

Regional and Global Energy Interconnection (RGEI)

Facilitating policy dialogue and cooperation on regional electricity grid and power market integration to maximise the use of renewable energy sources

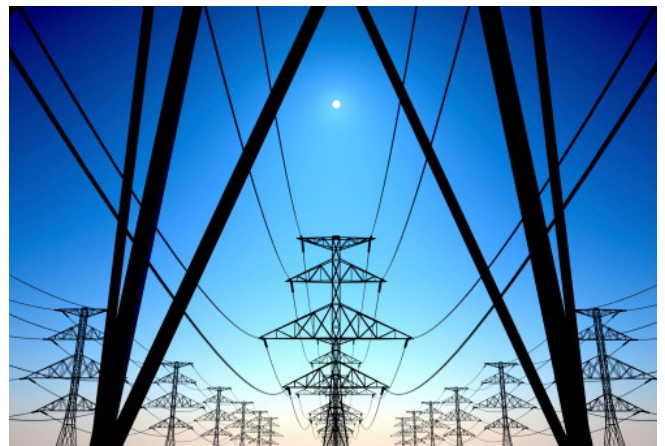
Goals

RGEI's objective is to facilitate the transition of energy systems to more interconnected, and electrified modern energy systems, and maximise the use of renewable energy. It focuses on facilitating policy discussions among CEM Member countries on regulatory and market framework for electricity system integration in Member countries's regions.

Rationale for being included in the CEM

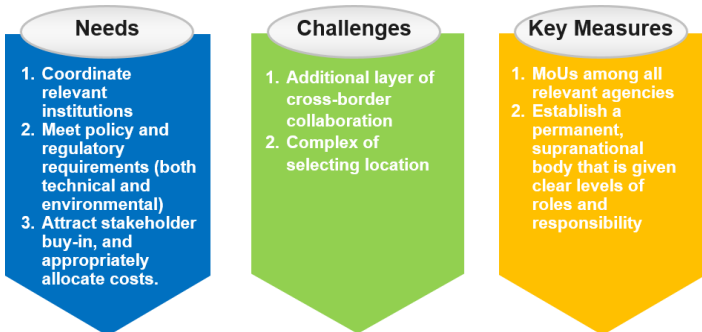
Robust electricity transmission is a key enabler of integrating variable renewable energy in larger geographic regions. A cost-effective interconnection at much larger scales could deliver a range of benefits, such as balancing mismatches in supply and demand, peak and valley capacity, realising complementarity in different regions and energy types, as well as accessing remote energy resources.

Many CEM Members have a long history of integrating power system across intra-and international boundaries. However, there is no global-level cooperation platform for cross-boarder electricity interconnection. Electricity system integration between countries with different market structures requires some degree of market and regulatory harmonisation.



Picture Source: www.acer.europa.eu

Energy supply and systems integration



Key factors for consideration for regional electricity interconnection

Potential impact

- The RGEI Initiative will facilitate the development of sustainable, secure and affordable regional electricity systems.
- It will contribute to climate change mitigation and decarbonisation of energy systems.
- It will increase the understanding of policy and regulatory issues regarding regional electricity interconnection relevant to CEM countries regions.
- Address concerns on the security and reliability of large-scale interconnection, as well as knowledge sharing and communication.
- Eventually, cross-border power systems can enhance the regional economic cooperation.

“ Significant reinforcement of long-distance transmission capacity within systems and enhanced interconnection between systems will be necessary to achieve the climate, security and affordability objective of delivering electricity in the 21st century. ”

Large Scale Electricity Interconnection: Technology and Prospects for Cross-regional Networks, IEA, 2016

Lead CEM Member(s)



CEM Member Participant(s)



Key actions

- Facilitating high-level policy and regulatory discussions among CEM Members on opportunities and challenges of regional electricity system integration.
- Providing technical support to help CEM Members identify policy recommendations, regional stakeholder dialogues, and suitable technology options for stronger neighbor jurisdictional alignment.
- Establishing a cooperation platform to share best practices and policy achievements as well as providing capacity building and peer-to-peer sharing.

Highlights and deliverables since CEM9

RGEI organisational development

- RGEI members engagement and outreach calls.
- Workplan development, member and partners consultation workshop, Oct 2019.
- Establish communications channels with other CEM worksreams in power system, such as 21st Century Power Partnership, Power System Flexibility Campaign.

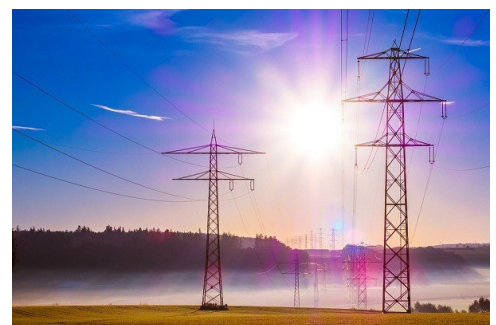
Partnership development

- RGEI joined China-Korea Power Grid Interconnection pre-feasibility research with SGCC and KEPCO.

Knowledge sharing and capacity building

- High-level seminar: RGEI held a workshop on energy interconnections and solutions to address climate change, co-organised with Environmental Defense Fund, at COP24 Katowice, Poland. This seminar addressed the value and prospects of regional electricity system interconnection.
- Case studies: RGEI developed case studies of regional power grid interconnection, focusing on issues of technical-economic, regulations coordination, and market design etc. The regions included in the case studies are European union, Central America, East Asia (Mongolia, Russia and Northern China), and Southeast Asia. Post CEM10, RGEI will continue developing case studies covering other regions, such as South America, and West Asia-North Africa.

- Policy brief: Based on the case studies, RGEI developed a policy brief for CEM10, which emphasis key policy and market design considerations on stakeholder coordination, transparent policy and planning, public-private partnership on developing ecosystem for power transmission project, international power trading mechanism, and business enabling environment.
- RGEI will organise a series of webinars, workshops, providing knowledge sharing platform for RGEI members, and open to wider CEM Members participation.



Operating Agent(s) /
Coordinator(s)



Global Energy Interconnection Development and Cooperation Organisation

Funding
Government(s)/
Organisation(s)

In-kind contributions from participants.

Global and
In-Country Technical
Partner(s)

State Grid Corporation of China (SGCC), China Southern Power Grid, Korea Electric Power Corporation (KEPCO), ESKOM of South Africa, Environmental Defense Fund.