Bangladesh-India Integrated Transmission Grid To Facilitate Smooth Operation Of RNPP

Engr. Arun Saha

It is comparatively easier to implement plans for power plants on schedule than transmission lines. But getting trouble-free land for substations and right of way (ROW) for power transmission lines have many challenges. Many transmission projects get delayed for not getting ROW on time. These issues are being intensified now.

Compared with what it was 10 years ago, the transmission grid of Bangladesh is much more reliable now. Our power system is not very large. Around 15,000 MW systems can be termed small. Works are advancing to turn it into an N-2 redundant system to accommodate evacuation of power from Rooppur Nuclear Power Plant (RNPP). Reliability of the power system can be improved to a great extent if Bangladesh power grid can be integrated synchronously with the Indian grid. That will ensure safe and secure evacuation of the entire 2,400 MW power from the nuclear power plant consistently on an uninterruptible basis. These will also solve the issue of importing solar power from India and hydroelectricity from Nepal and Bhutan. We should start the process for synchronizing the two grids accepting the proposal of the Power Grid of India.

Engr. Arun Saha, former Managing Director of EGCB, and former senior executive of PGCB, said this in an exclusive discussion with EP Editor ***Mollah Amzad Hossain.***

What is your opinion about the reliability of the present power transmission grid and distribution network of Bangladesh? What actions do you think need to be taken before RNPP gets ready for commercial operation?

Please note that the transmission system now is far more reliable than what it was in the past. It is a continuous on-going process. It must be made time tested with the growth in demand. PGCB despite making plans cannot always implement on time for different impediments. It is often possible to complete works of a power plant on time but for various complexities the works of power transmission line cannot be built on time for non-availability of land - I mean Right of Way.

Study has been carried out about the needs of evacuating power from RNPP. It was told to bring down frequency variation to +/- 0.2 Hz. It could not be achieved yet. On the other hand, projects were taken up for constructing several 230 KV and 400 KV transmission lines from the RNPP. Only one of these has been constructed and others are at different stages of completion. Commercial operation of RNPP may only start when all these are completed.

Countrywide 400 KV transmission system is being constructed. By 2025 it may be developed. Do you think it is time to go to the 765 KV transmission system?

It will depend on the planning of the entire power system. 400 KV transmission lines are now required as some large power generation units are away from major load centers. If large plants can be constructed near major growth centers, higher capacity transmission lines will not be essential. When Bangladesh will need 765 KV power transmission lines will depend on the nature of demand, location of growth centers and power plants.

Talks about the BBIN transmission grid have been going on for a while now. Is it proceeding in the right direction? There are few thoughts it will not bring tangible benefits till regional power trading gets momentum. Bangladesh is merely importing electricity. We have no scope to export as our cost of generation is relatively higher than other countries in the region. What are your observations?

Enabling infrastructure needs developing before commencing free power trading. Setting up the BBIN

grid is essential for importing solar power from India and hydropower from Nepal and Bhutan. Using HVDC connectivity we are now importing 1,000 MW of electricity from India. There is no scope for importing additional power using this connectivity. Investment in HVDC is also huge. Regional grid linking the power grid of the four neighboring countries into an integrated synchronous grid can ensure power trading at reasonable cost. Not really on political consideration, integrated BBIN power grid must be constructed for its technical and commercial benefits.

Technical discussions were going on for a long time about a 765 KV power transmission line from Barnagar, Assam to Katihar, Bihar in India via Barapukuria Bangladesh. But it did not come into reality. It was told that the Assam section would be linked with Bhutan and Bihar section with Nepal. Some people think that it would benefit India and not Bangladesh. What are your views?

Let us start from the end. I cannot agree with those who think Bangladesh does not need this. Because If this happens to be in place virtually it would lay the foundation of the BBIN grid. The 765 KV transmission line could have transported hydro electricity from Nepal and Bhutan as well as solar power from India to Bangladesh. The power can be evacuated to the 400 KV Bangladesh grid through a 765/400 kV substation. Each country can invest to that extent of what it uses. There would be any problem in cost recovery even if third parties invest in it. Bangladesh power grid would also remain safe when this line traverses across Bangladesh territory. It is also essential for the uninterrupted power evacuation from RNPP.

I was involved in the technical discussions of the proposed Assam to Bihar transmission line. It is a good project for its technical utility. It is not clear to me why required initiatives could not be taken to implement it.

Recently Power Grid Corporation of India Limited (PGCIL) has given a proposal for integrated grid connectivity of the two countries. According to the proposal, PGCIL will be linked with the Bangladesh power grid at several points. What do you think about it?

I am not very aware of it. We should negotiate with a positive frame of mind if the proposal is for synchronizing the Indian power grid with that of Bangladesh. This will reduce the size of investment required for setting up infrastructure for power trading among the countries in the region. Our 15,000 MW capacity power system will become far more stabilized when it will be integrated with 200,000 MW capacity Indian power system. Bangladesh needs this urgently.

Draft of a policy has been prepared for opening the power transmission segment to the private sector. Do you think the power transmission segment needs private sector participation now?

I have no idea about the content of the draft. There are many issues in recovering costs of investment in power transmission by the Private sector. PGCB realizes wheeling charges from power distribution utilities for the power it transfers to them at designated points. How the tariff for the private company would be determined when it invests in a transmission line connecting one point of the grid to the other? Rather PGCB through open bidding should engage companies for constructing transmission lines where it cannot invest. PGCB should set tariffs for these investments.

There is a popular belief that Bangladesh should limit its power import reliance from single source maximum to 10% of its demand. 2,600 MW is now being imported. There is a plan to increase it to 9,000 MW by 2041. What should be done in the context of sustainable energy security?

Please note that Bangladesh now imports power through three points. These are 1000 MW from HVDC, 160 MW through grid integration at Cumilla. A transmission line has been built to import 1600 MW power from Adani Power.

On the other hand, a higher volume of imports creating issues of energy security is purely a political thought. Rather gradual increase of import taking into active consideration of technical and commercial aspects has no problem. If an unhealthy situation develops between neighbors, not only power trading, lots of other trading may be disrupted. Western Europe relied on pipeline gas supply from Russia. Western embargo on Russia following the Russia-Ukraine war led to suspension of gas supply to Europe. But cross border energy trading has not ceased.

Is there any possibility for real time power trading among four countries following the setting up of the BBIN power grid? If so, how should this be done?

Please note that enabling infrastructure needs setting up first. Then gradually power exchange and other relevant initiatives would follow.

What according to you are the major impediments for the phase wise systematic development of Bangladesh Power Transmission Infrastructure?

Please note that it is comparatively easier to implement plans for power plants on schedule than transmission lines. There are little issues in constructing distribution networks as people understand they would be benefitted from these. But getting trouble-free land for substations and right of way (ROW) for power transmission lines have many challenges. Many transmission projects get delayed for not getting ROW on time. These issues are being intensified now. The Power Division must take more integrated initiatives for dealing with such challenges. EP