

## Quo vadis, Arunachal dams?

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**A**fter the Arunachal Pradesh Government notified the Hydropower Policy, 2005, it gave the State the authority to allot hydropower projects to private companies. Since then, there was an avalanche of signing MoUs/MoAs with private companies until about 2011. About 150 MoUs/MoAs were signed to generate over 55,000 MW of power during the peak load period as peaking hydroelectric projects (HEPs). The only criterion for selection of the private companies was their willingness to pay the upfront money as stipulated in the Hydropower Policy, 2005 based on the capacity of the project in megawatt (MW), and many private companies with no experience of dam construction also signed the MoUs.

Though around 150 MoUs were signed during the period 2005-2011, no work on ground has started till date and as per a news item of *The Arunachal Times* of June 25, 2021, the anti-dam movement organizations of Arunachal have sought for immediate cancellation of all the 142 MoUs and MoAs signed by the State Government with private companies "as none of the private companies has completed/commissioned any hydro project, as on date there is a complete breach of the agreements". They demanded that the State Government explore the possibilities for starting joint ventures with Central PSUs (meaning NEEPCO, NHPC, etc.).

The main issue which worries

the private companies now is the high cost of power generation from these dams when commissioned after a decade-and-a-half at the earliest. The CEO of 3097 MW Etalin Hydroelectric Project in Dibang valley have reportedly said that "the project does not look like an attractive investment in current situation". And this sums up the situation for all the projects.

In a written reply to a question in the Lok Sabha RK Singh, Union Minister of State, New and Renewable Energy, etc., stated that the Government is all set for achieving the target of 1,00,000 MW grid connected solar power capacity in the country by 2022. The solar power can now easily take care of some peak load demands in the national grid.

Arunachal's contribution to take care of the peak load demands by about 50,000-55,000 MW can fructify only after 12-15 years when these dams can be commissioned, assuming expeditious construction of the dams. The energy scenario of the country and the cost of power generation then, i.e., after 12-15 years, is anybody's guess. The cost of solar power generation is Rs 3.9 per kWh or so now, and it will come down further with improved technologies. The country now has a robust new and renewable energy policy and goals.

In this context, it is clear that the peaking HEPs of Arunachal Pradesh have no relevance now and need to be changed to true run-of-the-river (RoR) projects.

The proposed dams in Arunachal are peaking hydropower projects – they are the most destructive type of hydropower activity. All hydroelectric projects (except the 10,000 MW Siang Upper project as envisaged by the NITI Aayog in the upper reaches

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of the Siang river) are peaking hydroelectric projects. In most of this type of projects, the flow of the river is held up for about 20 hours or so to a trickle – 15 to 20% as environmental flow is released and power is generated by releasing the held up water in four hours of peak load demand period of 6 pm to 10 pm. This extreme

daily variation of flow in the downstream of the dam in winter lean months devastates the ecology and environment of the river completely. Such dams also create sudden devastating floods, when sluice gates are opened up suddenly during flood conditions. The peaking HEPs are basically power generation projects and has no effective flood control component built into it. Peaking HEPs in the rest of the Himalayan region are

in the final phases of completion now and are justified because the process started long before the new and renewable energy growth which has taken place in the last five-six years.

The peaking HEPs will devastate the pristine valleys and biodiversity hotspots of Arunachal Pradesh. When converted to true run-of-the-river projects, the river will flow naturally through turbines and/or over the dam to generate adequate 24x7 base-load electricity which is the backbone of the electrical power of the country. The peak load HEPs generate electricity at the cost of the river, ecology and people and is an aberration in the name of the power generation. The true RoR projects will protect communities and forest lands, as such, the projects will create only small pondages upstream of the dam. Trees and forests will be saved.

True RoR projects will develop smaller dams, preferably less than 100 metres in height, which will be appropriate in a most seismic area like Arunachal Pradesh with fragile rock formation as the foundation base. At any rate, even if there is a dam break due to severe earthquakes, it will not have any significant impact downstream of the dam because very little water is stored as pondage upstream of the dam.

Needless to say, the cumulative impact of the three peaking HEPs – Siang Lower, Lohit Lower (Demwe) and Dibang Lower (DMD) – will devastate the ecology and environment of the Brahmaputra when these three dams are commissioned.

In this context, Assam has a right to take up these issues with the Government of India unless the three dams are changed from peaking to true RoR projects.

Any dam in the river Siang is dependent on the flow it receives from Tibet (China). The Yarlung Tsangpo flows 1625 km through Tibet (China) and as a riparian country, China has a right to its share of Yarlung Tsangpo's water. But, beyond the sharing of flood information, there is no treaty between India and China like we have with Bangladesh and Pakistan for sharing of water of the Ganga and the Indus. The concept of first user right has no effective mechanism for actual enforcement. To plan dams in the Siang river without any arrangement of water sharing with China regarding Yarlung Tsangpo seems like closing one's eyes to the reality.