

INTERVIEW: AB AGRAWAL

CHAIRMAN, BHAKRA BEAS MANAGEMENT BOARD

'Our power generation cost is the lowest'

Bhakra-Nangal is India's first multipurpose hydropower project in which Himachal Pradesh, Punjab, Haryana and Rajasthan hold stakes. The project comprises the Bhakra dam, Bhakra left bank and Bhakra right bank power houses, Nangal dam, Nangal hydel channel, Ganguwal and Kotla power house and associated transmission system. The initial capacity of the project was 1,205 mw, which has been expanded to 2,865 mw. The project is operated by Bhakra Beas Management Board (BBMB). Its chairman AB Agrawal has more than 30 years of experience in the hydropower sector. While talking to FE's Noor Mohammad, BBMB chairman discusses the key challenges involved in developing and running a multipurpose hydropower project like Bhakra-Nangal. Excerpts:

What are the key challenges in developing and running a multi-purpose hydroelectric project like Bhakra-Nangal?

The development of huge multipurpose hydroelectric power projects like Bhakra Nangal present many daunting challenges. The key challenge is to tame and divert a mighty river like the Satluj. Also, rehabilitation of people displaced by submergence and creation of an air of acceptance and inclusion among the local populace pose serious challenges. The enormity of the task can be gauged from the size of water reservoir created by such multipurpose projects. For example, the Gobind Sagar reservoir behind the Bhakra dam is spread over 168.35 sq km. Apart from these difficulties, mobilising men and machinery at remote and inaccessible locations where such projects are generally located is also problematic. However, such challenges also provide the opportunity to develop the project area and raise the standard of living of local populace. Running such multipurpose projects requires delicate coordination between the power generation needs and irrigation requirements. Accumulation of silt in the reservoir also needs to be monitored regularly. Desilting the reservoir and disposal of silt, too, have to be taken care of meticulously in the face of mounting environmental concerns.

What are the benefits of multipurpose hydropower projects over normal hydro plants with only generation facilities?

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Multipurpose hydropower projects like ours score over dedicated generation projects on several fronts. Besides generating low-cost green energy, such projects result in holistic water management, including water storage and its controlled release for irrigation and drinking

gation, drinking, etc. Also, such projects create massive water reservoirs which mitigate the fury of flood. Multipurpose projects lead to integrated development of the project area, including development of infrastructure and recreational facilities like camping and boating, unleashing the tourism potential of project area, development of fisheries, community development works, etc.

A big chunk of India's cultivable land does not have access to irrigation facilities. India also faces growing peaking power shortage. How can multipurpose hydropower projects help in addressing the twin challenges?

Hydropower projects are an excellent tool for providing peaking power. In fact, BBMB power houses have been instrumental in providing peaking power support to the northern grid. As multipurpose projects can effectively manage the water resources to ensure their optimum use for irrigation and energy generation, they can adequately address these twin challenges. However, it must be appreciated that such projects require enormous financial inputs, besides detailed environment impact assessment and

hydroprojects are an answer to this?

It is thanks to multipurpose projects that northern India is dotted with an extensive network of canals. In fact, such projects are instrumental in controlled and channelised releases of water through downstream canals that can meet the drinking water requirement of Indian cities.

You are implementing a hydrology project with the World Bank's help. How will BBMB benefit from it?

This project envisages installation of many hydro-meteorological sites in the catchment areas of rivers Satluj and Beas that will provide real time data about rainfall, snow-melting and water inflow to the centralised real-time decision support centre. Such online compilation of comprehensive data will help in realistic prediction of inflows to BBMB reservoirs and facilitate optimum reservoir operation.

What was the impact of poor monsoon on BBMB's performance in 2009-10?

Our power generation and water supply both declined in the fiscal 2009-10 because of the drought-like condition that prevailed during the year. For example, our electricity generation was 9,494 million units compared with 11,171 million units in the preceding year.

How much capacity have you added through programmes like renovation and modernisation?

BBMB has already added 310 mw through renovation, modernisation and upgradation (RM&U) of its power houses. Presently, the RM&U work of Bhakra left bank powerhouse is going on. It is envisaged to increase the capacity of the powerhouse from 540 mw to 630 mw, which will lead to the generation of an additional 350 million units a year. The contract for the work was awarded to a consortium led by Japan's Sumitomo Corporation in November 2007. RM&U of the unit-1 and 2 has started and procurement of equipment completed. The work is expected to be completed by 2012-end.

What are the key strengths of BBMB?

BBMB operates six hydropower projects with 2,865 mw of installed capacity. It is the lowest-cost electricity generator in the country. Our cost of generation works out to 24 paise a unit. It also manages an associated transmission system on its own. Besides, BBMB is also supplying drinking and irrigation water to Punjab, Haryana and Rajasthan.

elaborate rehabilitation measures due to submergence, which must be acceptable to the local populace and must contribute to raise their standard of living.

What is the cost economics of multipurpose hydropower projects vis-a-vis normal hydropower plants?

Comparative cost economics of multipurpose hydropower projects vis-à-vis dedicated hydropower plants cannot be generalised. *Prima facie*, it appears that multipurpose projects should be significantly more expensive to construct due to submergence of huge areas and concomitant resettlement and rehabilitation issues. However, many a time, even run-of-the-river hydropower houses are very expensive due to the elaborate water conductor system crisscrossing a number of tunnels, open channels, etc. However, it is underlined that from a long-term perspective, the beneficial spin-offs of multipurpose hydropower projects vastly outnumber those from dedicated generation plants, provided siltation issues are adequately taken care of.

Major Indian cities face a shortage of drinking water. Do you think multi-purpose