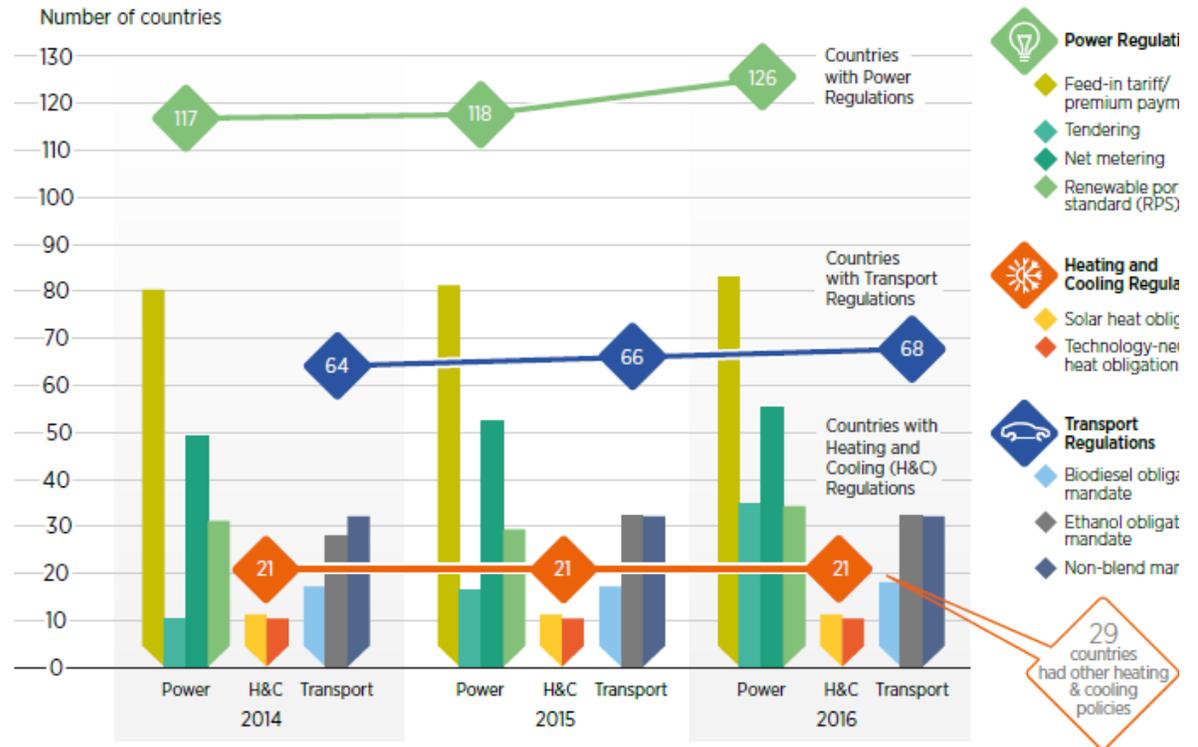


Renewable energy policies have become increasingly widespread.

Policy support focuses on power sector. Heating, cooling and transport lag behind



Number of countries with renewable energy regulatory incentives and mandates, by type, 2014-16



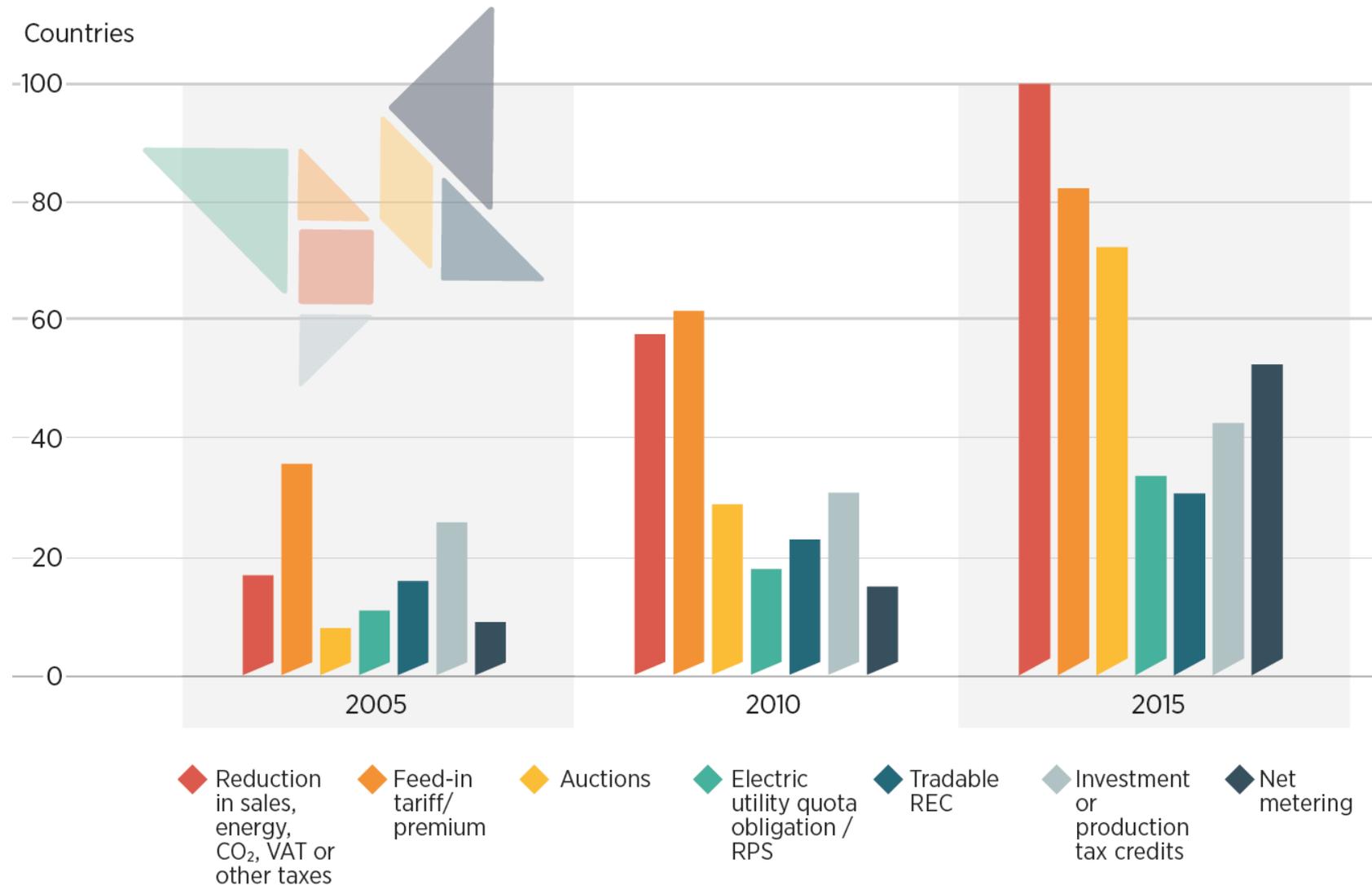
Source: REN21, Renewables Global Status Report 2015- 17



Renewable power policies are evolving



Trends in the adoption of selected policy instruments to support renewables in power





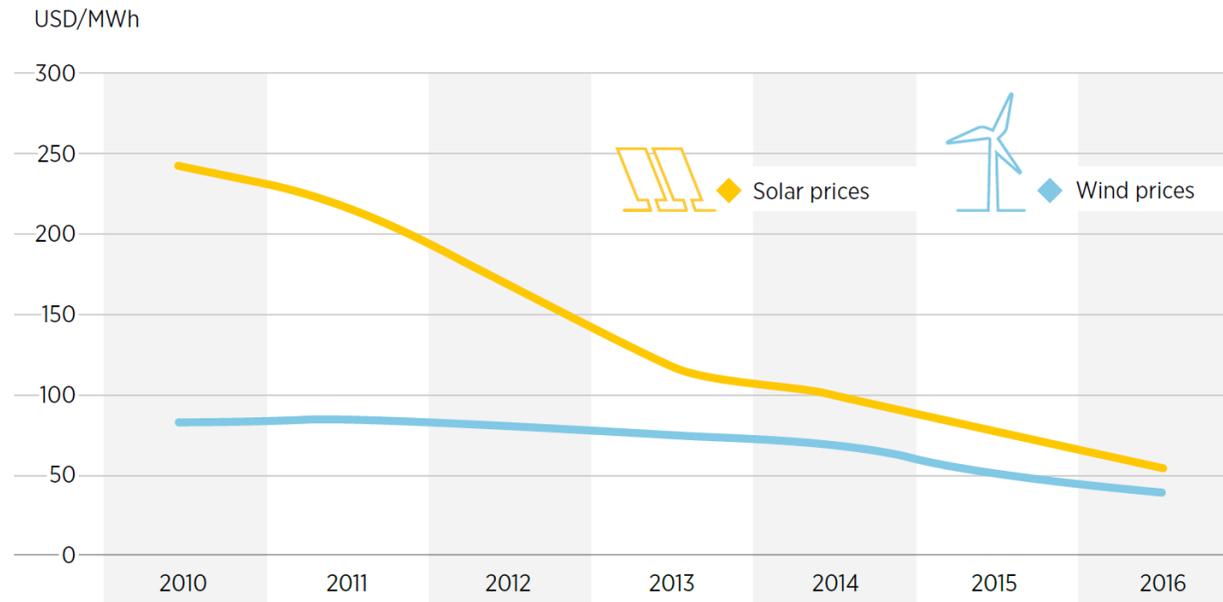
Factors behind the falling auction prices for solar PV



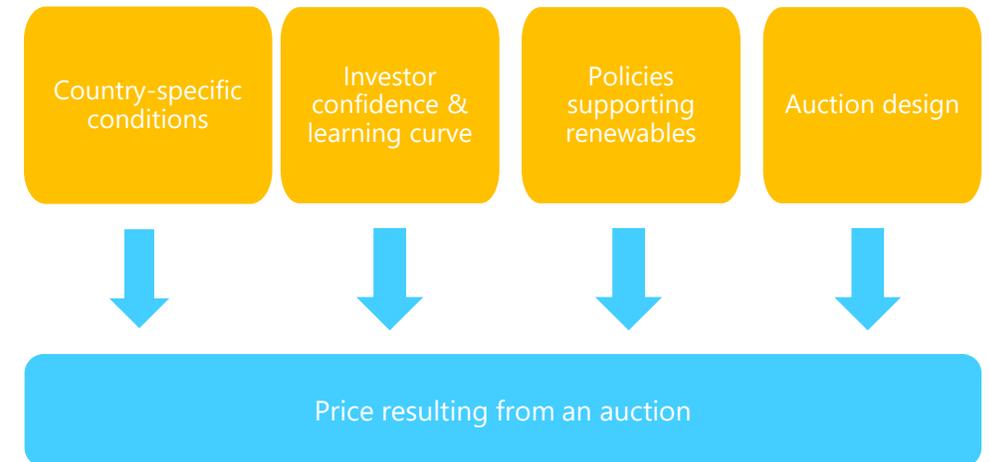
Price discovery through competitive auctions has been effective in reducing costs along the entire value chain, even in less developed markets.



Average prices resulting from auctions, 2010-2016



Source: IRENA, Renewable Energy Auctions: Analysing 2016, 2017

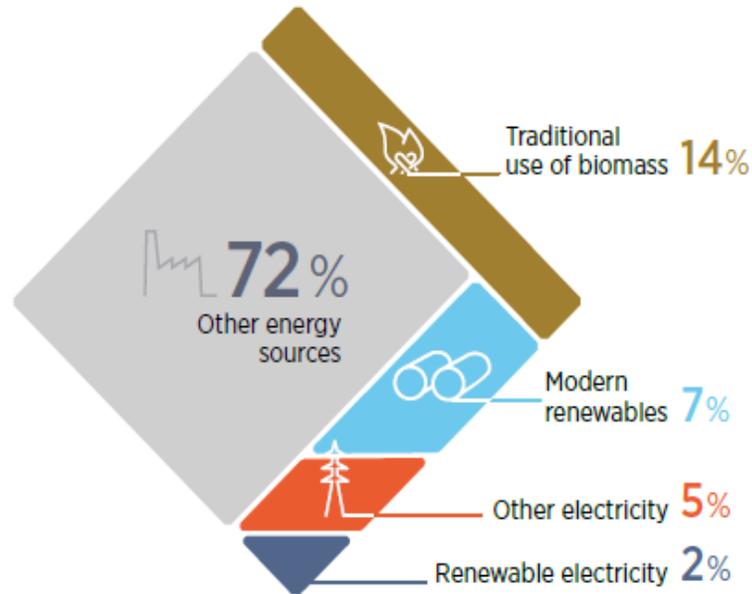




Renewables in heating and transport

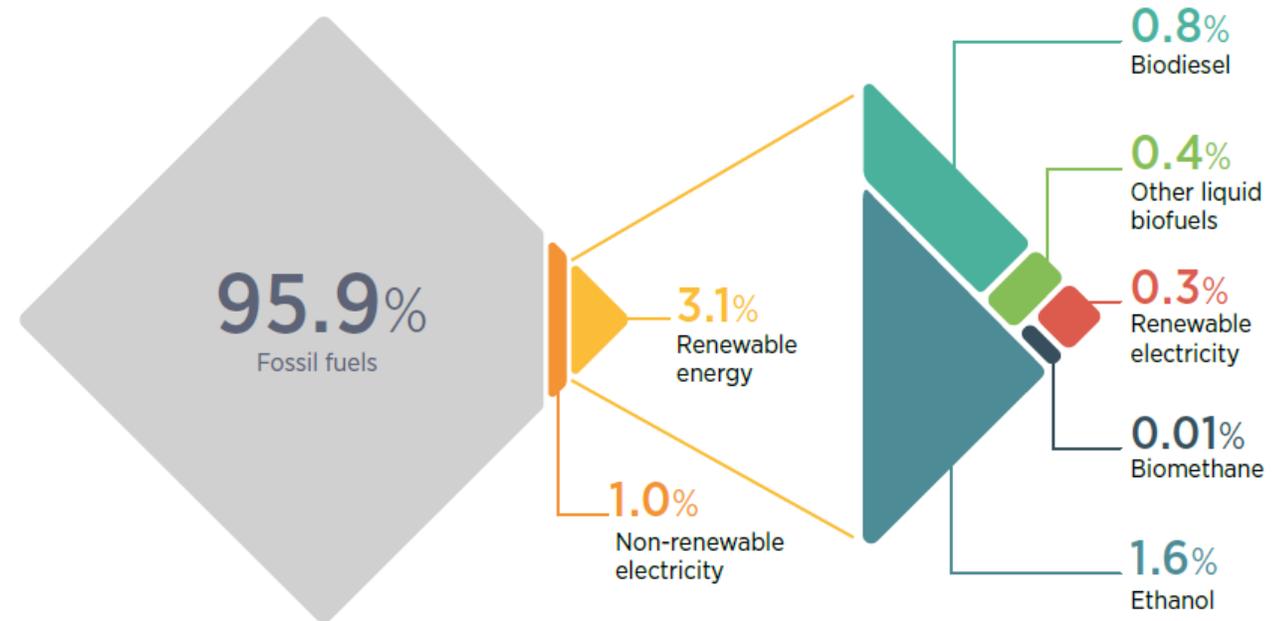


Total global energy consumption for heat, 2015



Source: : IEA, Renewables 2017

Transport energy use by transport fuel, 2015



Source: : IEA, World Energy Balances 2017

- Transport and heating - account for 80% of global energy consumption
- Renewables are central to the decarbonisation of the transport and heating sectors
- Strategies include: transport reduction, modal shift, efficiency and fuel switch
- Main options for fuel switch: biofuels; electricity; natural gas; hydrogen
- Electrification would need to double from approximately 20% in 2015 to 40% in 2050



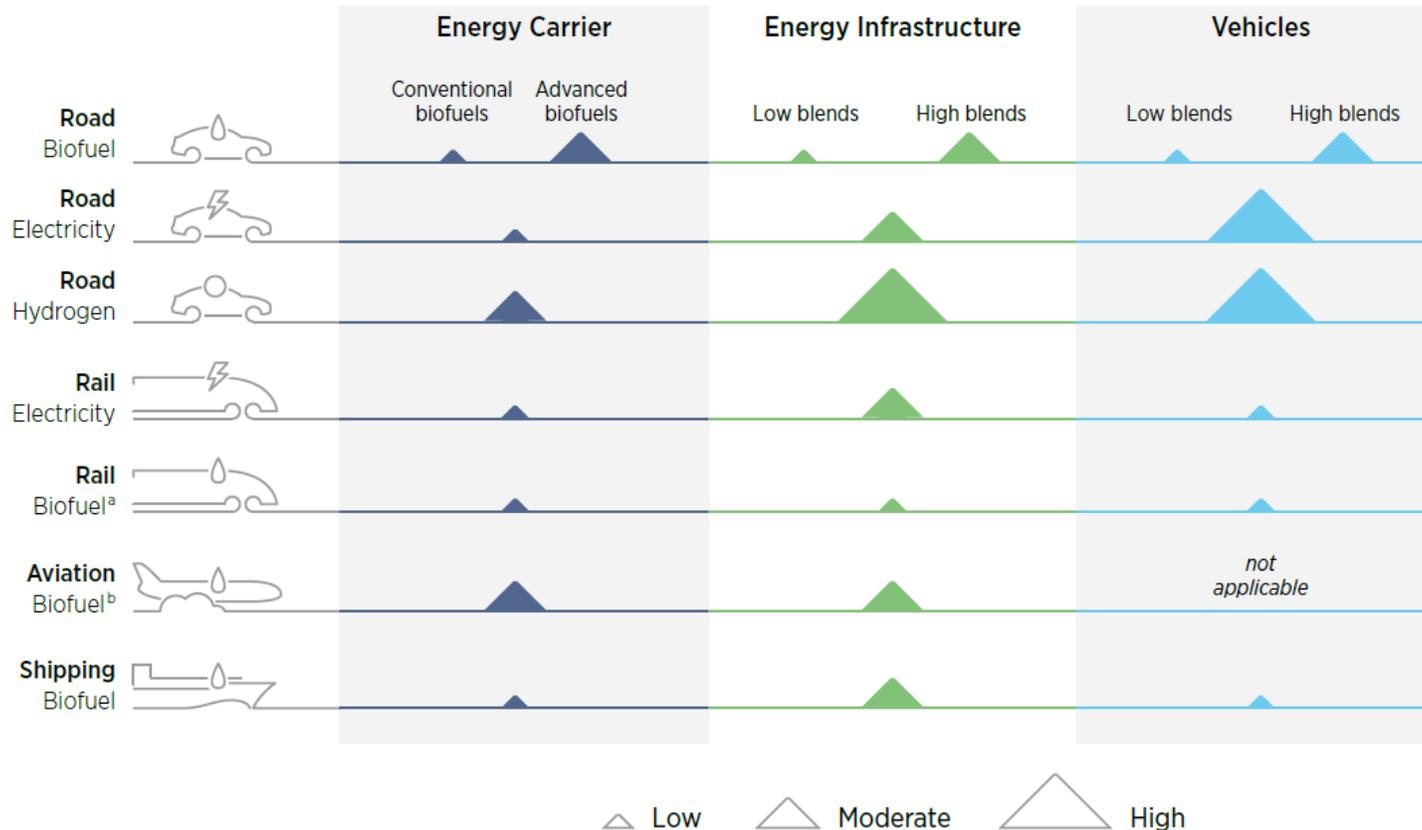
Policies to support renewable energy in transport



At present, renewable policy in the transport sector mainly relates to biofuels. Need for broader strategies to develop renewables in transport



Relevance of barriers for renewable energy carriers in transport sub-sectors



Policy intervention crucial to reduce transport sector's dependence on fossil fuel:

- **Removing fossil fuel subsidies essential**
- **Carbon price** is a key tool

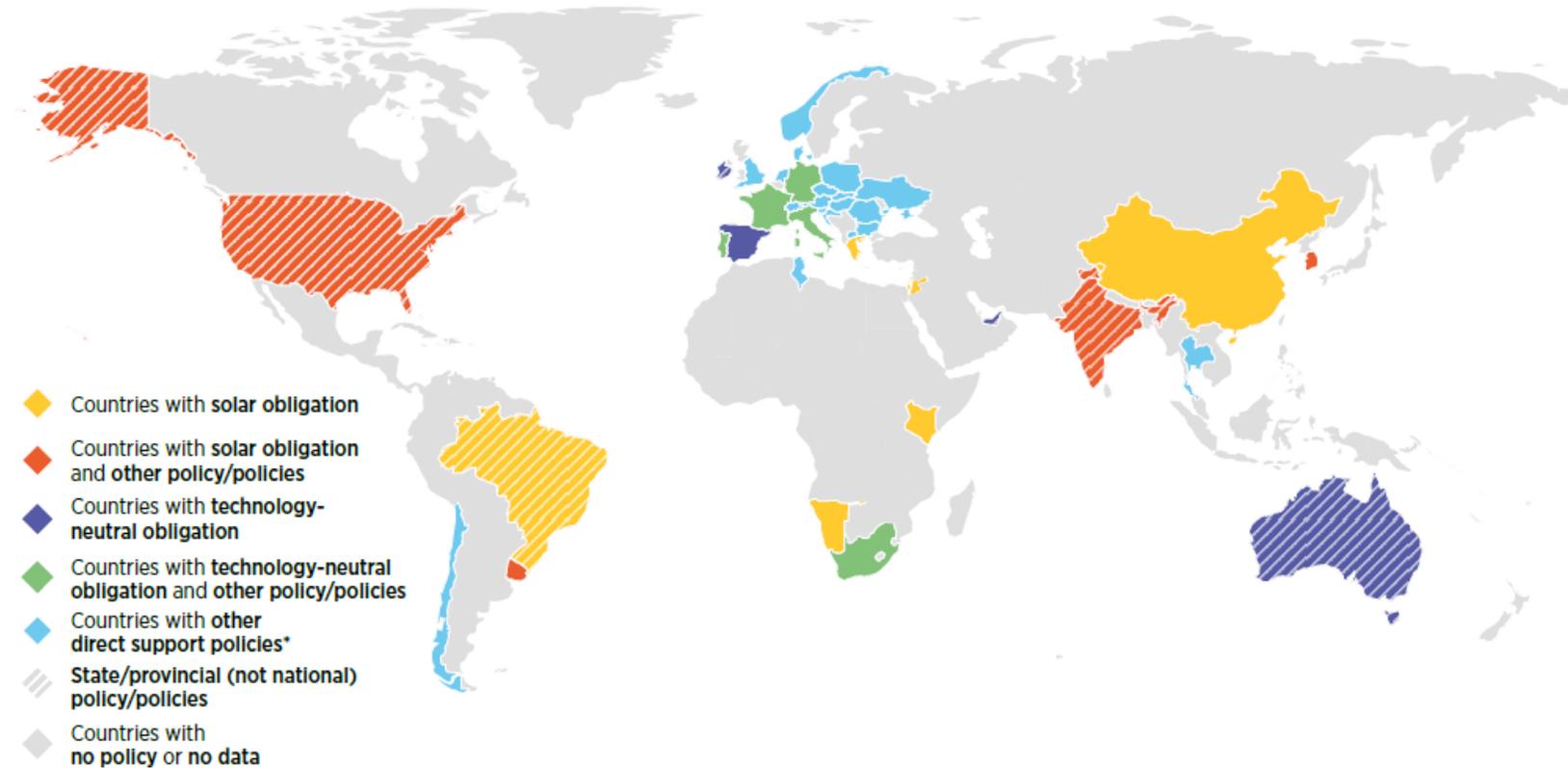
These are particularly important for shipping and aviation.



Renewable heat solutions are complex and location-specific



Countries with renewable heating and cooling policies, 2016



* Indicates countries with other policies that directly support renewable heating and cooling technologies, including rebates, tax credits, FITs, tenders, etc.

Source: : REN21, Renewables 2017 Global Status Report

Different heat needs, country contexts and barriers require different policy approaches:

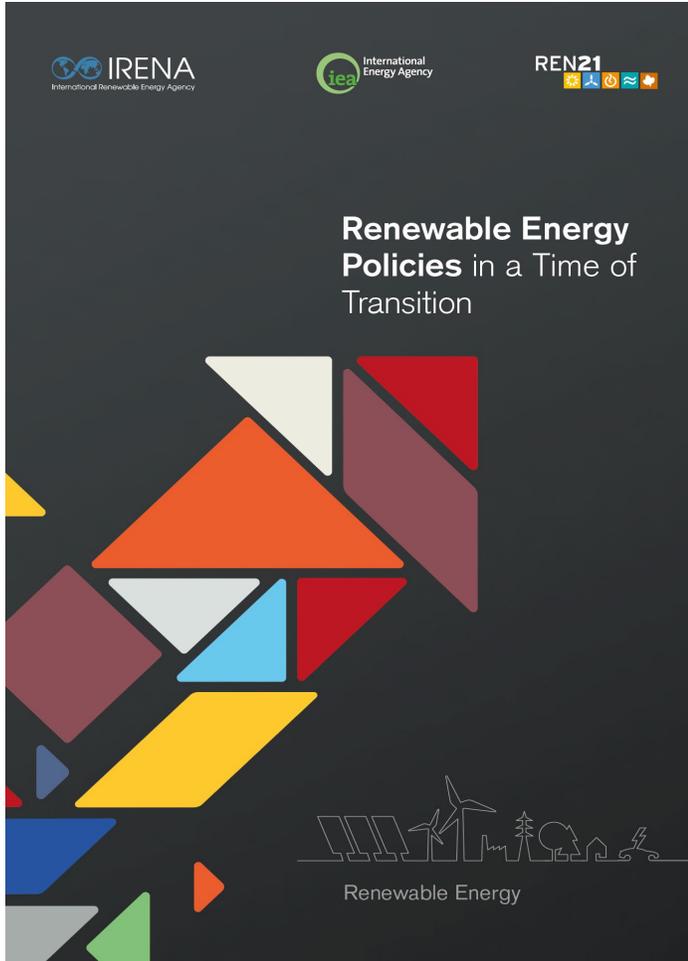
Policy Cluster 1:
District heating

Policy Cluster 2:
Competing with natural gas heating

Policy Cluster 3:
Industrial heat and hot water

Policy Cluster 4:
Clean cooking

The way forward



- Rapid growth in renewables thanks to targets and effective policies
- Focus remains mainly on the power sector; heat and transport lag behind
- Policy landscape is evolving (e.g. growth in auctions)
- No single perfect policy instrument – need mix of policies tailored to country contexts
- Broader energy system approach & sector coupling increasingly important



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Thank you for your attention!

