ExpertSpeak

Need to institutionalize cross border electricity trade in South Asia

Vijay Kumar Kharbanda, Project Director and **Rajiv Ratna Panda,** Head-Technical, SARI/EI/IRADe, feel that the only long-term solution for balanced growth of energy sector in South Asia is the sustained increase in regional energy cooperation among these nations.

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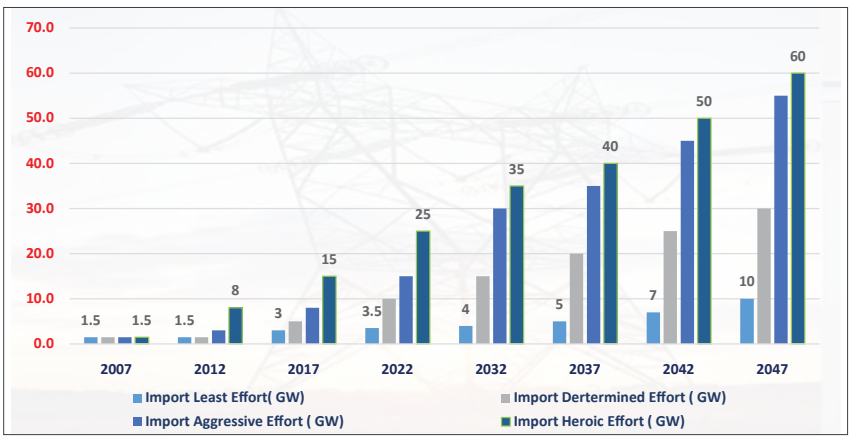
All the South Asian countries are currently facing power and energy shortages which are negatively impacting the economy. Adequate supply of energy is pre-requisite for all the development pursuits in South Asia ranging from economic progress to scientific research, education, healthcare, quality of life, and prosperity in the region. In recent past, South Asia has been one of the fastest growing regions in the world, with an average annual growth rate of 6% as measured by GDP per capita. Yet despite this impressive macroeconomic growth, the energy sector in the South Asian region has not been able to keep pace, and continues to experience chronic problems of shortage of supply and poor quality of service. Given this dilemma the only long-term solution is the sustained increase in regional energy cooperation among South Asian nations.

Present status

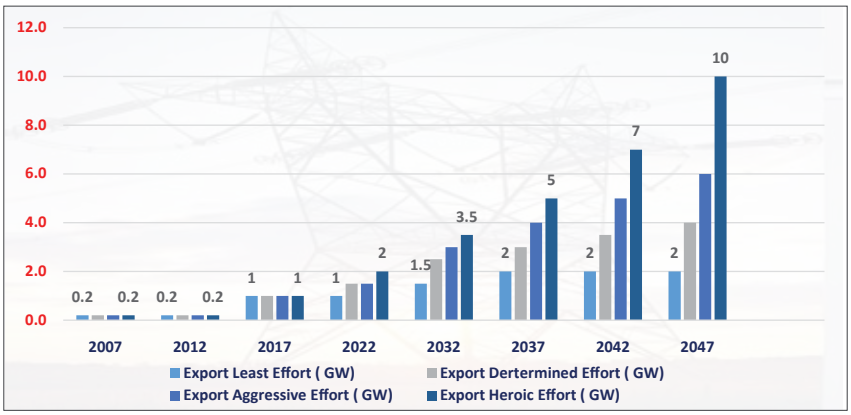
Cross Border Electricity Trade (CBET) in South Asia is currently being undertaken in the form of bilateral trade and is limited between India-Nepal (250 MW approx.); India-Bangladesh (600 MW); and India-Bhutan (1400 MW approx.). The CBET historically has been mainly through bilateral (Government to Government) arrangements based on case to case negotiations, though in the recent past market-based CBET began between India-Bhutan and India-Bangladesh. It is expected that going in future the CBET in south Asia will be more of market oriented. Region is endowed with vast potential of clean energy i.e. hydro power of 350 GW (of which only 14% has been developed) which can be developed successfully through CBET. CBET has the potential to improve energy security of the

Figure 1- Electricity Import by India from Neighbouring Countries



Source: The IESS, 2047, Niti Aayog

Figure 2- Electricity export by India to Neighbouring Countries



Source: The IESS, 2047, NitiAayog)

Figure 3- SAARC regional transmission capacity by 2033-34

Soure: MoP,GoI, Draft Perspective Transmission Plan for Twenty Years (2014-2034)

The historic Power Trade Agreement (PTA) signed between India-Nepal, opens up whole range of new possibility for trade electricity between Nepal-India, and also gives an access to Nepal Power Developers to Indian Power Market. India-Bangladesh and India-Bhutan are taking steps to enhance quantum of Cross Border Electricity Trade

region and provide adequate and affordable electricity in the region.

CBET is expected to increase significantly in coming future (Fig1&2). For facilitating such CBET, several new transmission interconnections are being planned/proposed across South Asian countries (fig-3) which will enable greater Integration of Power Systems of South Asian Countries (SACs). Such power system integration shall also enable trading on a multilateral basis wherein two countries having no common border could trade electricity through a third country acting as transit.

The political climate is becoming increasingly more and more conducive for CBET both at the bilateral and as well as at the multilateral level as eight member states of SAARC countries signed SAARC Framework Agreement of Energy (Electricity) Cooperation. Further, the historic Power Trade Agreement (PTA) signed between India-Nepal, opens up whole range of new possibility for trade electricity between Nepal-India, and also gives an access to Nepal Power Developers to Indian Power Market. India- Bangladesh and

Figure 4: Brief Summary of Regional Regulatory Guidelines

India-Bhutan are taking steps to enhance quantum of Cross Border Electricity Trade (CBET) in manifold. In coming future Bangladesh is planning to import 6000-7000 MW from regional grid to meet the power demand.

Policy/Regulatory Provisions and Institutional frameworks required for promoting/facilitating CBET exist in some South Asian Countries (SACs) but are not exhaustive in nature. Currently, South Asian countries are at different stage of power sector reforms and have different electricity regulatory environment. To enhance CBET within two or more countries in South Asia, there is a need to have common/coordinated set of regulations which facilitates/addresses the mechanism of cross border interconnection. There is a need to have common/coordinated set of regulations, policies, and legal framework which addresses the mechanism of interconnection, recognizes the CBET,

Figure 5: International best practices on Regional Regulatory Institutional Mechanism

open access to transmission network, licensing, imbalance settlement mechanism, coordinated procedures for integrated system operation, dispute resolution, etc. Moreover the existing electricity regulatory, policy and legal frameworks of SACs primarily address domestic power sector issues and are not necessarily developed to address issues related to CBET.

Without consistent and coherent regional regulatory framework in place, investment opportunities and consequently large scale CBET between nations that could benefit both importing and exporting nations may not happen. In the South Asian regional context, the risks associated with forging an intraregional, CBET project would be greatly minimized if each participating country adopts complementary regulatory frameworks to facilitate cross border interconnection and electricity trade.

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Suggestions for future

A transparent, stable regional regulatory framework for CBET supported through a regional regulatory institutional mechanism such as forum/agency/association of electricity regulators to take care of CBET regulations is critical for smooth and rapid expansion of trade of electricity among the south Asian countries and for creating a conductive environment for investment in CBET.

South Asia Forum of Electricity Regulators (SAFER) a neutral and transparent institution aims to coordinate with various stakeholders to promote Regional Regulatory Guidelines in the form of common regulations, rules and protocols in technical, operational and legal matters for promoting CBET in the South Asian Region.

Integrated Research and Action for Development (IRADe), a regional think tank and the implementing partner of USAID's current phase of South Asia Regional Initiative for Energy Integration (SARI/EI) has recently concluded a study on detailed review of coordination of policies/ regulations/legal framework prevailing in each SACs and published Regional Regulatory guidelines (RRGs). The objective of these RRGs (fig-4) is to provide national regulators/empowered entities of South Asian countries with a common course of action that can be referred to for decision making on CBET in their respective countries. RRGs ensure consistency in the CBET transactions and removes the constraints that are often plagued or delayed because of the unclear and complicated regimes. In summary, the guidelines and the framework are sufficiently flexible to work with different national legal, policy, and regulatory frameworks. The provisions allow accommodating different country circumstances, yet have a sufficiently broad application to promote consistent decision making and for any appropriate updating and modification.

For implementation of RRGs and for coordination/harmonization of electricity regulations for promoting CBET, needs a strong institutional sponsor and the study has recommended formation of forum of regulators i.e. "South Asian Forum of Electricity Regulators" (SAFER).This Forum of Regulators i.e. SAFER is proposed to manage the process of coordination of regulations with various regional bodies i.e. SAARC Energy Secretariat, Regulatory Commissions/authorities in each SACs and other relevant institutions in member countries in the area of facilitating cross border electricity trade.

International experiences (fig-5) also shows that various regional power systems in the globe have taken steps to form regional regulatory institutional structures/mechanisms to coordinate regulations for promoting CBET. In Europe, the Agency for the Cooperation of Energy Regulators (ACER) is an independent agency, which fosters cooperation among European energy regulators and ensures that market integration and the coordination of regulatory frameworks are achieved within the framework of the EU's energy policy objectives and issues non-binding opinions and recommendations to national energy regulators and transmission system operators for facilitating CBET. Similarly the Regional Electricity Regulators Association (RERA) of Southern African Development Community looks after regulatory coordination and ensure that the regulatory & contractual aspects done through common set of regulatory guidelines. As per the study conducted by SARI/EI, formation of a Forum of Electricity Regulators i.e. South Asia Forum of Electricity Regulators (SAFER) a neutral and transparent institution will aim to coordinate with various stakeholders to promote Regional Regulatory Guidelines in the form of common regulations, rules and protocols in technical, operational and legal matters for promoting CBET in the South Asian Region.

SAARC framework agreement for energy cooperation (electricity) Calls for Institutional Mechanisms for Coordination of Regulations for Promoting CBET in the South Asia Region.

The SAARC framework agreement for energy cooperation (electricity) also suggests "Article 15-Member States shall develop the structure, functions, and institutional mechanisms for regulatory issues related to electricity exchange and trade".

Recently, in the 2nd SAARC Energy Regulator meeting held at Colombo, Sri-Lanka on 08th– 9th February 2016, the members considered to form a Regional Energy Body/ Forum (Electricity). Therefore, formation of an institutional mechanism such as Forum/ Association/Agency of Electricity Regulators is critical for the success of CBET in South Asian region.

While there is a consensus on need of a Regional Regulatory Institutional Mechanism for coordination/harmonization of electricity regulations and for developing a regional regulatory framework for CBET in the South Asian region, the time has come institutionalize the process by formally establishing Regional Regulatory Institutions such as Forum of South Asia Energy (Electricity) regulators or any other appropriate institutions, identifying it's role, responsibilities, structure etc. which is also critical for brining much needed investment in CBET projects in the south Asian region.

The views in the article of the author are personal
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