

16th **ERRA** Energy Investment and Regulation Conference

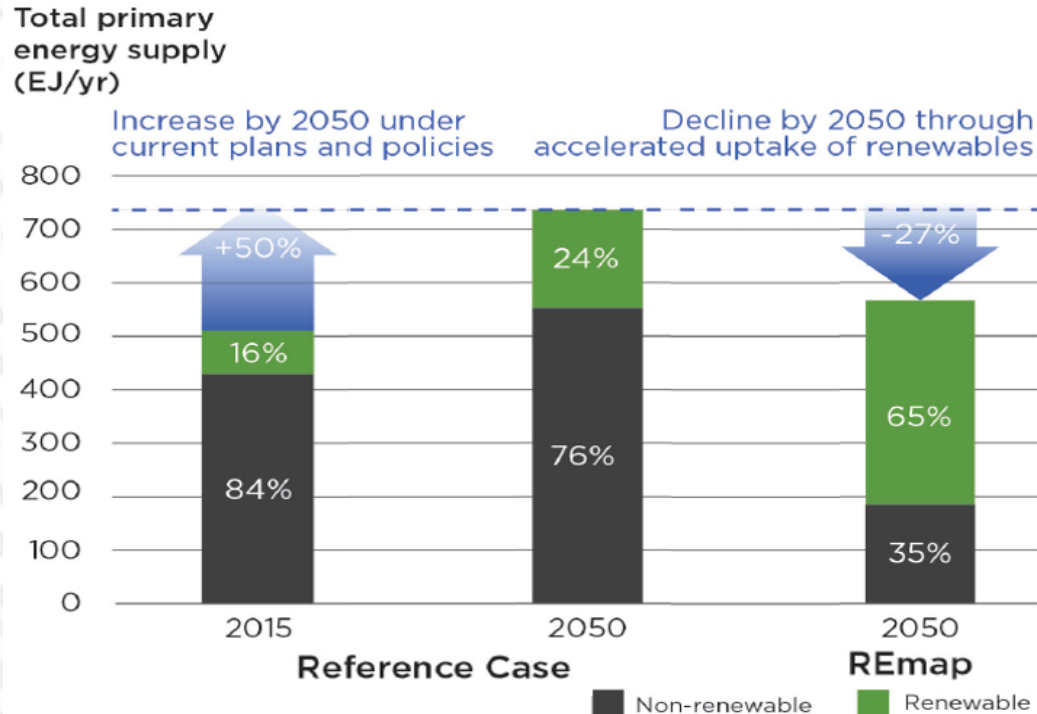
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Mobilizing investment into the renewables sector: how different actors – in developing and developed countries, public and private finance institutions – can work together in order to accelerate the introduction of renewables

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Towards a sustainable energy mix



Increasing the share of renewable energy to 65% with enhanced energy efficiency can cut energy sector CO₂ emissions and achieve the 2° C target

Source: IRENA (2017)

Economics of energy transition

Boosts **global GDP**



- **0.8% higher in 2050** compared to current plans and policies
- **USD 19 trillion** in cumulative economic gains, 2015-2050

Creates **jobs**



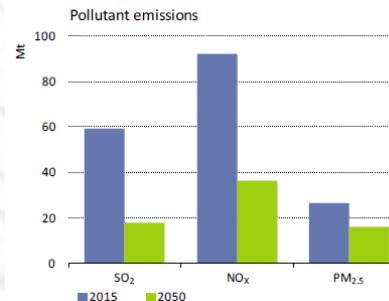
- **Total 26 million employed in renewables by 2050** from 9.8 million today
- Job creation exceeds fossil fuel job losses when combined with energy efficiency job gains

Improves **welfare**



- **Health, environmental and climate** benefits that GDP fails to capture
- Saving up to **six times** more than the additional costs of decarbonisation

Reduces air pollution



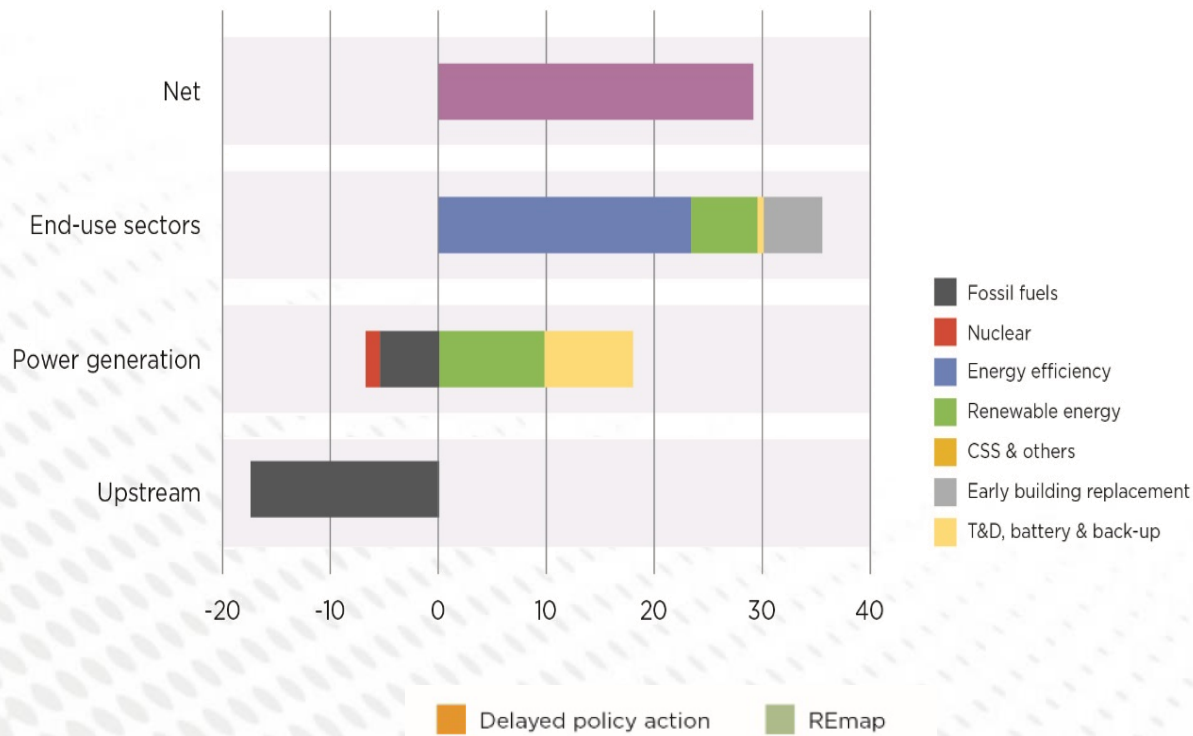
Environmental,
social and
economic
benefits of
transitioning to a
low-carbon
energy sector

Source: IRENA (2017)

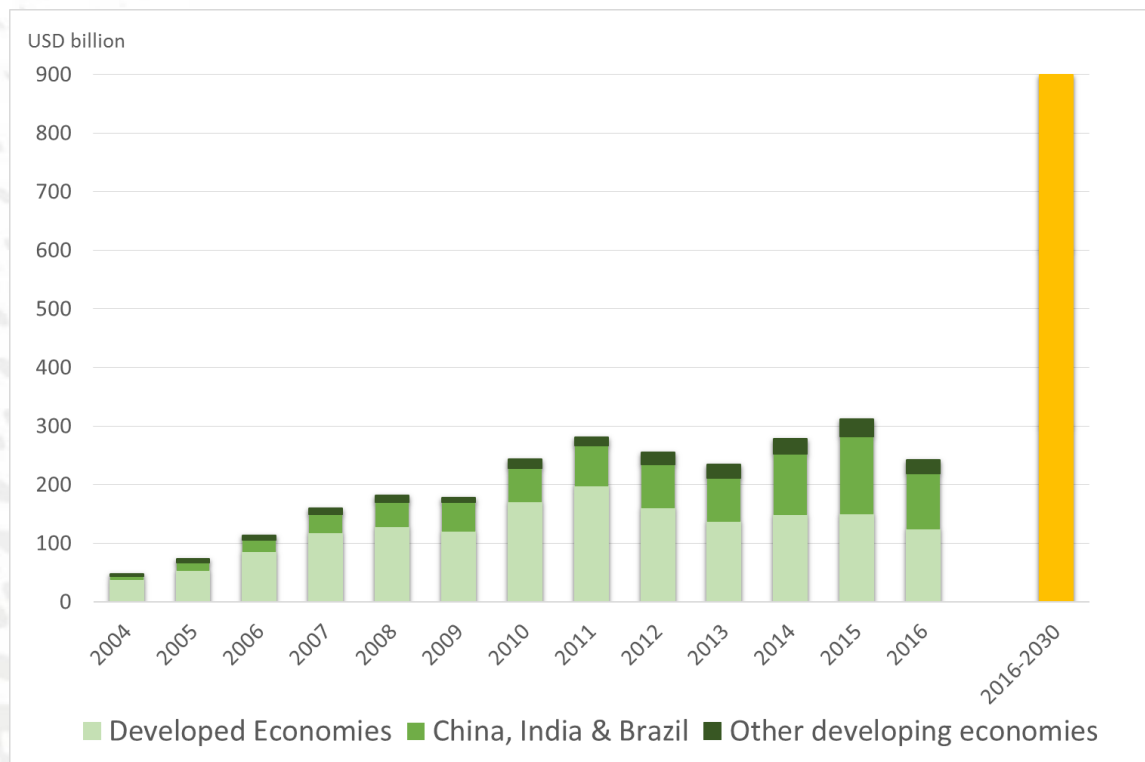
Additional investment need for energy decarbonization

The 2°C target requires investing additional USD 29 trillion net (compared to Ref).

Largest investment needs are: 1) energy efficiency; 2) renewables; and 3) T&D, back-up & storage.

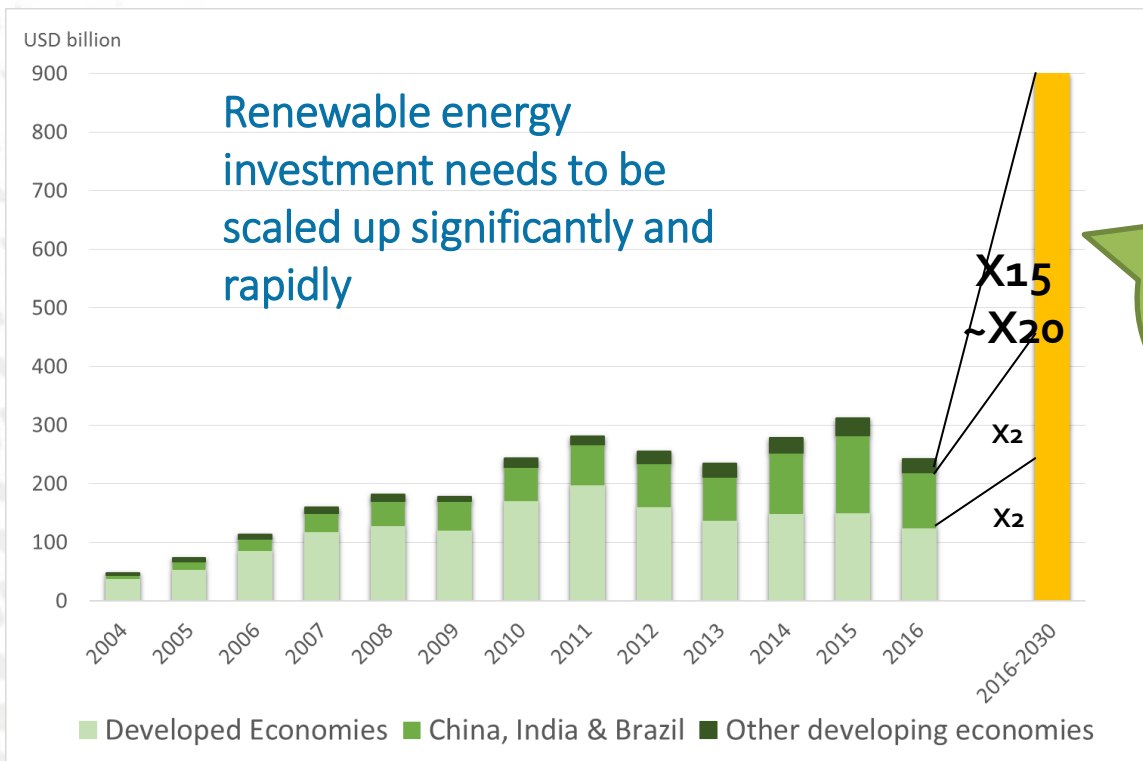


Renewable energy investment trends



Source: IRENA using BNEF data (2017)

Investment needs for the energy transition



RE investment in developing economies need to grow 15 to 20 folds

Source: IRENA using BNEF data (2017)

Areas of action



To accelerate the
introduction of
renewables

Stable policy
& regulatory
frameworks

Adaptive
power sector
infrastructure

Financial risk
mitigation

Areas of action



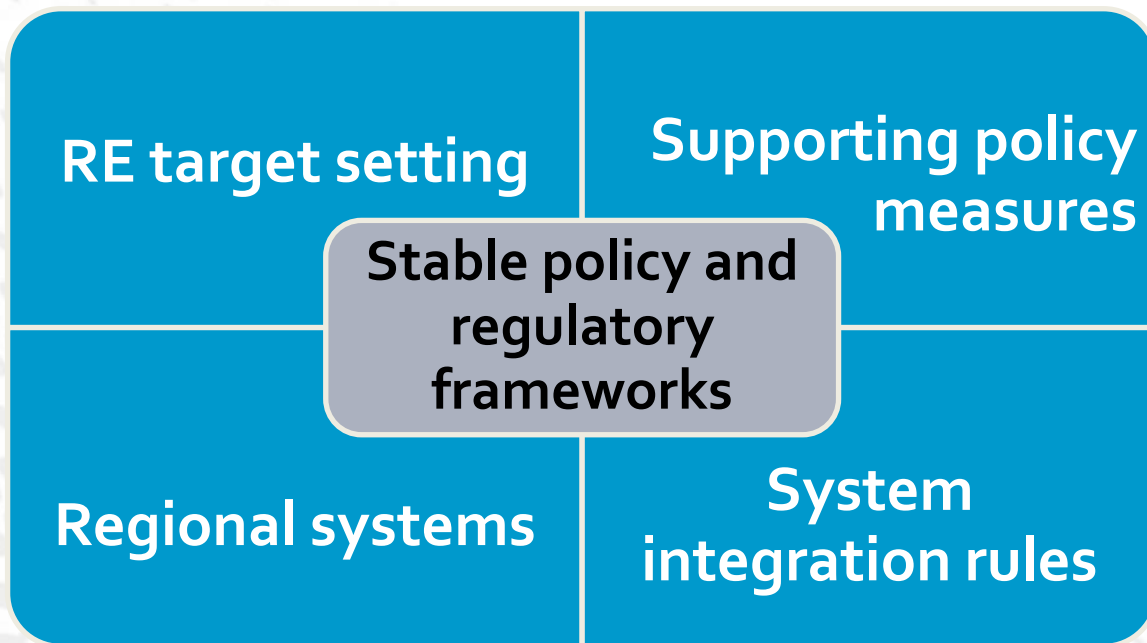
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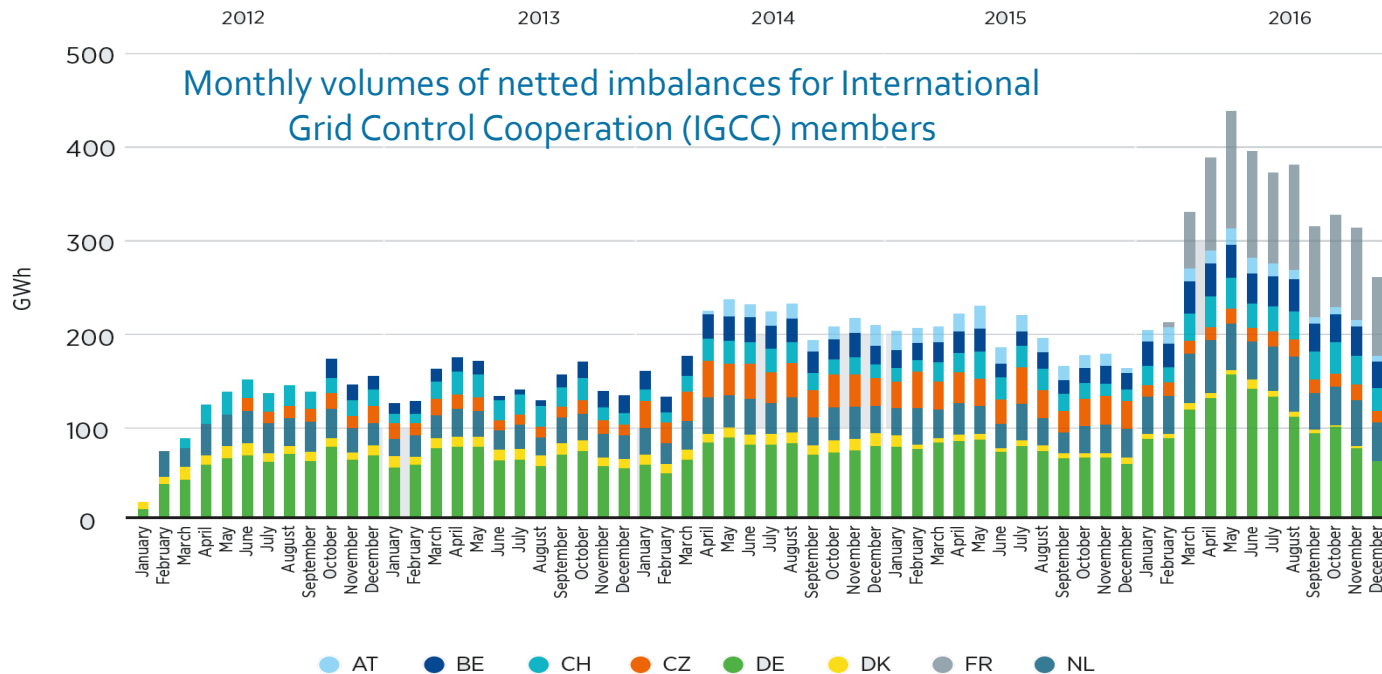
Financial risk
mitigation

The role of regulators



Regional market integration

Market integration is a key driver to promote overall efficiency and system security



Source: IRENA (2017)

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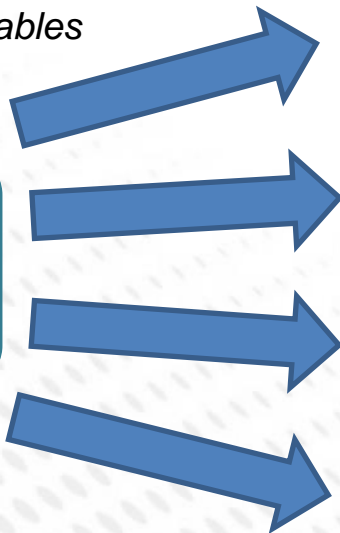
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RE contributes to grid stability

*Relevant to developing markets where
the penetration of variable renewables
is still relatively low*

Utility-scale
solar PV
plants/farms



Provide ancillary services to the grid

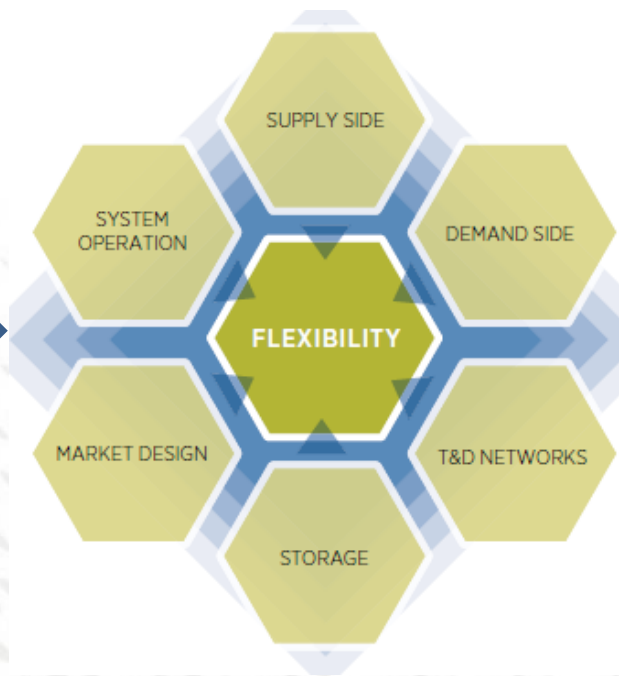
Smooth out grid fluctuations

Enhance system flexibility and
reliability

Reduce needs in spinning reserves

Essential to put in place policies that allow renewable energy to contribute

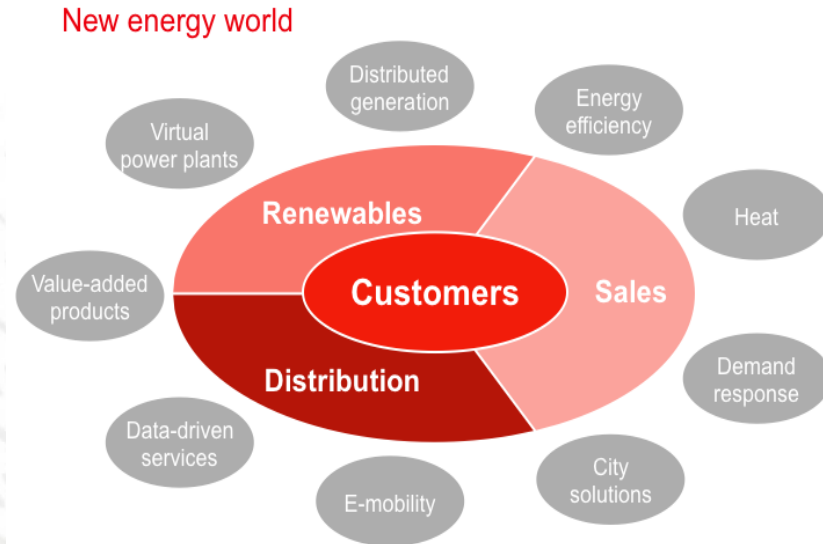
Growth in the
share of variable
and distributed
renewables



A portfolio of flexibility measures needed to
support integration of variable renewables

Changing ownership structures

- Move from passively managing distributed energy resources, to actively integrating them
- Reform of tariff design
- Changing role of different players
- Involvement of new players and the emergence of new business models



Source: E.ON

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infrastructure

- Regulators
- Utilities
- TSO/DSO

Financial risk
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Areas of action



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The role of public finance



Crowding-
in private
investment

Limited public finance

Public finance institutions
can facilitate and mobilize
private investment.

Key challenges in unlocking RE investment

Lack of pipeline of
investment-ready projects

High risk perceptions

Insufficient investment size and high
transaction costs

How the challenges can be overcome:

Improve project quality and visibility with

- project preparation facilities
- IRENA Sustainable Energy Marketplace
- on-lending structure

Enhance investor confidence through:

- risk mitigation instruments
- credit enhancement tools
- information on successful projects

Increase investment size and improve market liquidity with

- standardised contracts
- aggregation of assets
- securitisation
- capital market instruments

Policymakers should help to set the right incentives for public finance institutions to move into this direction

Risk mitigation instruments offered by public finance institutions

Early stage innovation fund

- Sheikh Mohammed bin Rashid Al Maktoum Fund (UAE)
- National Clean Energy Fund (India)

Capital cost reduction programmes

- Green Tech Financing Scheme (Malaysia)
- Sustainable Energy Financing Facility (EBRD in Turkey)

Guarantees and guarantee funds to mitigate specific risks

- Partial risk guarantee (ex. AfDB for Lake Turkana Wind Project in Kenya)
- Geothermal Fund Facility (Indonesia)
- Geothermal Financing and Risk Transfer Programme (IADB in Mexico)
- Currency Risk Guarantee Fund (India)

Risk mitigation facilities using various financial instruments

- Geothermal Risk Mitigation Facilities in East Africa and Latin America
- Regional Liquidity Support Facility for Sub-Saharan Africa

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Financial risk
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- **Public finance institutions**
- **Private insurers**
- **Commercial banks**
- **Policymakers**

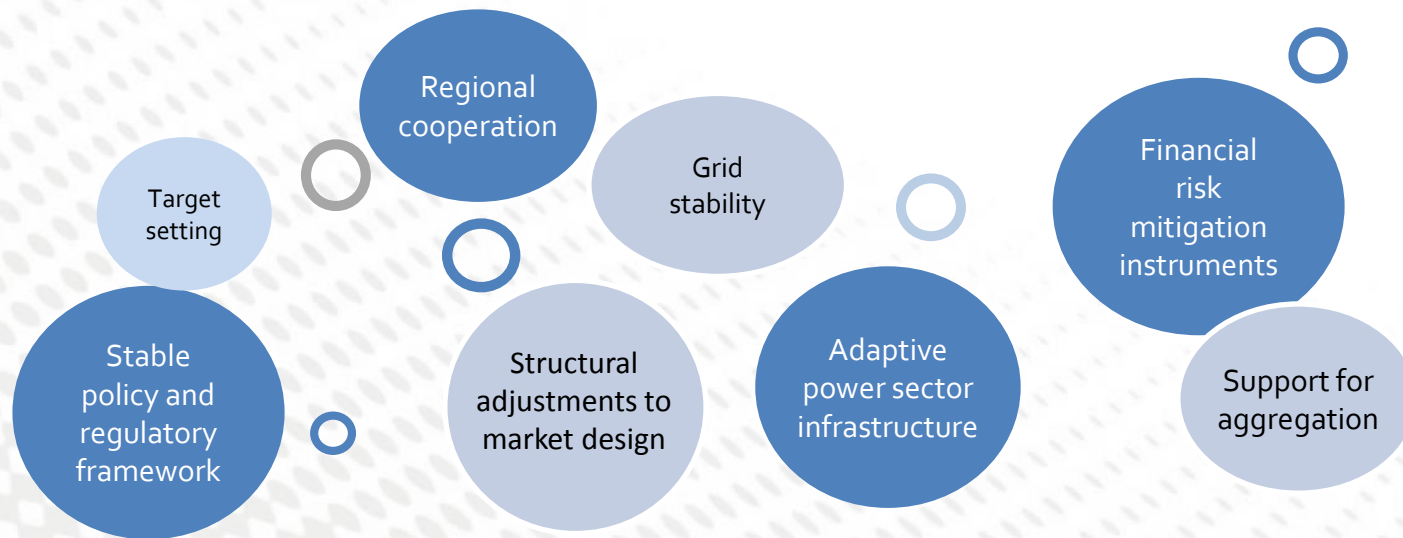
Summary

Key Actors

Governments
and
policymakers

Regulators
and operators

Public finance
institutions



THANK YOU FOR YOUR ATTENTION!



- Dr. Henning Wuester



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