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Turning the lights on across South Asia

Why cooperation across the Indian subcontinent to ensure energy security is an idea whose time has come

Despite its huge hydro power potential, the South Asian region is the least interconnected in the world. And it can be tapped only through cooperation

The South Asia Region (SAR), one of the poorest in the world, has long faced an energy crunch. Nearly 675 million people are without access to electricity. Without electricity, they are not likely to be on the development bus in the near future. The per-person annual electricity consumption of SAR is 563 units; the world average is 3,000, and it is 12,000 in the US.

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The road to greater electricity exchange among the countries of South Asia should start with an effort to muster the requisite political will, and this is now gathering momentum.

The region has meagre fossil energy resources, mainly coal in India and some oil and gas in Bangladesh, India and Pakistan; but the resources may at best extend to a few decades in future. Most SAR countries resort to importing oil for nearly 80 per cent of their oil requirements. Thus, the region needs to seriously search for energy alternatives. Luckily, we have vast renewable energy resources, especially solar energy and hydro power. This Himalayan hydro potential of 350,000 Mw (1,000 Mw = 1Gw) is perhaps the largest untapped potential in the world. To give an idea, this is close to the total power capacity installed in the region over six decades. Despite the huge potential, the SAR is also the least interconnected in the world. And it can be tapped well only through co-operation. This potential in Gw terms is distributed as follows: Bhutan 30, India 150, Nepal 83, Pakistan 60 and so on. In addition, solar and wind potentials can also be developed on a smaller scale.

How is it possible to share energy resources when every country suffers from shortages? First of all, electricity cannot be stored easily. Moreover, power plants are so capital-intensive, they need a high utilisation factor. The region has diversity in demand, due to different time zones spread over two hours, and different holidays — Fridays in Pakistan, Bangladesh and Afghanistan, Sundays in the rest. Moreover, seasonal differences also play a big role, as summer and winter temperatures vary a lot, giving scope to share electricity both ways over the year.

However, there are a number of barriers to electricity exchange in South Asia. First, we need political will — which is now gathering momentum from all countries. Secondly, institutional and operational structure is needed, which can come about once the scale of electricity exchange goes up and goodwill and confidence are built up. The third issue is environmental considerations while building hydro power, where more sustainable construction practices are needed. However, the trade-off is that hydro power is a clean and low- carbon source of electricity. The fourth issue is pricing. All the countries in the region are subsidising electricity, partly because the consumers are poor. On the other hand, the power sector is highly capital-intensive and needs to be investorfriendly. The fifth issue is availability of finance for project developers. The investments can come around if security can be assured and investors can see there is a power market and each situation is not hostage to political haggling.

However, despite the above barriers, integration among South Asian countries is not such an unthinkable proposition. Such integrations have even linked many developing countries; for example, South East Asian countries within the Greater Mekong Basin began to integrate as far back as in 1995. Southern African Power Pool's (SAPP's) operations also date back to 1995. The countries of Central America, the Nile Basin, the Gulf region and others have made considerable progress even when their potential was less than in South Asia. Thus, grid integration and trade has taken place for a lot less gain than what South Asia offers.

Even within India, over the last 30 years, many Indian states which operated in silos through State Electricity Boards have overcome many barriers. First, they were grouped in five regional grids which now function almost like a national grid. This shows that it is possible to accomplish this even within South Asia. We have a sophisticated power exchange where we have prices for every 15-minute block. Such exchanges provide a transparent pricing mechanism depending on demand and supply that gives faith to investors, allowing them to make decisions based on real data. It also shows that the power sector need not be burdened with political demands but can function within welldefined rules, processes and frameworks.

Some preparation for the trade of power is already in place, suggesting high levels will be reached in the next few years: India-Bhutan 1,500 Mw, India-Nepal up to 200 Mw and India-Bangladesh 500 Mw. Pakistan has requested 200 Mw. Sri Lanka expects to build a sea link soon. Every country can benefit, either in terms of power or income. Bhutan is leading the pack already with plans to sell 10,000 Mw by 2020. Their income per person is already twice that of India, thanks to this electricity sale; a few decades back their income was half of India's. Nepal, with a potential as large as India, has not begun trading or even generating or tapping hydro power much yet and has the lowest per capita electricity consumption. Initially, India may have to export to some countries and even to Nepal; but it can be a large importer as well, if CBET takes off. Integrated Research and Action for Development (IRADe) is carrying out the programme for the South Asia Regional Initiative for Energy Integration (SARI/EI), where all the SAR countries are participating. The Asian Development Bank (ADB) and recently the World Bank are also facilitating this effort. Thus, several efforts are underway to prepare the ground for further progress. The most important need is to remove mental and political barriers and strive to establish power markets to think afresh to seize the opportunity.

Interconnecting grids in South Asia is an idea whose time has come and no one can stop an idea whose time has come. It may happen gradually, in baby steps; a few transmission lines here and a few there to begin with. But we have no time to waste and hopefully bolder and rapid steps or even giant strides towards a blueprint of a great new architecture will emerge soon. The writer is Executive Director at Integrated Research and Action for Development (IRADe). She is also a member of the Prime Minister's Council on Climate Change