

ELECTRICITY TRADING IN ITS INFANCY IN SOUTH ASIA

Power-starved South Asia can do much better if the countries improve cooperation on buying and selling electricity and move from bilateral agreements to a regional agreement. The obstacle is India



Acute energy poverty is one of the principal challenges in South Asia. Resource scarcity and a burgeoning population make electrification a particularly daunting task. Given the high variance in distribution of natural resources, regional trade of electricity is an obvious solution, as the International Energy Agency pointed out in its World Energy Outlook 2013.

One key step in this direction has been the creation of the South Asian Association for Regional Cooperation (SAARC) Energy Centre in Islamabad. This was established with the mandate of forming an “energy ring” – to pool and trade energy between countries in the region (8 countries).

Electricity cooperation between South Asian countries has been the topic of discussion on many platforms such as the South Asia Regional Initiative for Energy Integration (SARI/EI), Asian Development Bank funded projects such as cross border transmission line between Indian and Nepal.

However, despite the obvious interest, there has been little real progress in the development of such cooperation.

Bilateral cooperation brighter

There has been movement in the direction of bilateral trade of electricity, for both generation and transmission. Bilateral trades involving India have been primarily hydropower focussed, and

there is still large untapped hydropower potential in the Himalayan rivers, mainly in Bhutan and Nepal. Only 2% of the potential hydropower in Nepal and 6% in Bhutan have been tapped so far, according to the latest studies.

Given the large demand for electricity, particularly in Pakistan and Bangladesh, electricity trade is the clear answer, either through regional cooperation or bilaterally. However, even bilateral electricity trade between countries cannot be conceived without Indian involvement. As a result of its location, India is a key player in achieving any electricity cooperation in the region.

India Nepal cooperation

Currently, hydropower dominates electricity generation in Nepal, but it is only enough to cater to 40% of the population, according to a 2006 report sponsored by USAID. Despite the pressing need to boost capacity, the high capital costs and long development periods of hydropower projects make domestic investment difficult. Bilateral cooperation with Indian investment, although mutually beneficial, has been tumultuous in the past and faces an uncertain future. The history of power trade agreements is a testament to this.

The Nepalese parliament failed to ratify a Power Trade Agreement (PTA) with India proposed in 1996 and shelved the agreement again in 2010. Following Indian Prime Minister Narendra Modi's visit to Kathmandu, a PTA was finally signed in October last year. This agreement envisages connecting the national grids of the two countries and expands avenues for investment, both from private and public entities. While this signals progress on electricity trade, there remain issues that need to be addressed to realise the full potential of the PTA.

Popular sentiment in Nepal is to refrain from overreliance on India for power needs. Further, the Maoist party in Nepal has caused delays in hydropower projects in the past. In turn, this dissuades Indian private players from entering power generation projects in Nepal.

On the technical front, synchronising national grids poses a major hurdle and currently limits the capacity of cross-border trade, says a 2012 Asian Development Bank report. Lack of adequate physical infrastructure poses a significant hurdle to the construction of power grids.

What Bangladesh wishes

With negligible hydropower potential, Bangladesh relies heavily on natural gas for electricity generation. In 2012, over 85% of the electricity generated within the country was sourced from natural gas, according to the International Energy Agency. Close to 63% of the population lacks access to electricity.

As a result, Bangladesh is keen on importing electricity from hydropower-rich Nepal.

India Bangladesh trade

The present government headed by Sheikh Hasina has been more amenable in negotiating power trade agreements with India. In 2010, the two countries signed a memorandum of understanding to import 250 MW of electricity from India. The first transmission line between the two countries became operational in 2013. This is a 400kV, 500 MW line with the potential of being upgraded to 1,000 MW in the future. It is expected that Bangladesh will see an additional 250 MW to India at market rates in the future. Additionally, a joint venture for the 1,320 MW Rampal coal power plant was signed between NTPC and Bangladesh Power Development Board in 2012.

Although heavily tilted in favour of India, the power trade relationship between India and Bangladesh is not entirely one-sided. In the past, Bangladesh has successfully leveraged its gas reserves by conditioning gas trade with India on allowing transmission of hydroelectricity from Nepal, according to K.R. Dhungel writing in the South Asia Economic Journal.

In April 2014, Bangladesh agreed to let India construct a 6,000 MW transmission line through western Bangladesh to provide electricity to Assam from Bihar. Since natural gas makes up a large proportion of India's fuel consumption, natural gas is a powerful bargaining chip for Bangladesh in any power-related negotiation with India. However, to do so Bangladesh will need to expand its natural gas production capacity.

India Bhutan cooperation

Bhutan is the only country in South Asia where electricity is the main export commodity. India is the sole importer. In Bhutan, all electricity is generated from hydro projects, and it is estimated that current capacity accounts for only 6% of the total potential.

Only 40% of the households in Bhutan have access to electricity. This is due to the high expense of providing electricity in mountain areas.

Further, the hydropower potential of Bhutan is seasonal – it imports electricity from India during the lean winter months.

Bhutan relies heavily on India for investment in hydropower development. As a result, Bhutan-India energy trade is regarded as very positive.

However, there have been growing environmental and economic concerns as the number of the hydropower projects has increased over the years.

A high sediment load has adversely affected the efficiency of electricity generation from existing plants. Additionally, quality-associated problems have also been surfacing from the Indian projects. There have been high voltage cable failure and cracks in the Tala project. Bhutanese

have expressed concern over Indian domination of the domestic market. Most of the project construction also brings immigrant labourers.

As a result, Bhutan has expressed interest in diversifying its market and exporting electricity to Bangladesh. However, this will not happen without India's agreement, since the Indian landmass comes in between Bhutan and Bangladesh.

The Chukha hydropower project is considered the first milestone in power cooperation between Bhutan and India. Commissioned in 1989, this was Bhutan's first mega power project. As of September 2013, the plant had generated 47,040 GWh, of which over 87% was exported to India.

Although most of the money needed to build the project came from India as a grant, India was able to recoup its investment within nine years due to the favourable export tariffs agreed between the two governments.

Kurichu and Tala are two other hydropower projects that have been completed in collaboration with India.

Issues around sharing of transmission network and disparate tariff structures have surfaced as private Indian entities have filed petitions with the CERC to resell electricity in the Indian market. In 2006, two countries agreed to develop 10,000 MW of energy by 2020. Under this agreement, ten projects are envisioned which will be developed as either inter-governmental or joint venture projects.

Previous Indo-Bhutanese hydro projects were all intergovernmental and financed mostly through grants from the Indian government. In the past, delays in disbursement of finances from the Indian government caused strains on the liquidity of the Bhutanese government. Additionally, with a slew of upcoming projects under the 2006 agreement, the Indian government too also faces some financial constraints.

As a result, the upcoming projects differ from the previous hydropower projects in two respects – first, the grant to loan ratio now comprises of a much larger loan component; second, joint ventures are being considered as an alternate route to the intergovernmental model.

Although, most of the hydropower development in Bhutan so far has taken place with the support of the Indian government, recently, Prime Minister Tshering Tobgay expressed interest in inviting other foreign direct investment (FDI) into the country for hydropower development. However, Bhutan's Consul General in India Dasho Tsering said other FDI in the near future seems unlikely due to the pre-existing commitment to India under the 2006 agreement. It is only after the fulfilment of this commitment, will Bhutan be able to seek other avenues for FDI.

Who favours what

A 2010 study showed that Indian diplomats were in favour of bilateral power deals, while Nepal and Bangladesh preferred the regional approach. Since Bangladesh and Nepal are separated by Indian soil, they cannot take a regional approach without a nod from India. The perception in these countries is that India is exploiting this situation in order to negotiate separate bilateral deals in its favour.

Be that as it may, for any regional energy trade to be successful, development of a uniform energy pricing policy is essential. Right now, all the countries have their own pricing policies. India subsidises electricity heavily, while Nepal has the highest tariff in the region. As a result, trading of energy on purely commercial terms is unviable. Regional trade of electricity requires ironing out many issues both technical and political, with India's role in a leadership position being crucial to any such cooperation.

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