## **RENEWABLE ENERGY AUCTIONS** Global trends and design

Sustainable Financing for Nature Positive Investments: Tools for Integrating Economic and Market-Based Instruments into Projects This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.





### Electricity is the central energy carrier in future energy systems





- By 2050, electricity would be the main energy carrier with more than a 50% direct share of total final energy consumption – up from 21% in 2018.
- By 2050, 90% of total electricity needs would be supplied by renewables followed by 6% from natural gas and the remainder from nuclear.
- Another 8% of final energy would come as indirect electricity in the form of e-fuels and hydrogen.

#### **Comprehensive policy framework for a just energy transition**



Abatements		Overview of policies to support energy transition by technological avenue		
Renewables (power and direct uses)	25%	Deploy renewables in power and direct uses	<ul> <li>Regulatory measures that create a market for solutions</li> <li>Fiscal and financial incentives that make them more affordable</li> <li>The choice of instrument and its design should be context specific and consider broader policy objectives</li> </ul>	
Energy conservation and efficiency	25%	Increase energy conservation and efficiency	<ul> <li>Energy efficiency policies (e.g. strict building codes, appliance standards) in buildings and industrial processes.</li> <li>Shift from energy-intensive modes to low-carbon modes in transport</li> </ul>	
Electrification in end use sectors (direct)	20%	Electrify end uses	<ul> <li>Targets for renewable power should consider rising demand from electrification</li> <li>Policies and power system design to support electrification in achieving its potential for providing system flexibility</li> </ul>	
Hydrogen and its derivatives	10%	Support green hydrogen	• Enabling policy framework with four key pillars: a national green hydrogen strategy, priority setting, guarantees of origin and enabling policies	
CCS and CCU industry	6%	Ensure the		
BECCS and other carbon removal measures	14%	sustainable use of bioenergy	Policies to address sustainability concerns	



# Renewables are increasingly the lowest-cost sources of electricity in many markets



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The costs of renewable energy have continued to decline. Solar PV and wind are increasingly the cheapest sources of electricity in many markets.

#### Auctions trends, weaknesses and strengths





Number of countries with auctions

Sources: REN21, 2010 - 2020



#### Total volume auctioned globally by technology, 2017-20





#### A total volume of almost **300 GW** auctioned in 2017-20, more than half from solar PV and more than a quarter onshore wind, with increasing interest in offshore wind

#### Auctions global and regional trends by technology, 2017-20



Renewable energy auctions: Capacity auctioned by region and technology, 2017-2020 (GW)



■ Solar PV ■ Onshore Wind ■ Offshore wind ■ Biomass ■ CSP ■ Small Hydro ■ Biogas ■ Renewables (Mixed)

#### What are the latest trends in price?





- Solar prices continues to fall, albeit at a slower rate, as PV auctions increasingly expand to newcomers
- Wind edged out, due to higher prices in countries where the majority of volume was auctioned

#### Factors that impact the price resulting from auctions

documentation\*

and project bankability

·P



Country-specific conditions	Investor confidence and learning curve	Policies supporting renewables	Auction design
Potential of renewable energy resources Financing costs Installation and building costs (land, labour, energy, etc.) Ease of access to equipment Foreign exchange rates	<ul> <li>Credibility of the off-taker and additional guarantees</li> <li>Presence of a stable and enabling environment that is conducive to market growth</li> <li>Past experience with auctions for both auctioneer and developers</li> <li>Clarity and transparency</li> </ul>	<ul> <li>Renewable energy targets and national plans that provide a trajectory for the sector</li> <li>Fiscal and financial incentives for RE projects</li> <li>Grid access rules</li> <li>Risk mitigation instruments</li> <li>Policies to promote</li> </ul>	Trade-off between lowest price and other objectives: • Auction demand (auctioned volume, off-taker, regularity of auctions) • Qualification requirements • Winner selection method and criteria • Risk allocation
General fiscal legislation	of auction	objectives (incl. socio-	distribution of financial

Price resulting from an auction

economic benefits and

industrial development)

and production risks)

#### **IRENA's framework for the design of renewable energy auctions**





### Key considerations in designing and implementing auctions



#### 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 socio-economic development goals

- Qualification requirements
- Multi-criteria selection



## Thank you!



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