TATO-II HYDRO ELECTRIC PROJECT: GEOGRAPHY

NEWS: Cabinet approves Investment Proposal for construction of 700 MW Tato-II Hydro Electric Project in Shi Yomi District of Arunachal Pradesh with an outlay of Rs.8146.21 crore and completion period of 72 months

The Union Cabinet has approved the 700 MW Tato-II Hydro Electric Project in Arunachal Pradesh to boost the national grid and drive regional development. The project, a joint venture between NEEPCO and the state government, will provide 12% free power to Arunachal Pradesh and is slated for completion in six years.

Cabinet Approval

The Union Cabinet has given its approval for the construction of the 700 MW Tato-II Hydro Electric Project in Arunachal Pradesh. This project is a significant step towards harnessing India's hydropower potential and promoting development in the north-eastern region.

Key Project Details

1. **Generation Capacity** - The project is designed to have an installed capacity of 700 MW, generated through four distinct units of 175 MW each.
2. **Energy Output** - It is projected to generate approximately 2,738 million units of electricity annually, contributing significantly to the national grid.
3. **Implementing Body** - The project will be executed as a joint venture between the North Eastern Electric Power Corporation Ltd. (NEEPCO), a central public sector undertaking, and the Government of Arunachal Pradesh.
4. **Financial Outlay** - The government has sanctioned budgetary support to cover essential infrastructure costs, including Construction of roads and bridges, Development of transmission lines for power evacuation, Funding for local area development initiatives.
5. **Project Timeline** - The project is slated for completion within a 6-year timeframe from the commencement of construction.

Benefits and Regional Impact

This project is expected to deliver multi-faceted benefits to the state and the nation.

1. **Power Security** - It will substantially strengthen the power supply within Arunachal Pradesh and enhance the stability and reliability of the national power grid.
2. **Benefits for Arunachal Pradesh** - The state is set to receive significant direct benefits:
    1. 12% Free Power: A share of the generated electricity will be provided to the state free of cost.
    2. Local Area Development Fund (LADF): 1% of the power generated will be allocated to the LADF to fund local development projects.
3. **Infrastructure Boost -** The project will catalyze major infrastructure development in a remote region, including the construction of 33 km of roads and bridges. It will also support local facilities like hospitals, schools, and markets.
4. **Socio-Economic Growth** - The project is anticipated to foster significant economic activity and social development through:
    1. **Job Creation** - Direct and indirect employment opportunities for the local population.
    2. **Support for Local Businesses** - Increased demand for local suppliers and growth for Micro, Small, and Medium Enterprises (MSMEs).
    3. **Corporate Social Responsibility (CSR) -** Implementation of various community-focused initiatives.

Recent Hydroelectric Projects (Since 2023)

India is actively pursuing hydropower to meet its clean energy targets. Key recent projects include:

1. Subansiri Lower Project (Arunachal Pradesh): At 2,000 MW, this under-construction project will be India's largest hydropower plant upon completion. It is crucial for grid stability and flood management in the Brahmaputra basin.
2. Dibang Multipurpose Project (Arunachal Pradesh): A massive 2,880 MW project focused on power generation, irrigation, and flood control for the Northeast.
3. Teesta Stage IV Project (Sikkim): A 520 MW project that has been recently commissioned in phases, enhancing power availability in the region.
4. Nathpa Jhakri Extension (Himachal Pradesh): An 800 MW extension project to augment the capacity of the existing plant in the Sutlej basin.
5. Bhakra Beas Management Board (BBMB) Projects: Ongoing modernization and capacity enhancement projects in Himachal Pradesh and Punjab to optimize water and power generation.

Major Hydroelectric Projects in India

1. Bhakra Nangal Project (Himachal Pradesh/Punjab): One of India's pioneering multipurpose projects with a capacity of 1,325 MW.
2. Tehri Dam (Uttarakhand): Among the tallest dams in India, with a capacity of 1,000 MW.
3. Sardar Sarovar Project (Gujarat/Madhya Pradesh): A key project on the Narmada River with a 1,450 MW capacity, vital for power and irrigation.
4. Koyna Project (Maharashtra): A critical power source for the state with a capacity of over 1,960 MW.
5. Nathpa Jhakri Project (Himachal Pradesh): India's largest underground hydroelectric project (1,500 MW) on the Satluj river.

Importance & Challenges of Hydropower in India

Importance

Contribution to Energy Mix - Hydropower constitutes about 12-15% of India's total installed power capacity.

Clean Energy - It is a renewable and clean source of energy, crucial for reducing carbon emissions.

Grid Stability - Hydropower plants can be started and stopped quickly, making them ideal for meeting peak power demands and balancing the grid.

Multipurpose Benefits - These projects often provide critical benefits like flood control, irrigation, and drinking water supply.

Regional Development - They promote economic growth, employment, and infrastructure development in remote and hilly areas.

Challenges

Environmental & Social Impact - Concerns related to deforestation, loss of biodiversity, and displacement of local communities are significant hurdles.

Execution Delays - The challenging terrain and harsh weather conditions in hilly regions often lead to project delays and cost overruns.

Modernization Needs - Many older plants require modernization to improve efficiency and safety.

Reservoir Management - Effective management of reservoirs, including siltation control, is essential for the long-term viability of these projects.

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