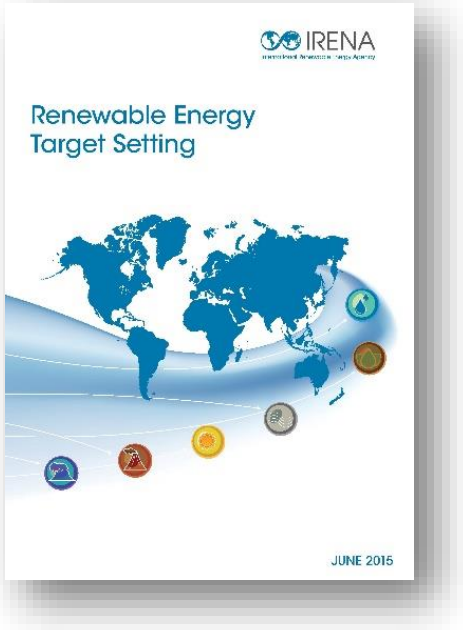
IRENA
International Renewable Energy Agency

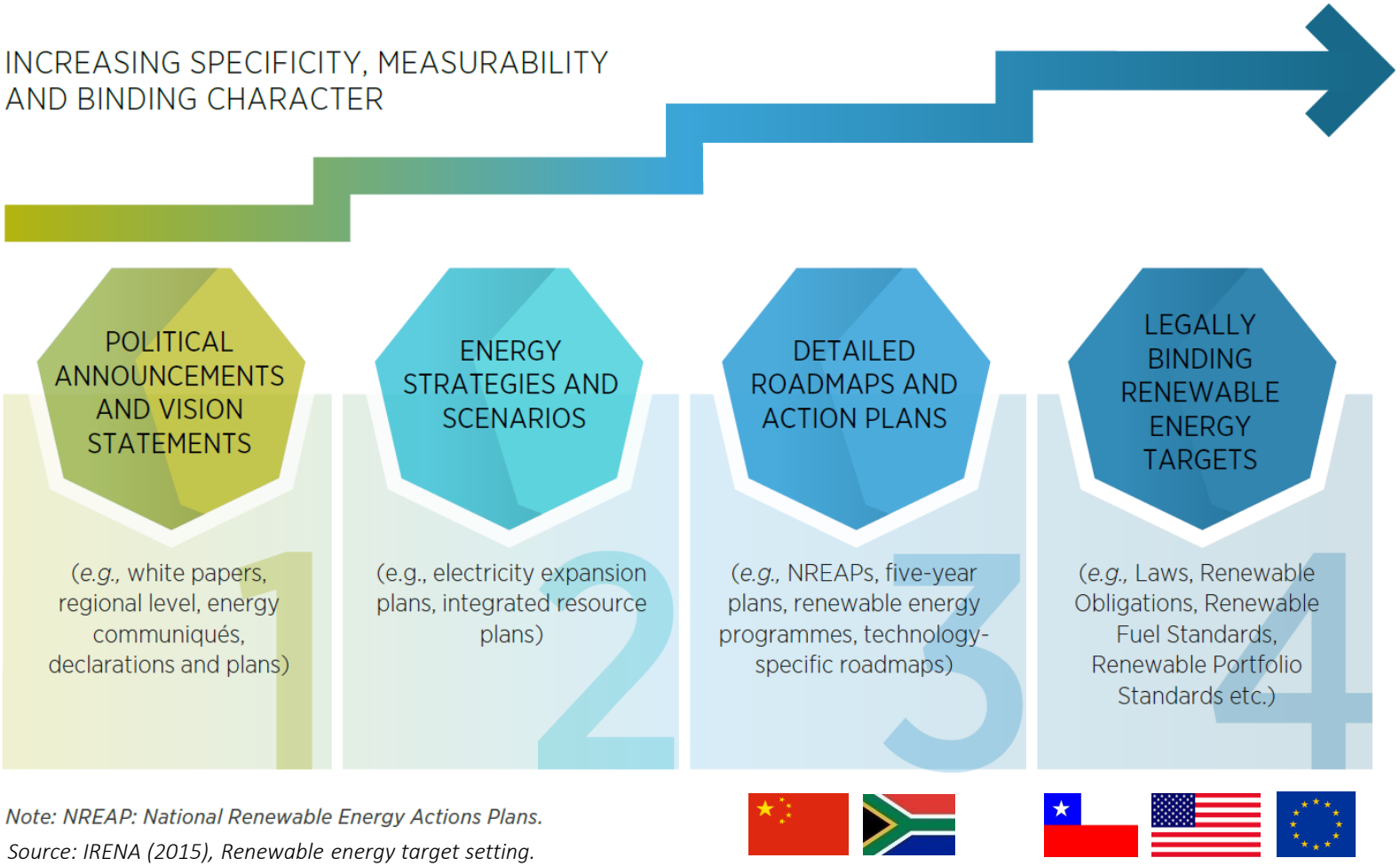
Renewable energy policies, regulations and market design

2017 IRENA Legislators Forum
Abu Dhabi, 13 January 2017

Targets in the global renewable energy landscape

173 countries have at least one type of renewable energy target **– up from 43** in **2005**





Note: NREAP: National Renewable Energy Actions Plans.

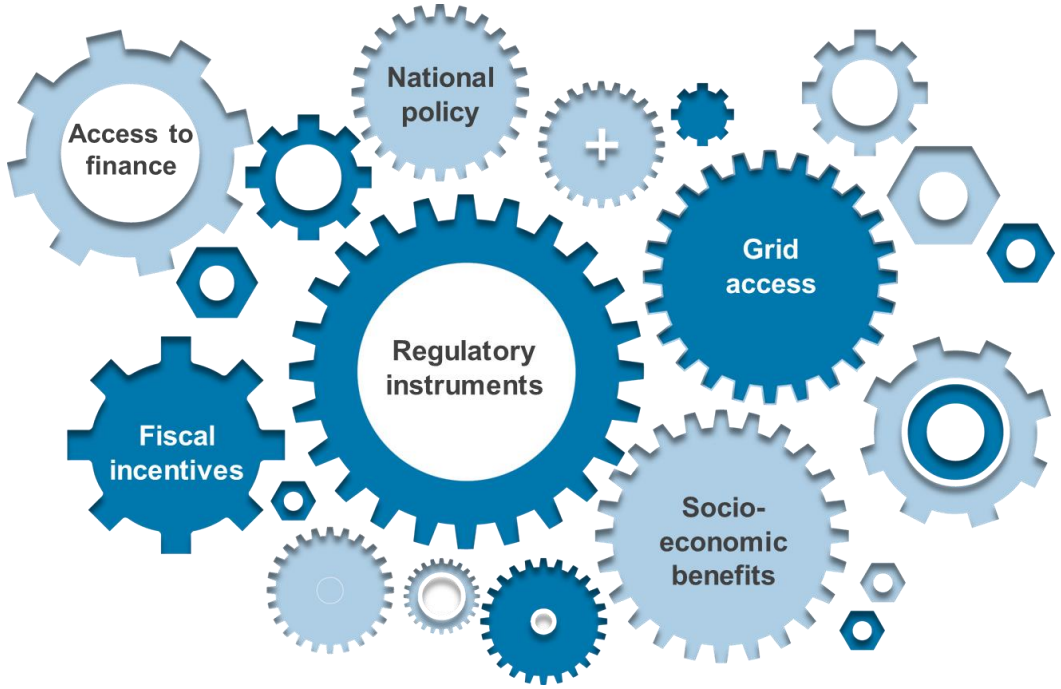
Source: IRENA (2015), Renewable energy target setting.

Types of renewable energy policies and measures

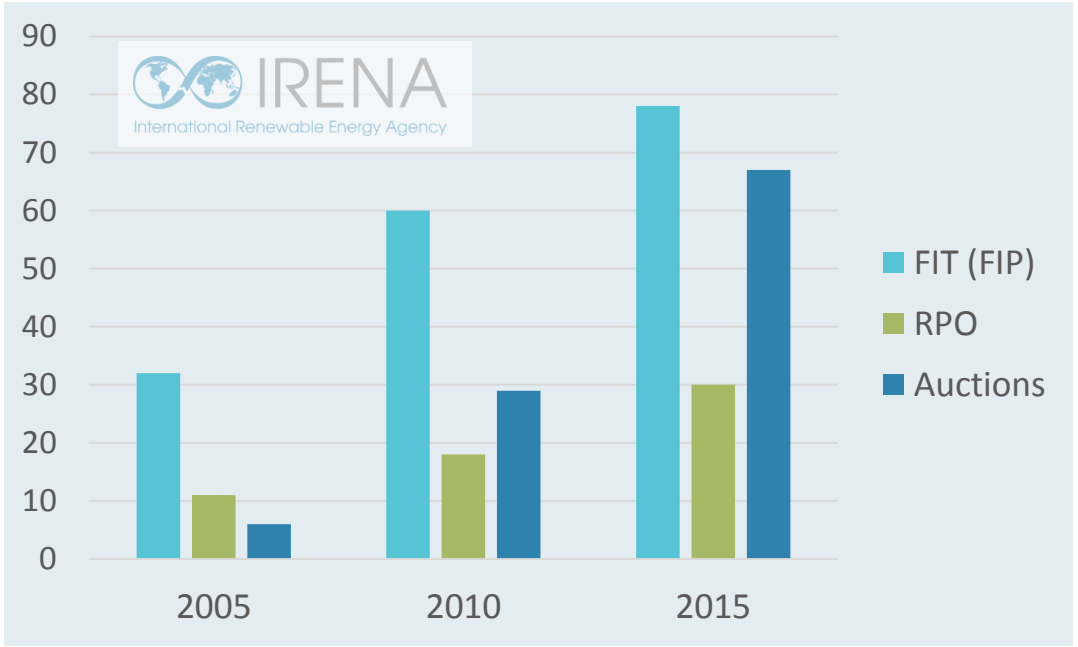
NATIONAL POLICY	REGULATORY INSTRUMENTS	FISCAL INCENTIVES	GRID ACCESS	ACCESS TO FINANCE[a]	SOCIO-ECONOMIC BENEFITS[b]
◆ Renewable energy target	◆ Feed-in tariff	◆ VAT/ fuel tax/ income tax exemption	◆ Transmission discount/ exemption	◆ Currency hedging	◆ Renewable energy in rural access/cook stove programmes
◆ Renewable energy law/ strategy	◆ Feed-in premium	◆ Import/export fiscal benefit	◆ Priority/ dedicated transmission	◆ Dedicated fund	◆ Local content requirements
◆ Technology-specific law/ programme	◆ Auction	◆ National exemption of local taxes	◆ Grid access	◆ Eligible fund	◆ Special environmental regulations
	◆ Quota	◆ Carbon tax	◆ Preferential dispatch	◆ Guarantees	◆ Food and water nexus policy
	◆ Certificate system	◆ Accelerated depreciation	◆ Other grid benefits	◆ Pre-investment support	◆ Social requirements
	◆ Net metering	◆ Other fiscal benefits		◆ Direct funding	
	◆ Mandate (*e.g.*, blending mandate)				
	◆ Registry				

Source: IRENA (2017), REthinking Energy 2017: Accelerating the global energy transition

Trends in renewable energy support policies



Number of countries with renewable energy policies, by type



Implemented auctions and a feed-in tariff simultaneously

Used feed-in tariffs to set price cap for auctions

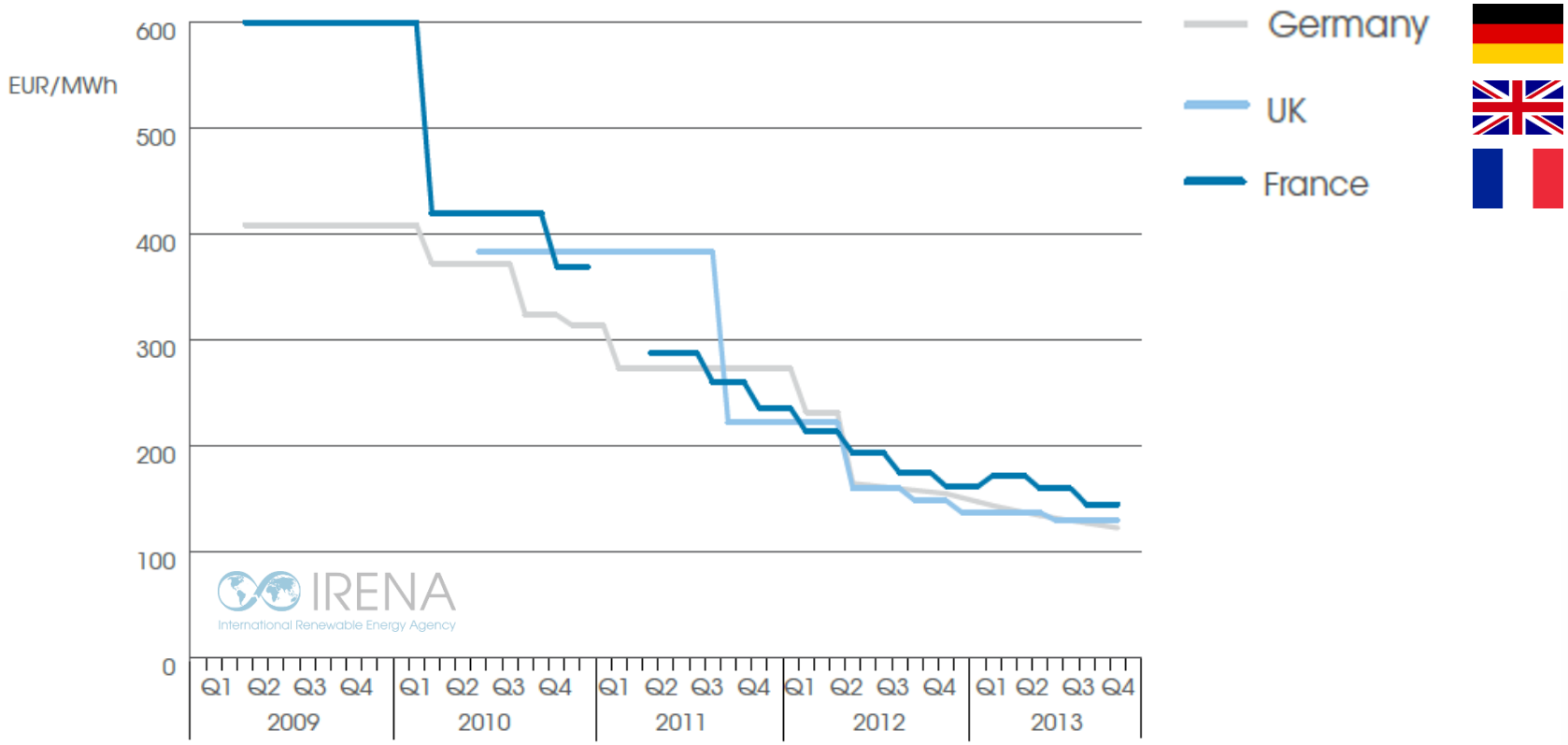
Used auctions to set feed-in tariffs

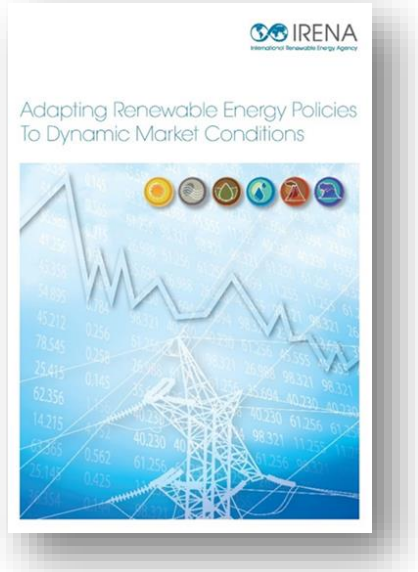
Strengths and weaknesses of FITs and Auctions

	FITs	Auctions
Strengths	Limit the risks for investors	Flexibility in the design
	Facilitate the entry of new players	Permit real price discovery
	Not exposed to public budget cuts	Provide greater certainty in price and quantity
	LT security drives tech development	Enable commitments and transparency
Weaknesses	Costly with high deployment rates and generation not exposed to electricity market prices	Relatively high transaction costs for developer and auctioneer
	Tariff setting and adjustment process challenging	Risk of underbuilding and delays

Keeping pace with Rapidly Decreasing Costs - FITs

PV FIT degression mechanism in Germany, the U.K. and France





Source: IRENA (2014), Adapting renewable energy policies to dynamic market conditions

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Renewable Energy Auctions

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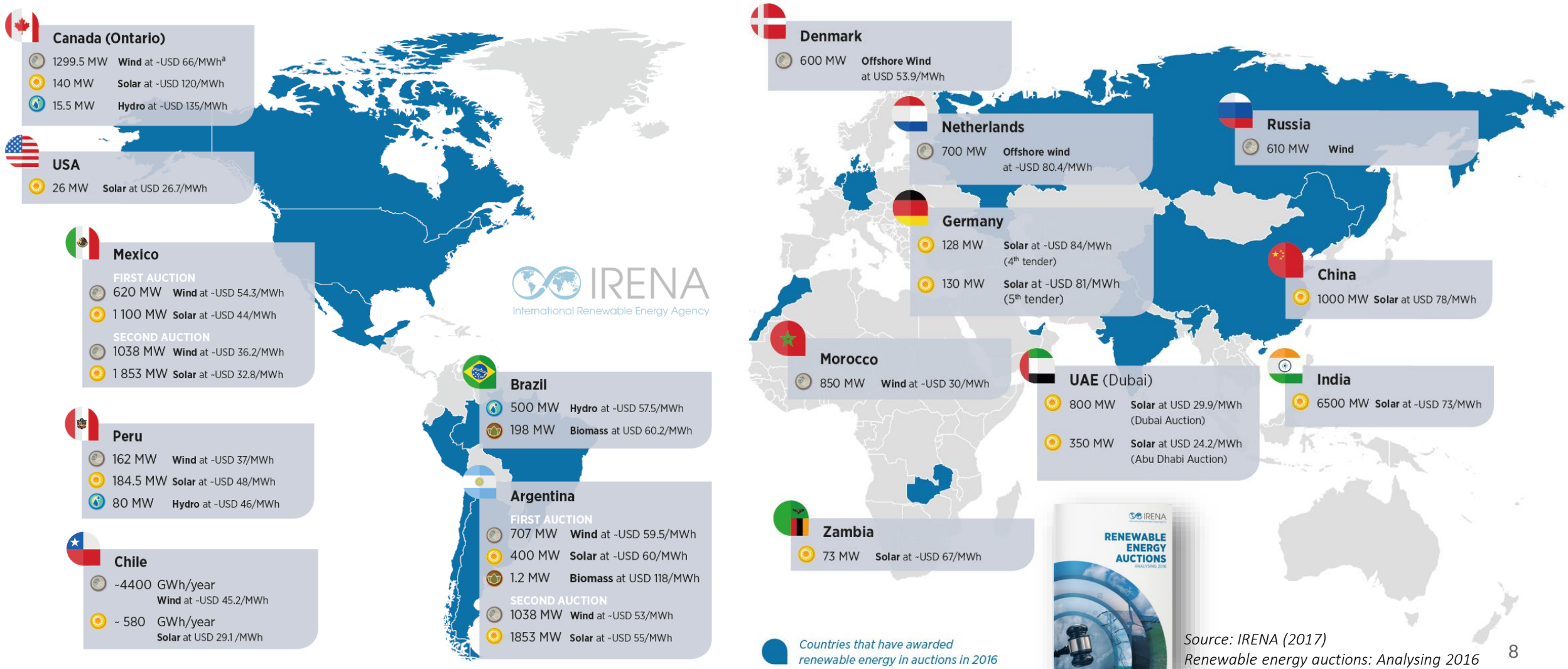
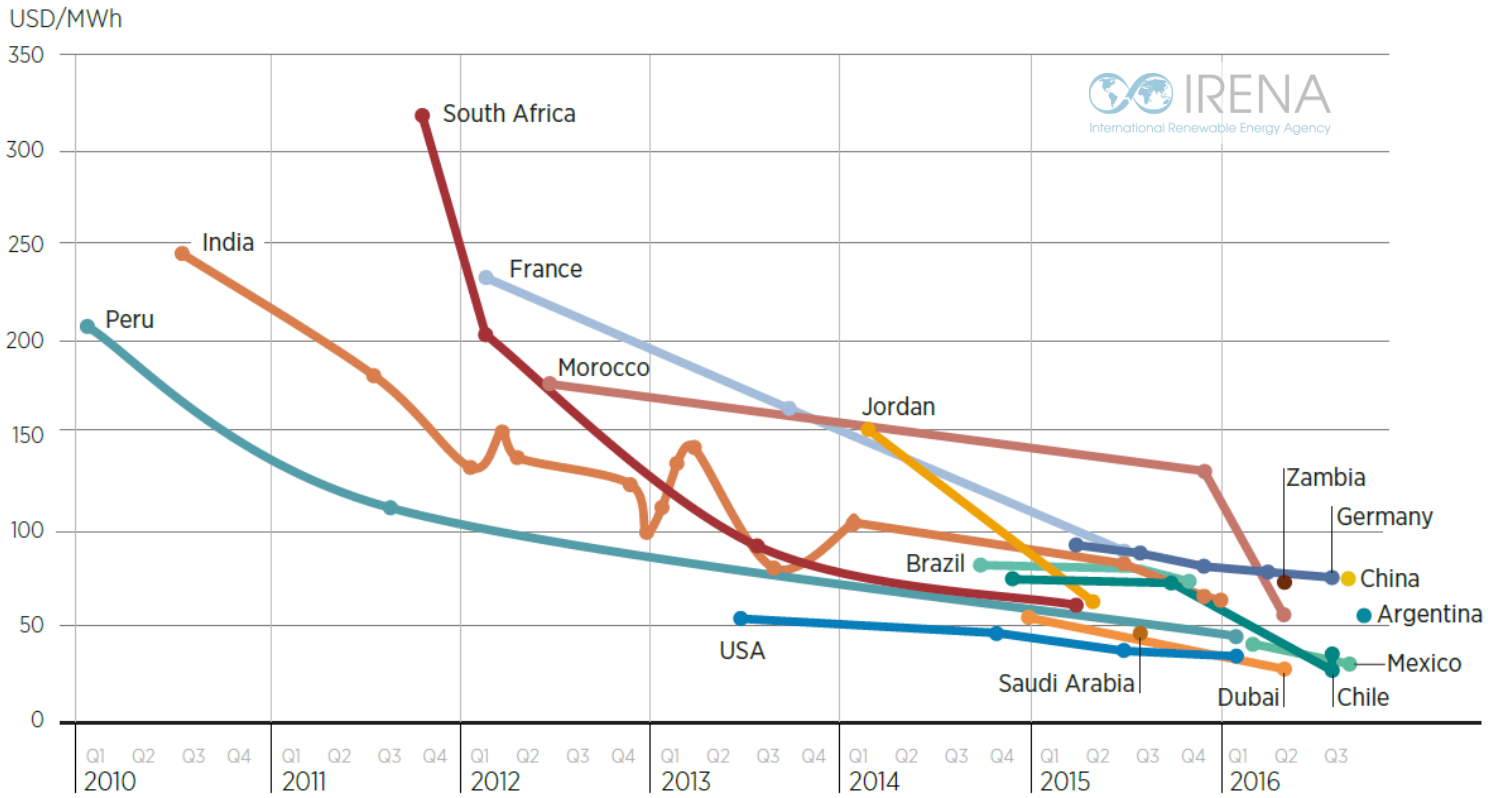
Recent highlights



Source: IRENA (2017)
Renewable energy auctions: Analysing 2016

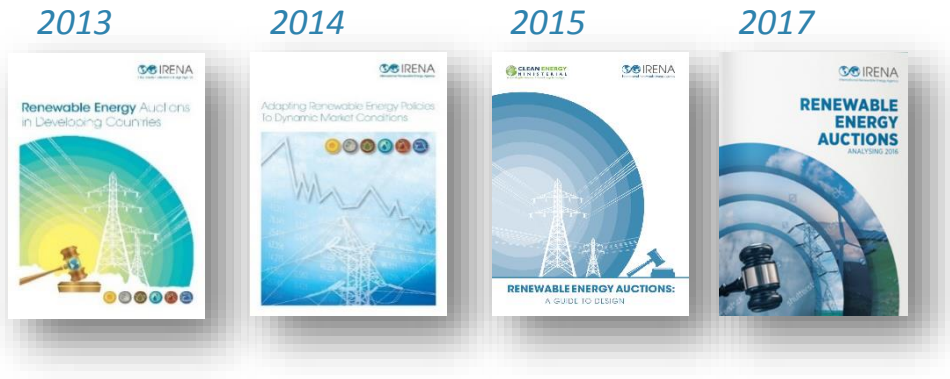
Renewable Energy Auctions



Source: IRENA (2017) Renewable energy auctions: Analysing 2016

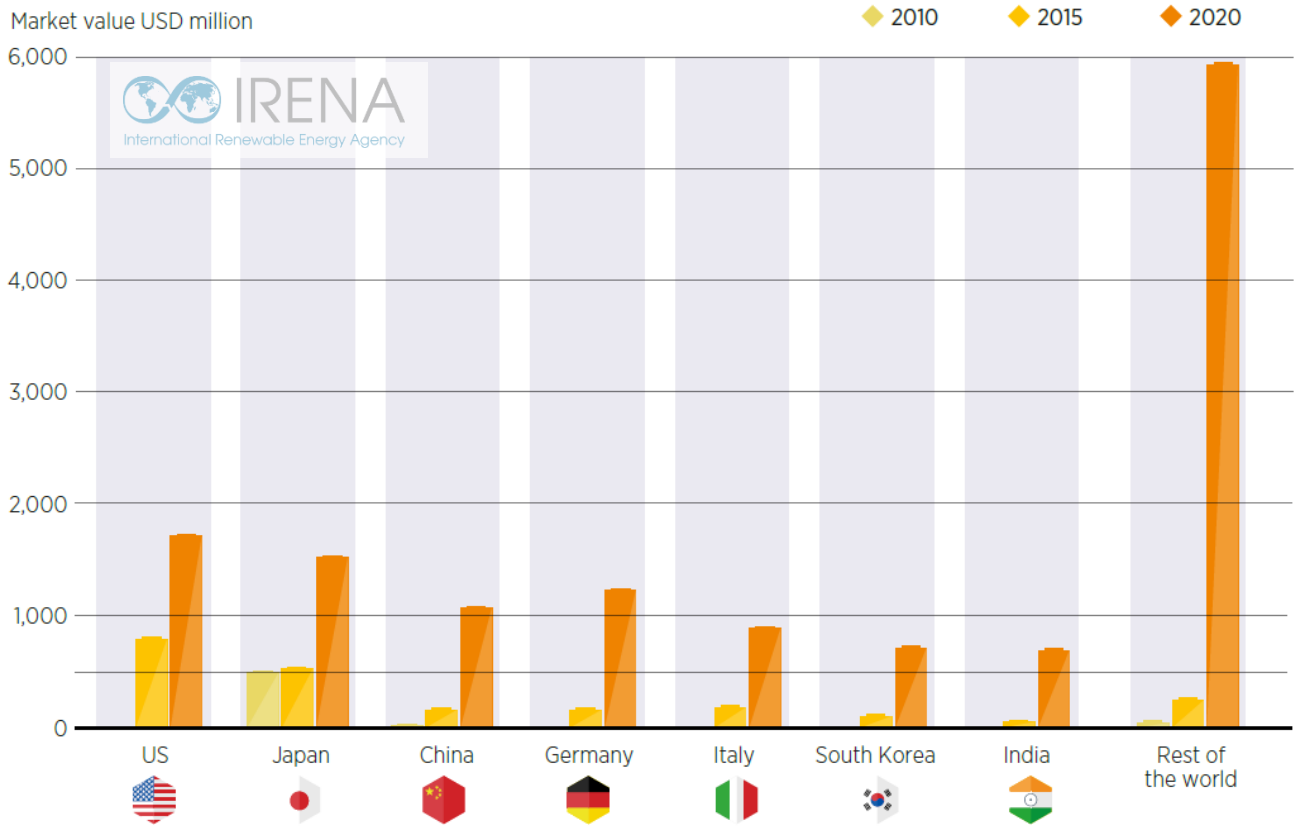
Cost determining factors:

- Country specific economic conditions
- Investor confidence
- Enabling environment
- Design elements of the auction



Variable Renewable Energy

- Increasing shares of variable wind and solar PV in power systems can be challenging for system operations.
- Potential solutions for effective and efficient integration of VRE aim at adding flexibility through: storage, demand and supply side management, improved market design and system operation, and enhanced T&D networks.
- Among storage technologies, batteries have shown promising growth in recent years. The market value of battery storage reached USD 2.2 billion in 2015 and is expected to rise to USD 14 billion by 2020.



Source: IRENA (2017), REthinking Energy 2017: Accelerating the global energy transition

Conclusions

- In combination with increased investments and technological innovation, policies will continue to unlock RE markets in both the modern and the off-grid context.
- The value of renewable energy goes well beyond the energy services it provides.
- It helps countries meet their SDGs on poverty alleviation, health, water, nutrition, cities and climate.

Source: IRENA (2017), REthinking Energy 2017: Accelerating the global energy transition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