

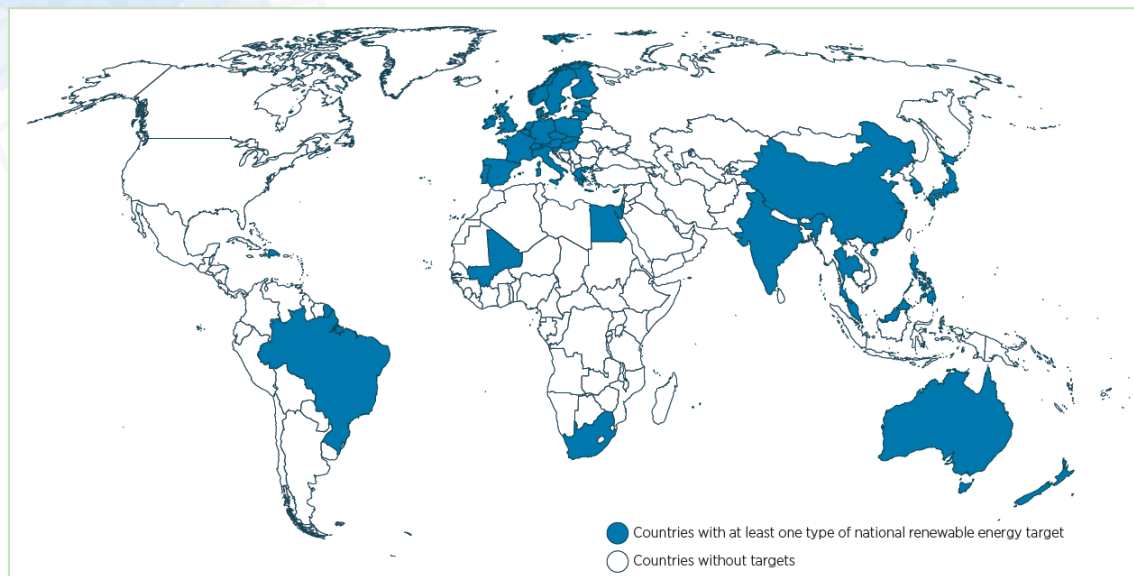


Best Practices in Implementing a Renewable Energy Strategy

APERC Annual Conference 2017
16-17 May 2017, Tokyo, Japan

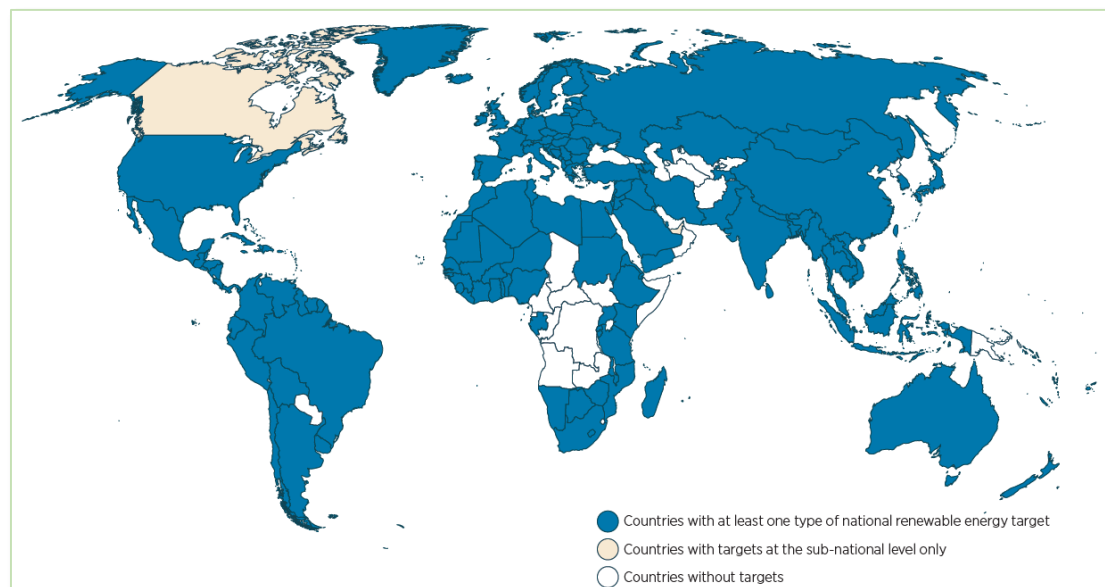


RE Targets

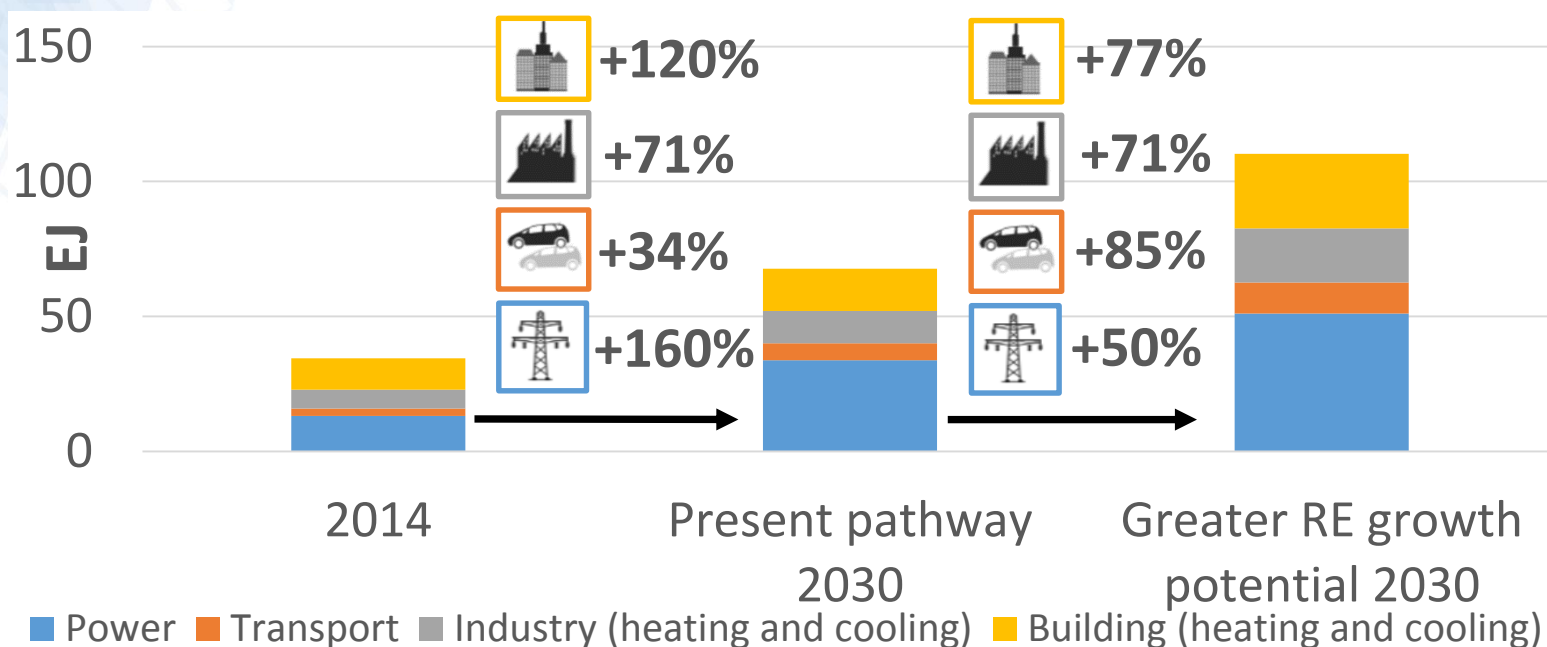


43 countries with RE targets in 2005

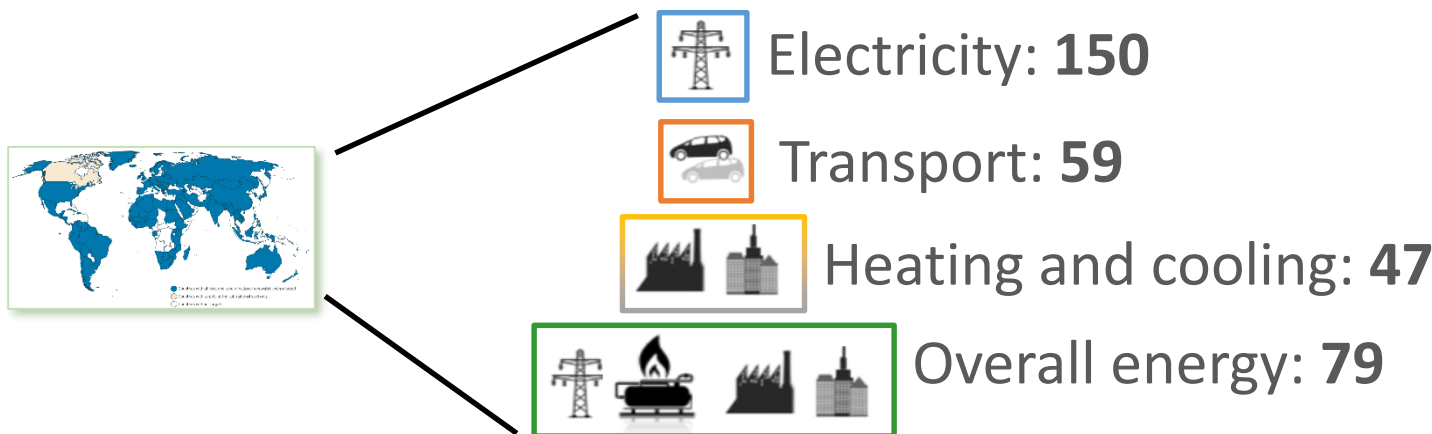
In 10 years ...
164 countries



End-use sectors require more attention

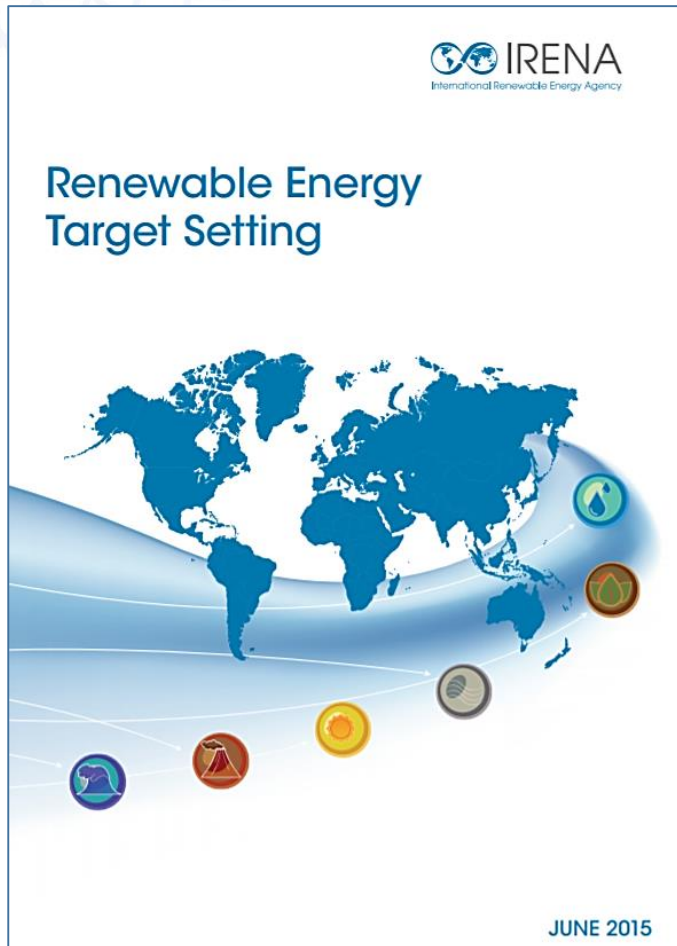


Number of countries with national RE-targets for subsectors



Sources: IRENA (2016), Roadmap for a Renewable Energy Future
IRENA (2015), Renewable Energy Target Setting

Best practice: Good targets



Quantitative

Long-term vision

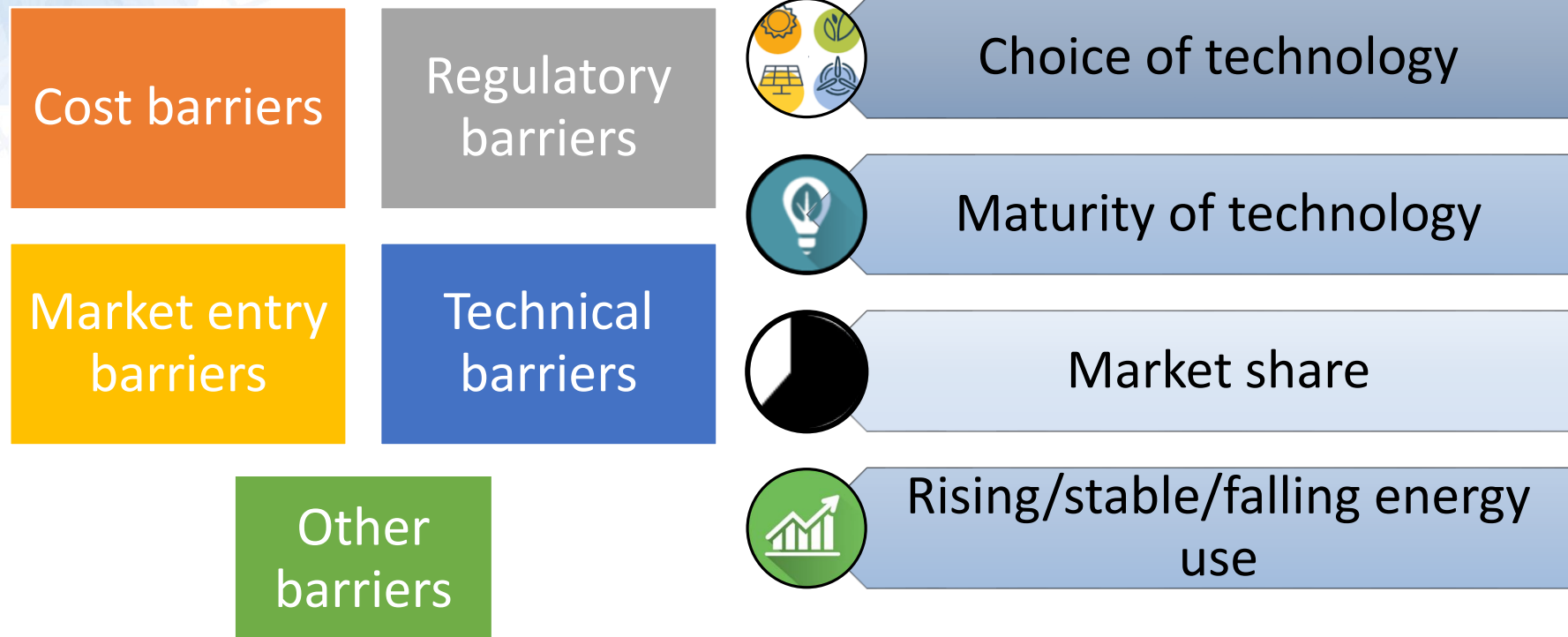
Consensus based

Consistent with overall sector
targets (including non-RE)

Wide range of policy measures and instruments

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

Barriers are market specific



Best practice

- Adaptation to dynamic market changes
- Learning by doing

FIT and Auction

FITs

Strengths

Limits the risks for investors also in emerging technologies

Facilitates the entry of new players in the market

Often funded by consumers and not exposed to public budget cuts

Long term security drives technological development

Weaknesses

Costly with high deployment rates and Generation is not exposed to electricity market prices

Tariff setting and tariff adjustment process is challenging and complex

Auctions

Flexibility in the design according to conditions and objectives

Permit real price discovery

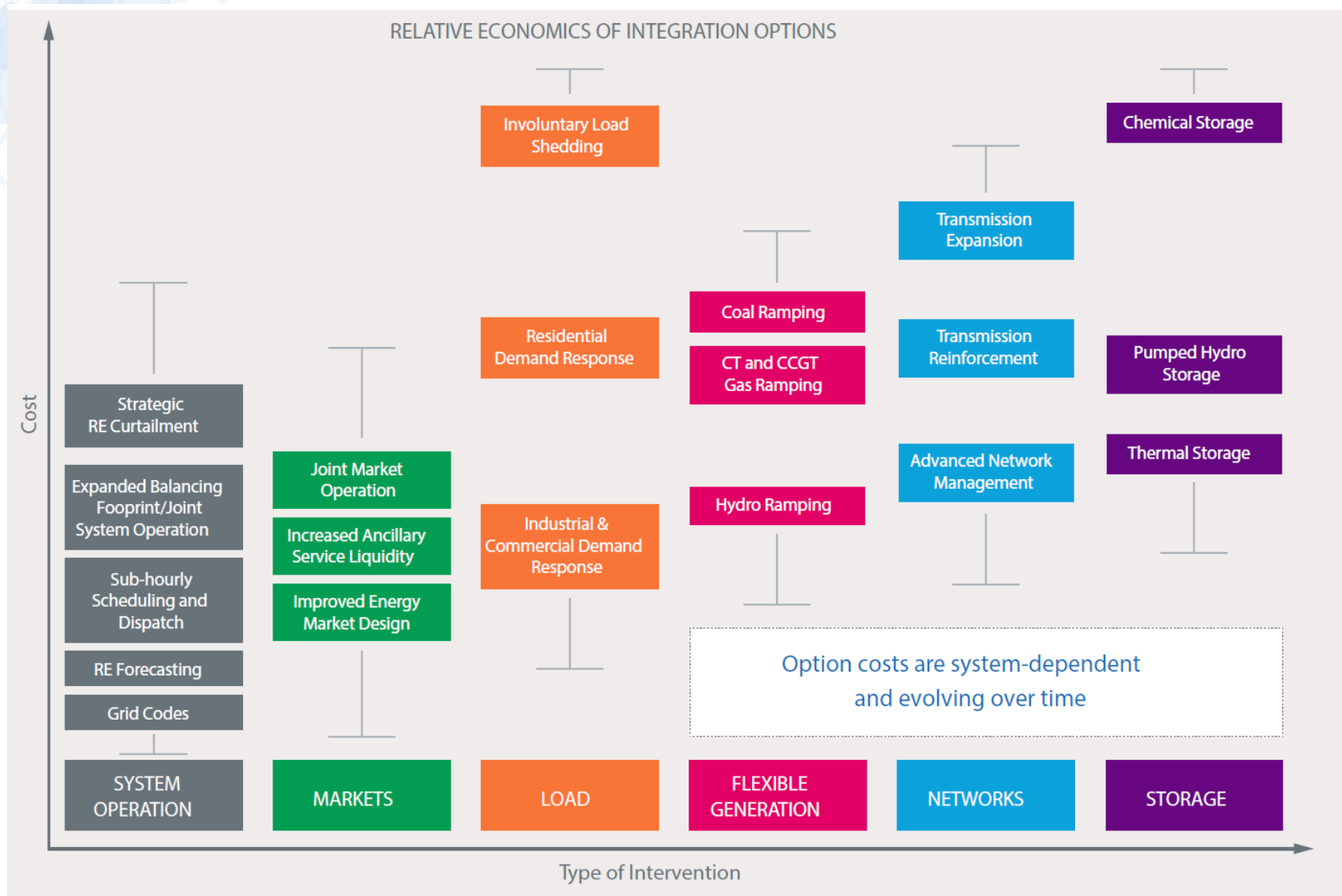
Provide greater certainty regarding prices and quantities

Enable commitments and transparency

Are associated with relatively high transaction costs for both developer and auctioneer

Risk of underbidding and delays

Integration into existing infrastructure



Planning challenges with VRE



Network incidences



Curtailment

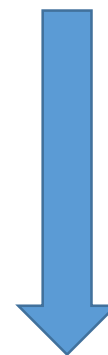


Transmission grid



Designing cost-effective capacity mix

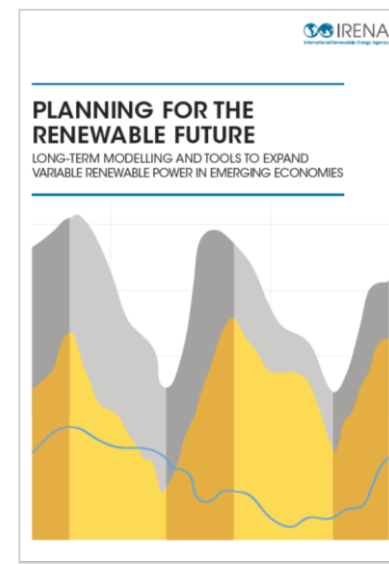
Problem driven



Long-term cost efficiency

Best practices

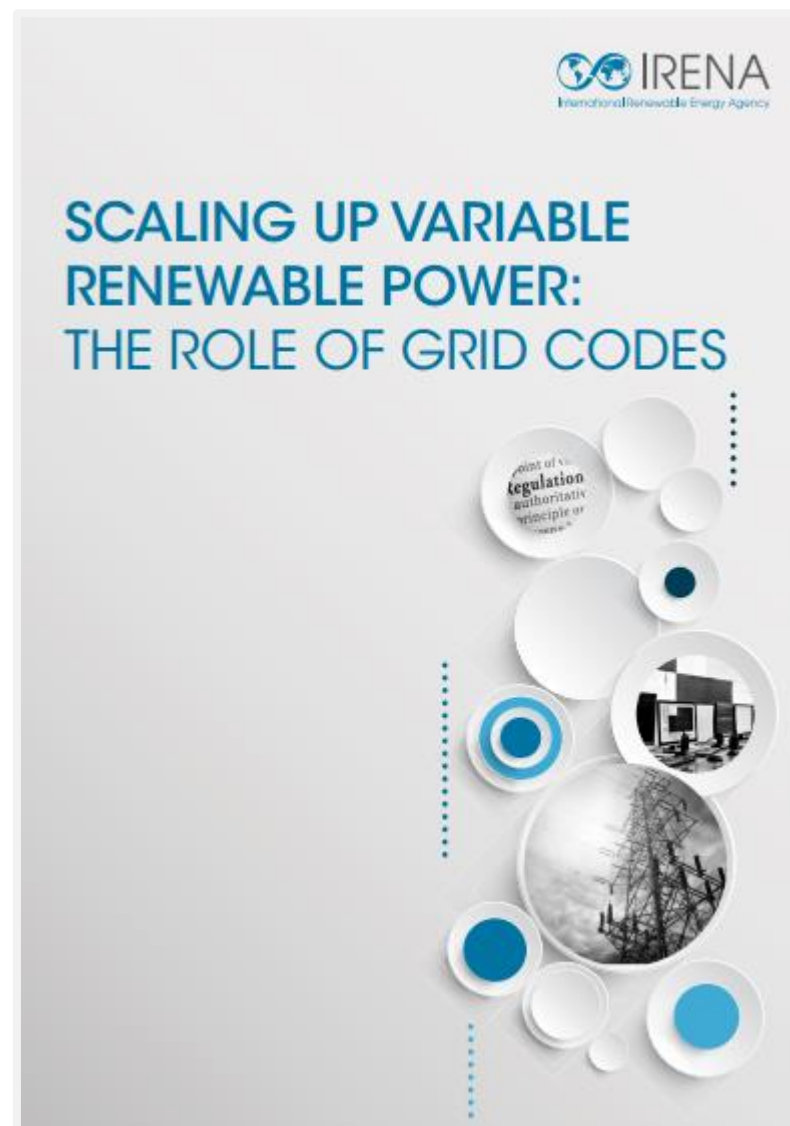
- Long-term planning
- Coordination of planning over different time horizon



Grid code for scaling up renewables

Best practices

1. Design a predictable and reliable grid code revision process.
2. Consult with all relevant stakeholders.
3. Anticipate requirements of a dynamically changing system.
4. Join regional initiatives to harmonize requirements and share resources.
5. Learn from other countries, but design the grid code to your country context.



- Consistent, long-term targets are needed
 - RE and non-RE
 - Power and non-power
 - Long-term and near-term
- Policy and targets need to be consensus based
- Revision of policy and targets needs to be institutionalized



IRENA

International Renewable Energy Agency

