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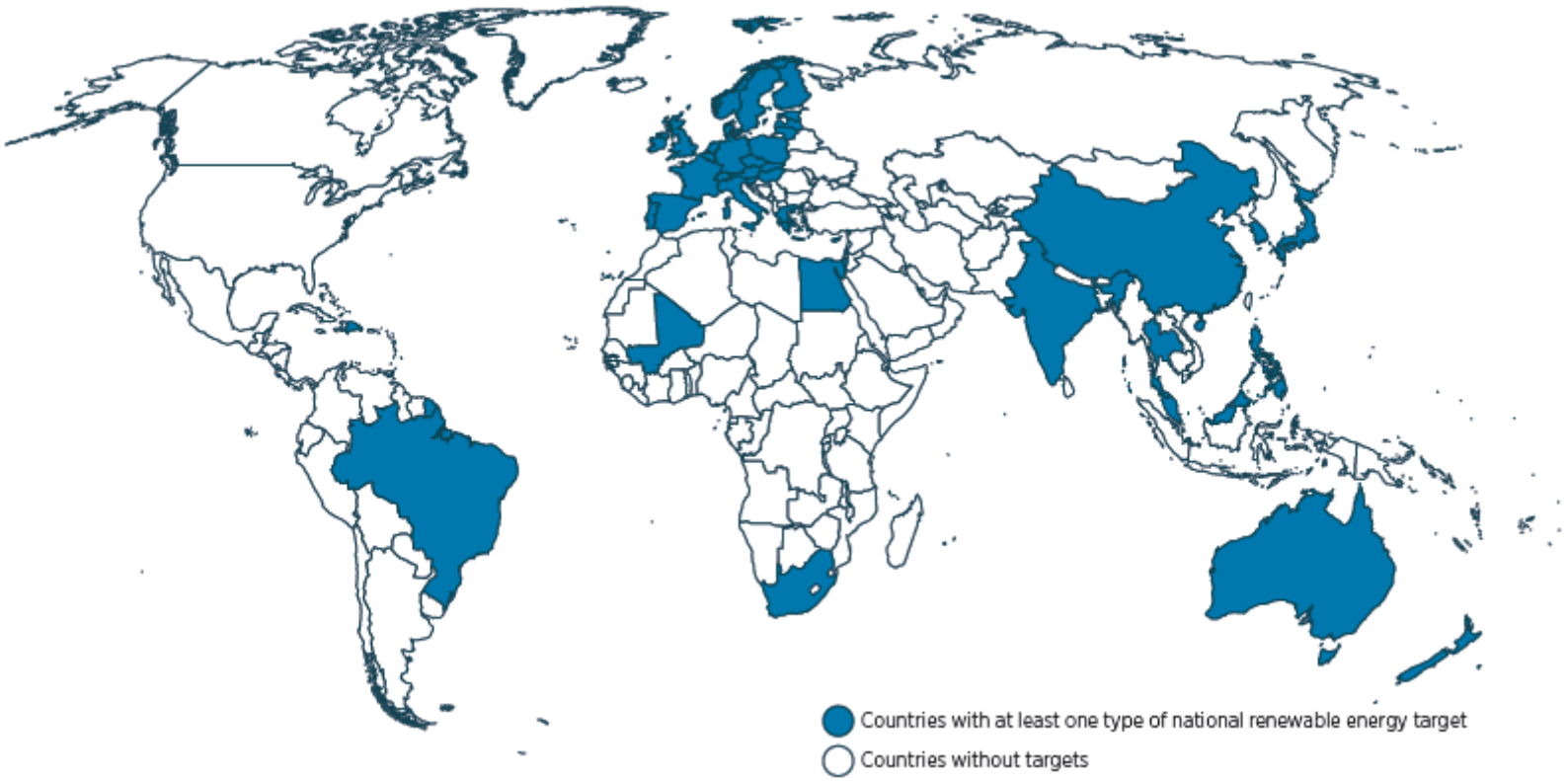
Renewable Energy Policy Frameworks: Targets and Auctions

South East Europe
Regional Consultation Meeting

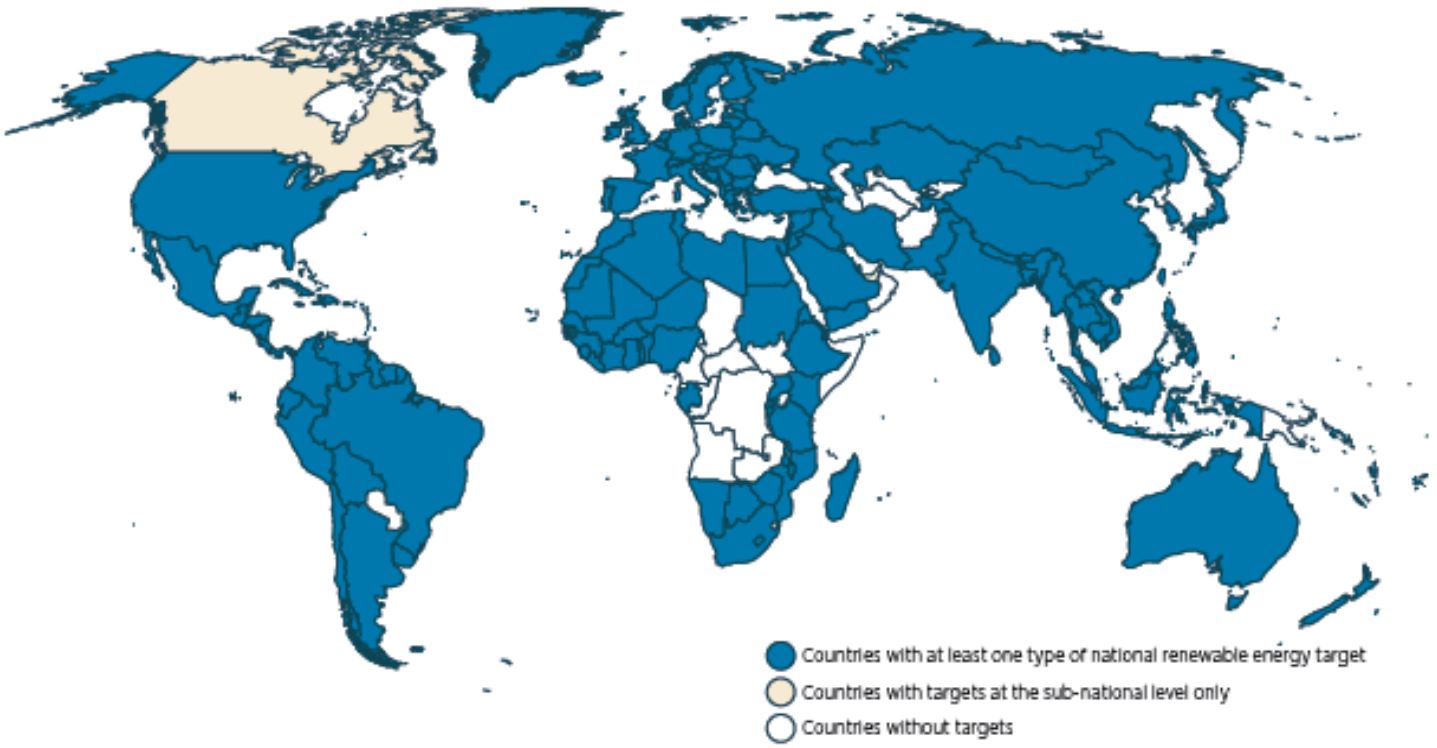
Bucharest, 7th Oct, 2016

Targets in the global renewable energy landscape – 2005



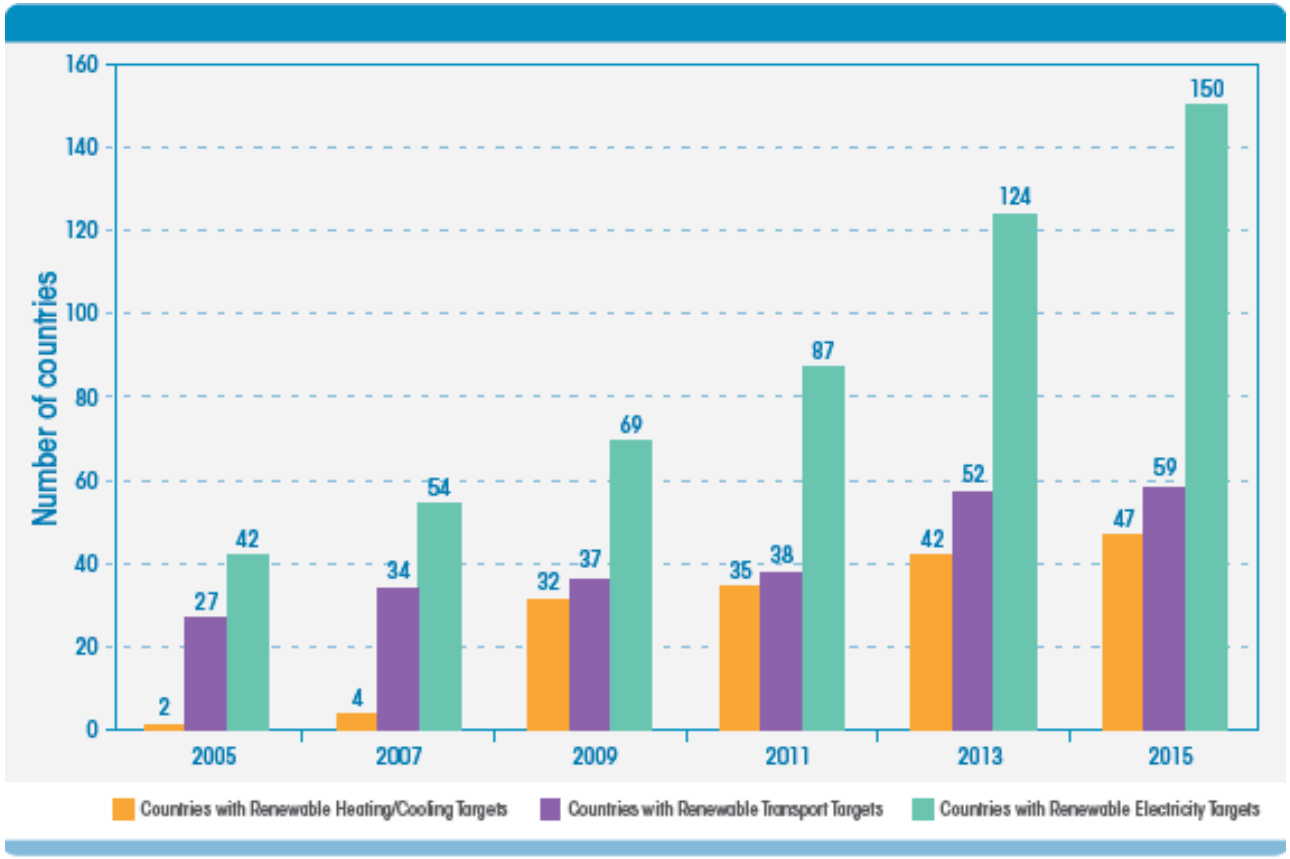
In 2005, 43 countries had renewable energy targets – mostly OECD countries

Targets in the global renewable energy landscape – 2015



Today, 164 countries have at least one type of renewable energy target – including 131 targets in emerging and developing countries

Evolution of global RE targets by sector 2005-2015



Source: IRENA based on REN21, 2005, 2007, 2009, 2011, 2013, 2014.

While renewable electricity targets are the most widespread type, heating/cooling and transport sector targets have increased significantly over the last decade

Designing RE targets

The design of RE targets varies widely:

- **By Sector: Electricity, Heating, Transport**
- **Total final energy supply (TFES) vs. Total primary energy consumption (TPEC)**
- **Share of energy demand (%) or a fixed amount (e.g. 'x' GWh, PJs)**
- **Technology-neutral vs. technology-specific**
- **Long-term vs. Short-term**
- **Mandatory vs. Aspirational**

What are Renewable Energy Targets?

Renewable energy targets are numerical goals established by governments to achieve a specific amount of renewable energy production or consumption.

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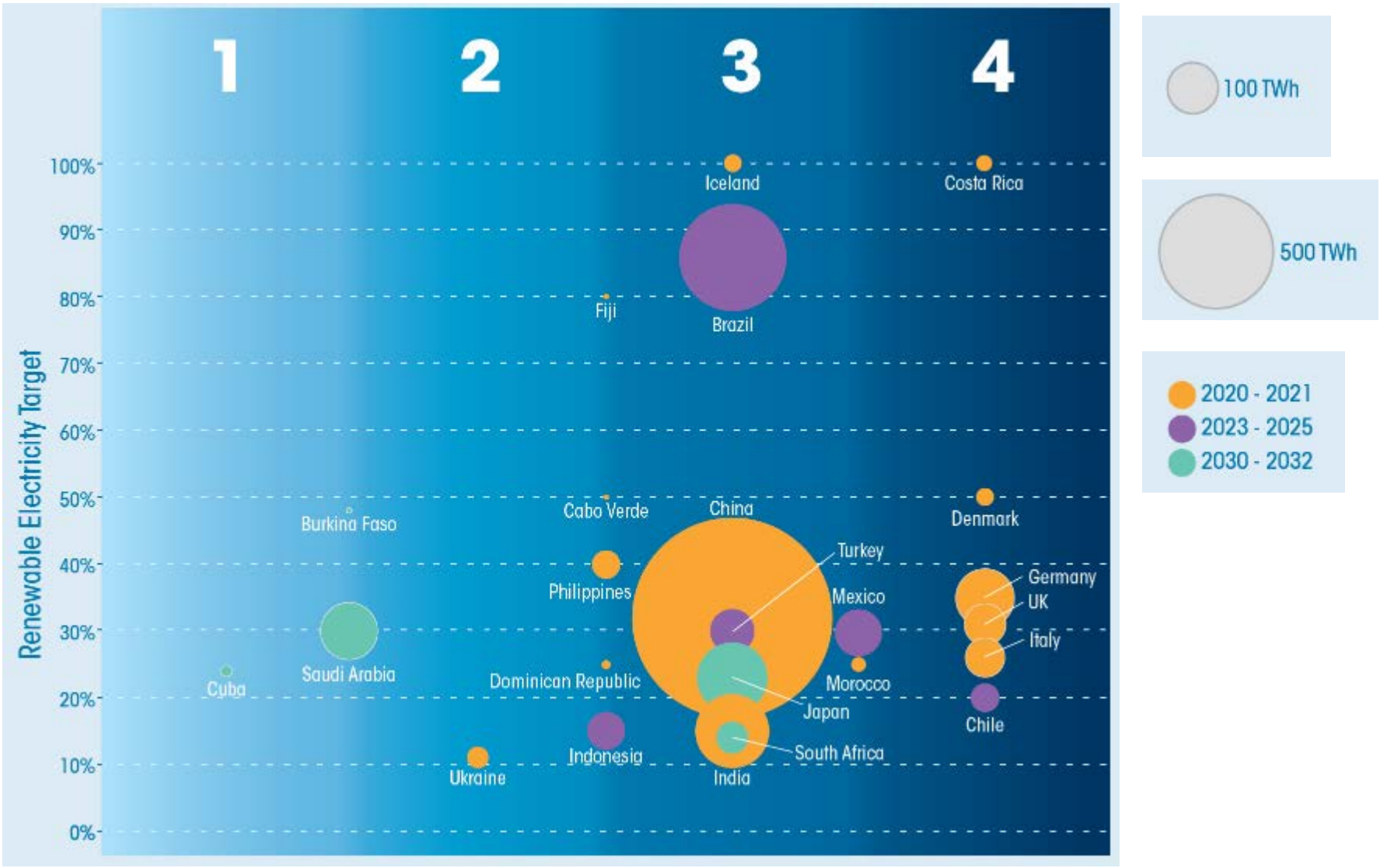
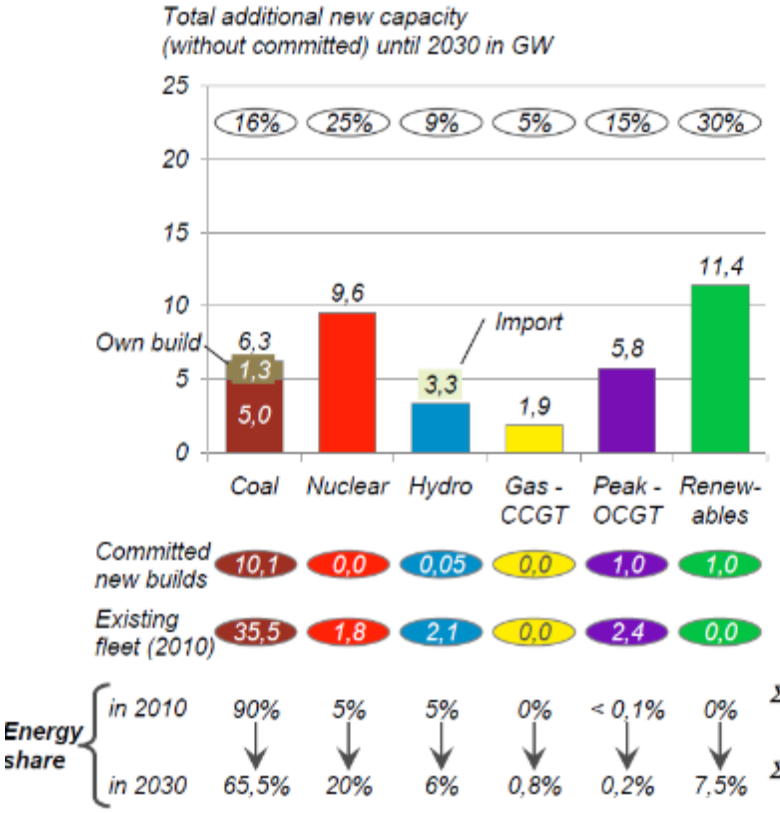


Key functions of RE targets throughout the policy-making cycle

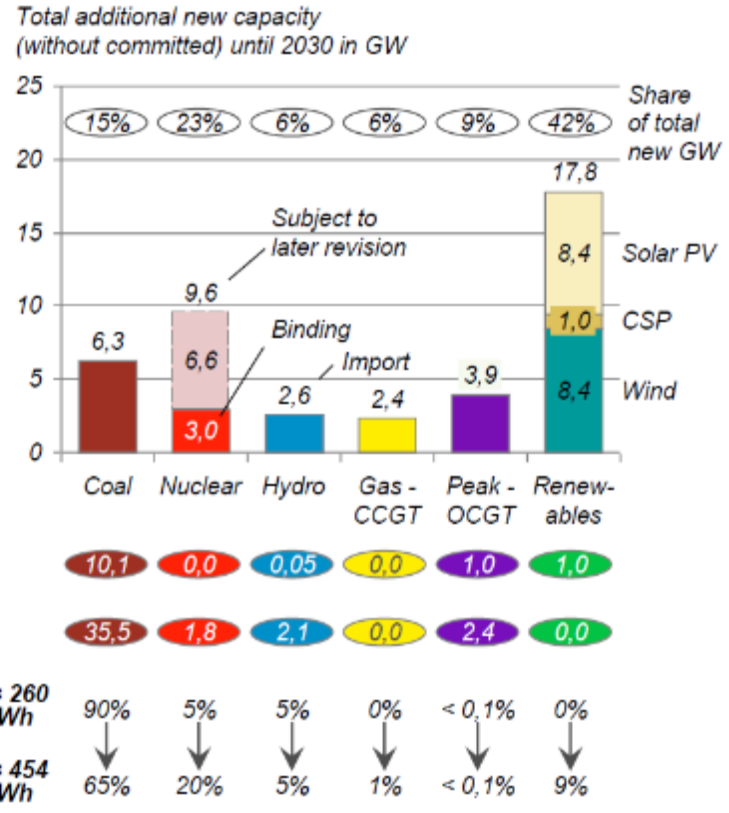
To explore — policy formulation	• Develops the information base by gathering data • Complements/validates information through consultation • Reveals gaps in knowledge • Increases the transparency of policy making • Stimulates debate, raises awareness and acceptance
To guide and motivate — policy implementation	•Provides clear direction of policy to stakeholders • Signals political commitment •Motivates stakeholders to take action • Anchors strategic priorities and scenarios • Fosters accountability
To regulate — policy evaluation	• Supplies concrete milestones for evaluation and adjustments • Shows deficiencies in current operations • Provides opportunities to take action to correct deviations • Exposes data needs and discrepancies

Consultation enhances transparency & feasibility of targets: South Africa's IRP

Before consultation process



After consultation process



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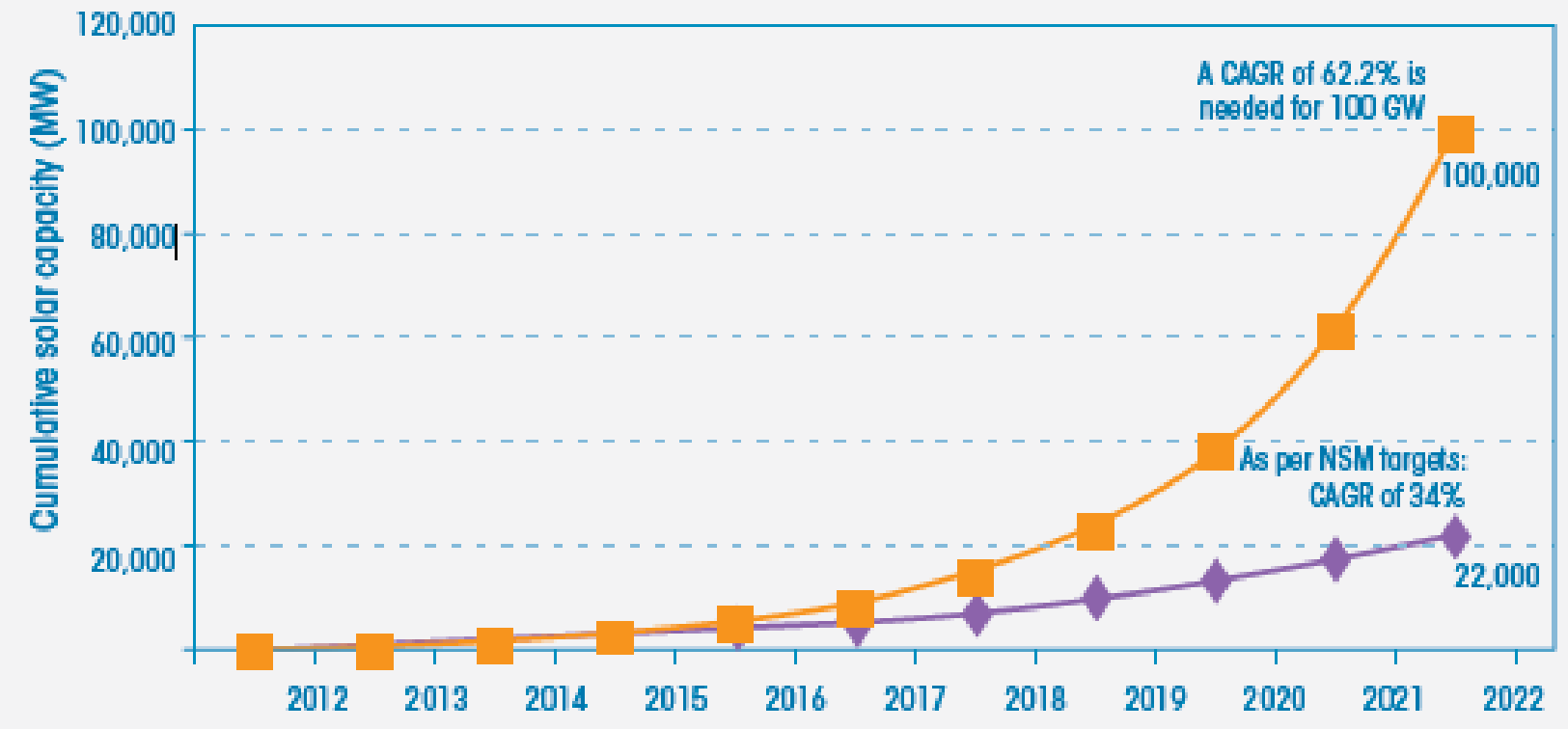
Targets indicate policy direction and potential market size: India

India scales up its solar targets from 22 GW to 100 GW



Source: CEEW, 2014

Note: CAGR - Compound annual growth rate

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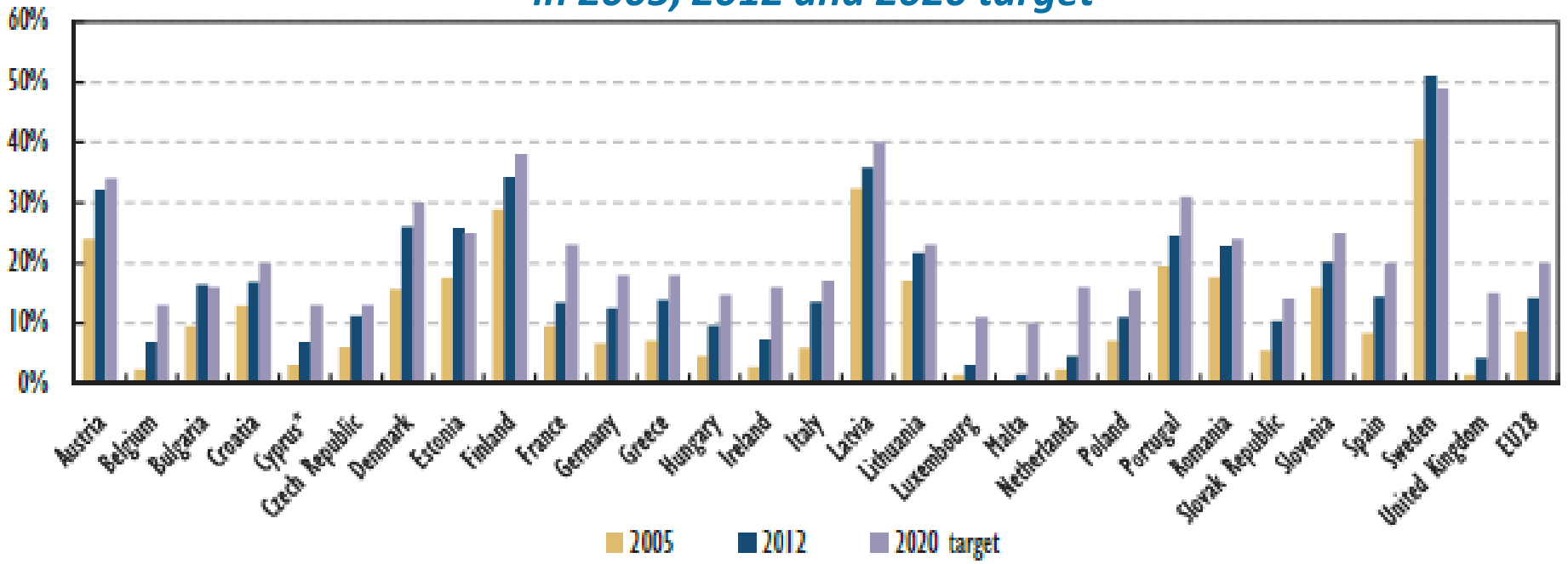
Monitoring renewable energy targets in EU Member States

Share of renewables in gross final energy consumption

in 2005, 2012 and 2020 target



Designing RE targets: Key insights

- ***Governments increasingly recognise the benefits of a portfolio approach to renewable energy deployment – technology-specific targets are now predominant***

- ***When determining the metrics for RE targets, an important distinction is whether they apply to TPES or to TFEC and whether they are defined as output or percentages***

- ***The time horizon of targets ideally combines a long-term vision anchored in short-term milestones to track progress***

- ***Making targets mandatory matters – the track record of binding RE targets is quite strong, while that of aspirational targets is comparatively weak. The majority of targets to date are non-binding***

Key lessons for setting effective RE targets

- Effective targets are connected to high-level national priorities and backed by strong political commitment
- Stakeholder engagement strengthens ownership and feasibility of targets
- Targets ideally combine a long-term vision anchored in short-term concrete milestones to maintain momentum
- Metrics of renewable energy targets have important implications for implementation and monitoring
- Making targets mandatory matters – *Who* is obligated and *how* also matter
- Striking the right balance between ambition and realism is vital to the success of targets
- Targets alone are not enough. They need to be accompanied by a clear strategy and backed by specific policies and measures.

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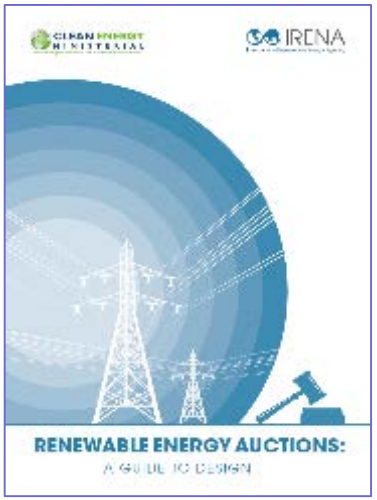
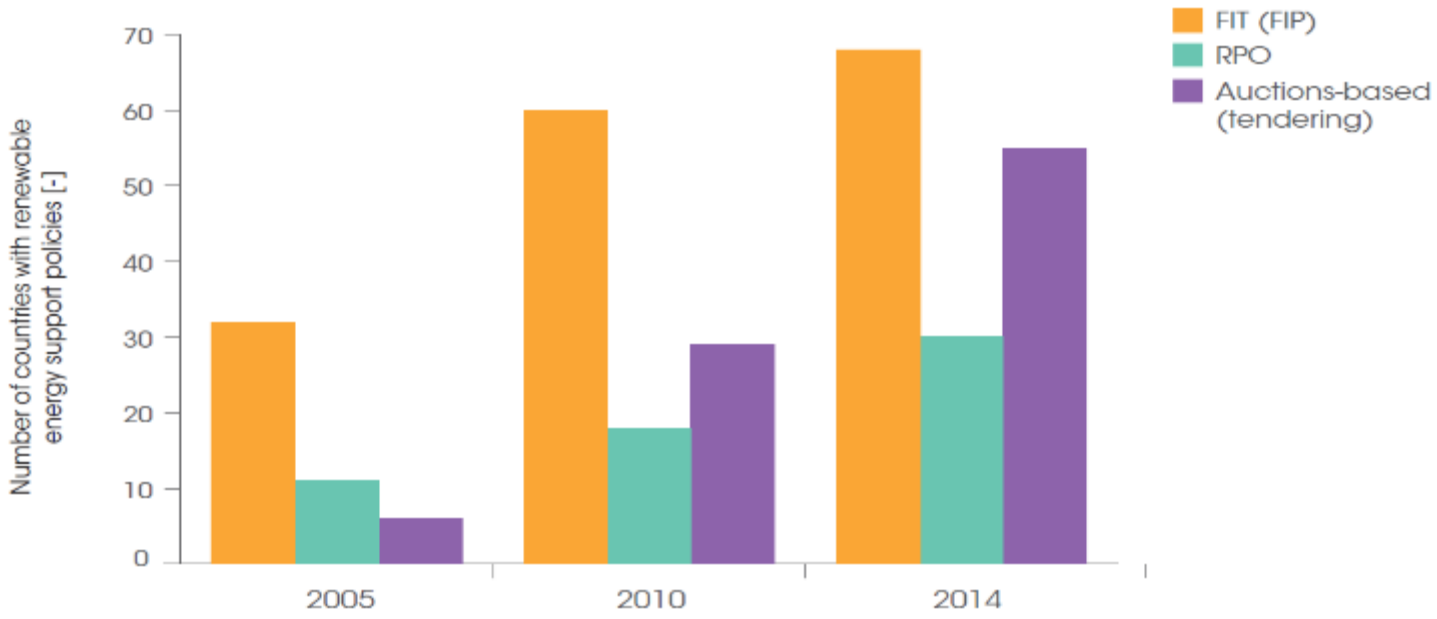
Renewable Energy Policy Frameworks: Auctions



Renewable Energy Policies

Number of countries with renewable energy policies, by type



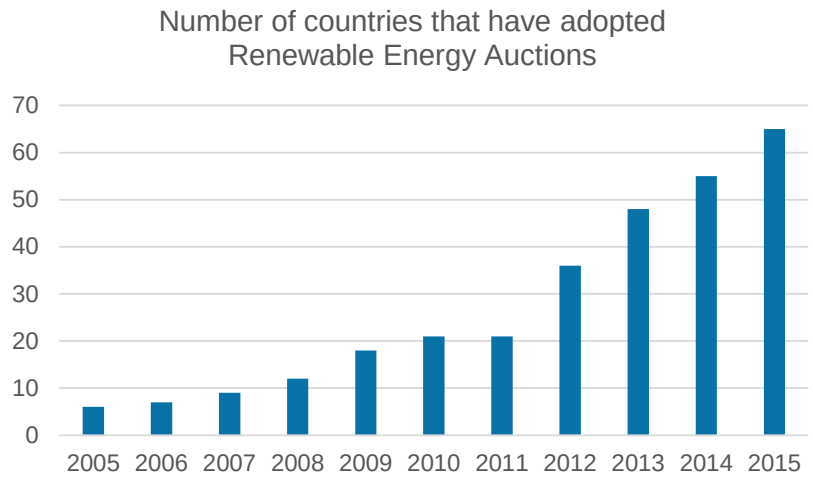
Moved from a feed-in tariff to auctions

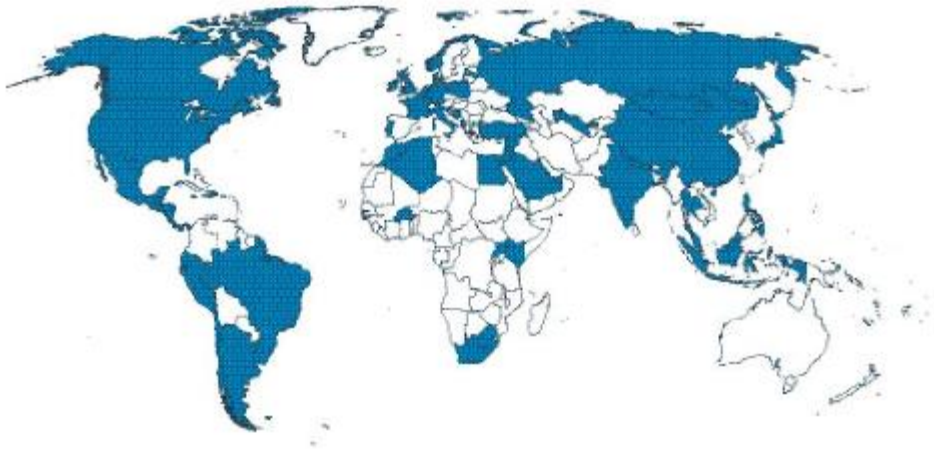
Moved from auctions to a feed-in tariff

Implemented auctions and a feed-in tariff simultaneously

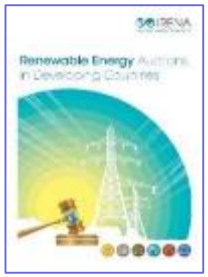
Renewable Energy Auctions

Auctions have increasingly been adopted to support renewable energy deployment





Based on REN21 Global Status Report (2005 to 2015)

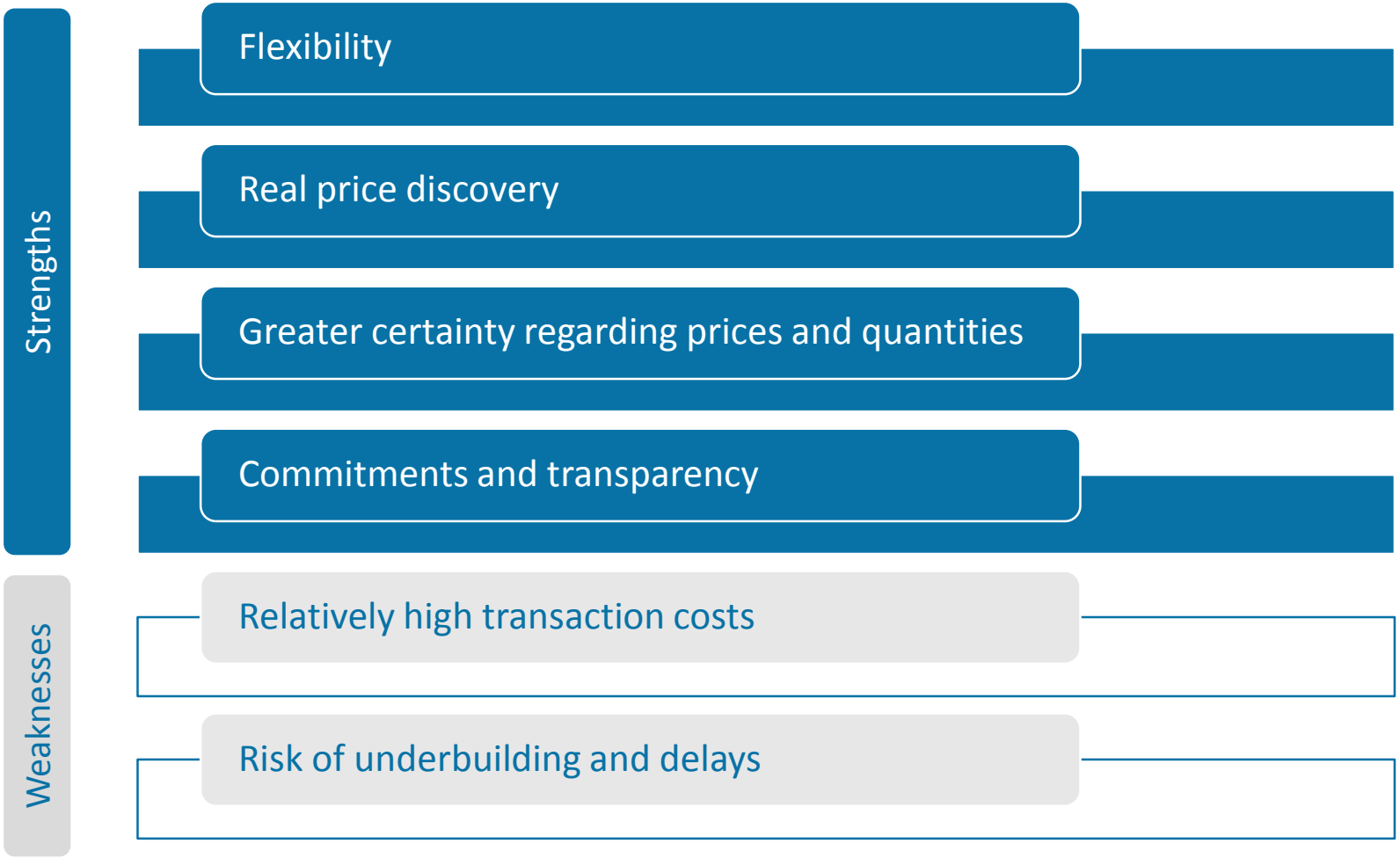


2013

2014

2015

Strengths and weaknesses of Auctions



Auction design elements

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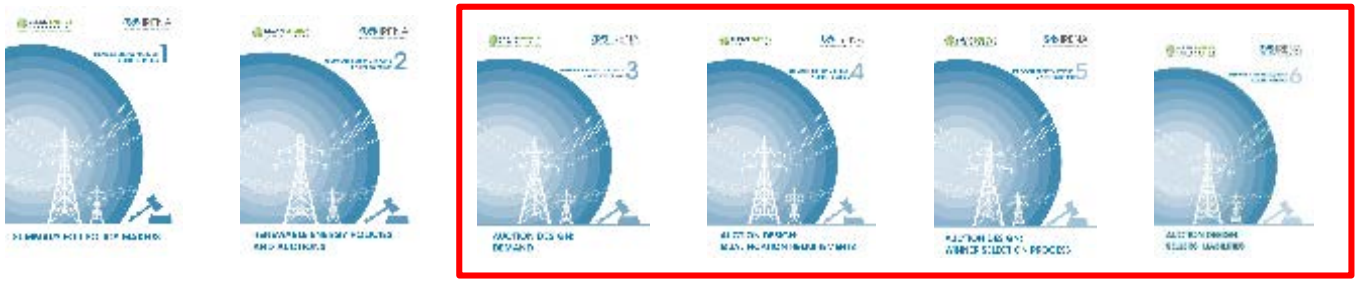
Choice of the auctioned volume and the way it is shared between different technologies and project sizes

Sets minimum requirements for future participants in the auction

Sets specific rules to ensure high implementation rate of awarded projects in a timely manner

Defines how the supply curve information is collected and based on what criteria the winner is selected



Key considerations in designing and implementing auctions

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Increasing competition for cost-efficiency

- Increased participation of bidders
- Prevention of collusion and price manipulation

Limiting participation to bidders who can meet goals

- Project delivery
- Deployment goals

Ensuring global and local socio-economic goals

- Qualification requirements
- Multi-criteria selection

Increasing competition for cost-efficiency

Diversity of technology

- Implementing a technology-neutral auction can enable the development of least-cost technologies

- Implementing a technology-specific auction can fulfil deployment goals

Volume auctioned

- Auctioning a large volume at once allows for rapid capacity addition but might result in lack of competition

Increasing competition for cost-efficiency (cont'd)

Level of participation of bidders

- Reducing entry barriers:
  - Requirements and compliance rules commensurate with market conditions
  - Resource assessments, feasibility studies and permits provided to bidders
  - Streamlined administrative procedure and one-stop-shop
  - Fair and transparent rules

- Reducing the perception of risk
  - Demand-side responsibilities
  - Increased certainty and regularity of auction rounds
  - Mitigated financial risk

Prevention of collusion and price manipulation

- Selecting an appropriate bidding procedure may prevent collusion
- Introducing a ceiling price can limit the price

Limiting participation to bidders who can deliver the project

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Reputation requirements

- Proof that bidders have the financial, technical and legal capability to develop the project to prevent speculative bidding

- Proof that bidders have the past experience and proven track record to help ensure successful delivery

Compliance rules

- Bid bonds and project completion bonds to help ensure successful and timely delivery

- Penalties for delay and underbuilding to help ensure successful and timely delivery

- Penalties for under (or over) performance to help prevent under (or over) producing

Limiting participation to bidders who can meet deployment goals

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Technological requirements

- Technologies that can compete to align with national energy policy
- Equipment specifications to ensure quality

Project size requirements

- Minimum size to enable economies of scale and reduce transaction costs
- Maximum size to encourage small and/or new players

Location constraints

- Achieve geographic diversification and avoid competition with other sectors
- Ensure proximity to the grid

Grid access requirements

- Ensure feasibility of integrating renewable electricity into the grid
- Avoid delays due to grid expansion

Ensuring global and local goals

Socio-economic impacts

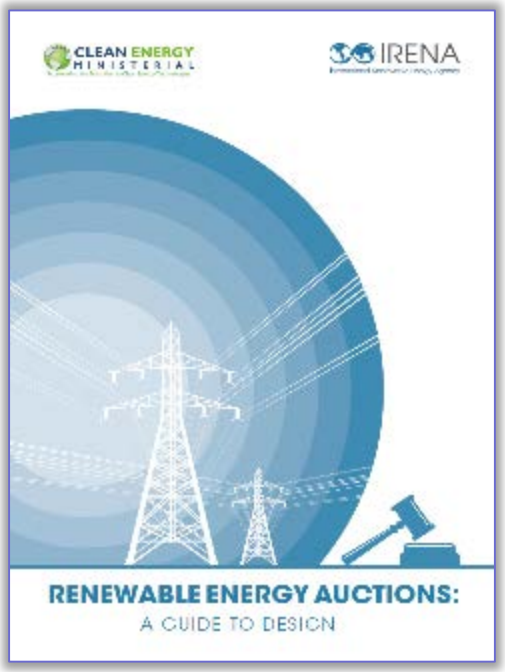
- Qualification requirements
- Multi criteria selection

- In 2015, the global renewable energy sector employed 9.4 million people
- Doubling the share of renewables in the energy mix by 2030 would:
  - increase global GDP by up to 1.1 per cent
  - improve welfare by up to 3.7 per cent and
  - support over 24 million jobs in the renewable energy sector

Conclusion

While designing auctions, policy makers may want to consider the following recommendations:

- Account for the trade-offs between different design elements
- Different policy options to support deployment are not mutually exclusive.
- Tailor the design of auctions to the specific context



Thank you!