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Nepal's Hydropower Future After the Rasuwa Flood

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The promise of hydropower is simple to describe: Nepal has steep rivers, abundant elevation changes and a growing market for electricity at home and across its borders. Dams, tunnels, turbines and transmission lines can turn flowing water into revenue and services that support households and industry.

The reality is more complicated. Rivers are not fixed industrial inputs. They rise, fall, carry sediment and change course. In a fragile mountain landscape, an electricity project is also a road, a slope, a community, a network of bridges and a long-term exposure to natural hazards.

In August 2026, that tension became impossible to overlook.

A year of expansion, then disruption

According to the World Bank's October 6 Nepal Development Update, electricity generation grew by 21 percent in FY2025/26, contributing to faster industrial growth. That progress underscores the economic significance of new generating capacity.

But the same report details the devastating August 26, 2026, flood in the Rasuwagadhi border region and its propagation through the Bhote Koshi and Trishuli river systems. The World Bank says the disaster affected 12 hydropower projects: seven operating projects with a combined 256.1 MW of capacity and five projects under construction with a combined 395.02 MW. Damage to power transmission systems also disrupted additional generation.

The bank estimates that approximately 430.7 MW of existing generation and transmission-linked capacity was affected, around 10.6 percent of Nepal's FY26 installed hydropower and solar capacity. These are preliminary assessment figures and should be understood within the report's stated methodology.

The event is not evidence that hydropower should be abandoned. It is evidence that hydropower plans cannot be evaluated separately from the mountain systems in which they are built.

Exporting electricity changes the equation

Nepal's electricity trade with India has become a major part of the sector's development. The Nepal Electricity Authority's FY2024/25 annual review reports exports of 2,380 GWh to India against imports of 1,681 GWh that fiscal year. The same report records the start of 40 MW of electricity exports to Bangladesh through India's network during the monsoon season in 2025.

Those figures are worth describing carefully. Exported electricity measured in gigawatt-hours is an energy total over time.

Megawatts measure power or capacity. Neither should be mixed with an approval granted to a specific generator or an assertion about electricity actually delivered.

The significance is strategic: electricity can become a tradable export rather than only a domestic utility. But the trade relies on contracts, seasonal generation, transmission access and regional cooperation. The ability to produce electricity at a particular river is not identical to the ability to sell it profitably across a national border.

The seasonal question

Many hydropower projects depend heavily on river flows. The monsoon can bring substantial generation, while drier months can create a different supply picture. As a result, a country can export electricity in one part of the year and import it in another without

the two observations being contradictory.

Storage projects, better grid management, domestic demand growth and regional electricity trading can change that balance over time. All have costs and implementation challenges.

Export policy should also be evaluated beside domestic access. A successful trading strategy is not merely one that sells the greatest possible amount abroad. It should help deliver reliable, affordable electricity for homes, public services and Nepali firms.

Electricity can support industrial development only if the rest of the investment environment—roads, finance, skills, market access and predictable regulations—allows companies to use it.

The river is also a neighbourhood

Hydropower discussions often centre on megawatts and foreign-exchange earnings. Local communities experience a different set of consequences: changed river flows, construction traffic, land acquisition, altered access routes, employment opportunities and concern about safety.

The distribution of gains matters. National revenue and developer income are important, but so are compensation, consultation, transparent environmental assessment and credible mechanisms for complaints. Construction can generate short-term work; the longer-term employment benefits may be smaller and more

specialised.

The strongest argument for development is not that every project is automatically beneficial. It is that projects are selected, designed and governed so that their benefits justify their environmental, financial and social costs.

What the 2026 flood changed

The World Bank's October 6 statement projects that the flood's impact on energy, transport, trade and tourism will contribute to slower economic growth in FY2026/27. Its detailed update identifies severe damage to assets, transport corridors and electricity infrastructure across affected districts.

The economic consequences go beyond damaged turbines. An inaccessible road can prevent repair crews from reaching a power station. Destroyed bridges affect both emergency services and local businesses. Transmission failures can disconnect generation even where the turbines themselves remain intact.

Future investment therefore requires attention to interconnected risk. Planning one structure to withstand a particular flood is insufficient if the only road, bridge or transmission route serving it can fail independently.

The World Bank calls for updated multi-hazard assessments, better early warnings, improved location and design choices and

redundancy across critical networks. These proposals are not glamorous, but they may define the real sustainability of electricity investments.

Climate, risk and the cost of resilience

A changing climate can affect glacier-related hazards, rainfall extremes and hydrological patterns. It would be scientifically careless to attribute the precise causes of every individual disaster to climate change without a specific analysis. It would be equally irresponsible to design long-lived infrastructure using the assumption that historic risk patterns will remain unchanged.

Investors and public institutions must ask how projects behave under exceptional sediment loads, debris flows, landslides and access interruptions. Risk assessment should extend through the full electricity system rather than stop at a dam wall or powerhouse.

Resilience has a cost before a disaster. It also has a cost when ignored, paid through reconstruction, lost electricity, disrupted livelihoods and sometimes human lives.

Who ultimately benefits?

Hydropower can earn foreign currency, improve energy security, support electrification and enable industrial activity. Those outcomes are worth pursuing. But exports do not guarantee

equitable development, and installed capacity is not the same as dependable delivered supply.

A serious assessment asks who owns the assets, who pays when projects fail, what local communities receive, whether electricity tariffs remain manageable and how national revenue is used. It also asks whether the next generation of projects will be engineered for a changing Himalayan environment rather than an idealised one.

The choice facing Nepal is not between electricity exports and environmental caution. The country needs both ambitious development and exacting scrutiny.

Water can generate power. Only institutions can make that power endure.

Data note: The 2026 flood assessments are preliminary; verify updated damage figures, recovery status and operational generating capacity before publication. Export figures cited from NEA refer to FY2024/25.