

## Attaining Prosperity through Power Trade with Neighbouring Countries

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*The recent conflict between Russia and Ukraine has endangered peace worldwide. It has shrunk the supply of petroleum products, food, and chemicals. Economic hardships and inflation have doubled during the fourth wave of the COVID-19 pandemic. By reducing the import of petroleum products and electrical energy from hydropower, we can move forward to attain sustainable development. In these contexts, Nepal has done a power trade agreement with India for the mutual benefit of the two countries. The article has focused on the development of harnessing electricity from hydropower and using it to supply to Bihar and Uttar Pradesh during the demand seasons. Soon, power trade has prospects for mutual benefits with Bangladesh and China.*

[**Keywords** : Sustainable development, Mutual co-operation, Energy, Electricity, Power trade]

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## 1. Introduction

The development of a society is said to be sustainable if there is economic, cultural, and social durability is guaranteed. We should develop our world so that future generations should be able to be safe, prosperous, and healthy. Environmental protection should be kept in mind while developing our society.

Land, air, and water pollution should not be permitted while doing developmental works. Local cultures must be preserved. Economic development must be addressed to all sections of society. United Nations has done tremendous work on climate change, environment protection, and sustainable development (<https://www.un.org/sustainabledevelopment/>).

John Williamson has stressed reform in government policies to attain sustainable development (Williamson, 2004). Amartya Sen has viewed development as freedom. In his book, development as freedom, goals of economic, social, and general welfare should be freedom (Sen, 2001).

Arturo Escobar has explained failed development model prescribed by the Western countries in Latin America, Africa, and Asia. He is against naming the local people as the third world and forecasts the dangers of development discourse (Escobar, 1997).

Critical analysis of hydropower project implementation shows that there are numerous stakes to be handled carefully. They may be : displacement ,loss of land, environmental issues, riparian rights, loss of local culture and human rights issues (Kunwar, 2015).

**As S. B. Kunwar illustrates :**

**The series of resistance movements also depend upon the nature of state, political economy, and its trajectories. Resistance and negotiations are never-ending processes in the case of hydro- power projects which are the sites of contestation in Nepal (Kunwar, 2015).**

We are overusing fossil fuels and destroying the planetary ecosystem. Non-renewable energy sources may pollute the planet. It is best to reduce the use of nonrenewable energy sources such as coal, petroleum products, and natural gas. Most of the renewable Energy is generated from wind, water, and sun.

These types of energy are non-pollutant and sustainable. Only ten percent of the needed energy produced is renewable. We have

been producing only about 5 percent of energy from hydropower at the global level. Generating energy from hydropower is cost-effective and sustainable.

Sanjib Khagram has explained on the new discourse of sustainable development in his book *Dams and Development*. Transnational cooperation and conflicts are seen in hydropower, irrigation, and water supply. But basic problems of displacement and environmental degradation are not properly addressed (Khagram, 2004).

Nepal has the potential of producing a large amount of electricity for its needs and it can supply extra electric power to India for cooperation and benefit. Nepal and India signed an agreement known as Power Trade Agreement to solve the power crisis.

## **2. Objectives of the Study**

The conceptualization of the article is based on competent theories on the development, critical reviews on hydropower projects, and regional and multinational cooperation. The article analyzes hydropower production, ongoing projects, collaborations, and scope of supply of demand of energy through the power trade. Objectives of the study are to analyze discourse on development, sustainable development; to find out historical development, scope, and challenges in the hydropower sector and to explore the possibilities of power trade in transnational level.

## **3. Research Method**

The research is based on exploratory and descriptive research design. Primary data are collected through field visits, observations, and interviews. Secondary data are collected from the library, books, journals, newspapers, and online materials.

## **4. Timeline of Hydropower Development in Nepal**

Nepal started to produce hydropower in 1911 A.D. at Pharping near Kathmandu city. At the time, the political system was very closed and authoritarian. The electric energy produced was served to the king and Rana family in Kathmandu. In 1934, the next hydropower station started at Sundarijal. After achieving democracy in 1951, Trishuli, Panauti, and Fewa hydropower stations started to produce electricity. When the multi-party democracy was abolished in 1960,

King's direct rule prevailed up to 1990. During the period, Sunkoshi, Gandak, Kulekhani, and Seti hydropower stations were operated.

During the period of multiparty parliamentary practice from 1990 to 2006, Marsyandi, Chatara, Puwa, Modi, and Kali Gandaki started to operate. Kali Gandaki has a capacity of producing 400 megawatts of electricity.

Nepal experienced a great political change by abolishing the monarchy in 2006. Now, Nepal has become a federal, democratic republic. Middle Marsyandi, Chamelia, Upper Tamakoshi, and Kaligandaki 3 projects have started operations. Upper Tamakoshi has the capacity to produce 753 MW of electricity.

Now Nepal is at capacity to produce 2190 Megawatts. Nepal can supply electric power to neighbouring countries India, Bangladesh, and China. They are the most important partners in power trade. At present, India and Nepal have reaping mutual benefits from Power Trade. Bangladesh has joined to purchase electricity from Nepal with coordination from India.

## 5. Cross-Border Power Trade

During the rainy season from May to December, Nepal can supply electric power to India, Bangladesh, and China. At present, Nepal and India signed an agreement to 364 MW of power to export to India. It has become successfully implemented. In the near 111 MW and more power is expected to be exported to India. This project is a landmark achievement for both countries (<https://www.onlinekhabar.com>).

**In 2022/04/2 Nepal and India agreed on :**

**“(a) joint development of power generation projects in Nepal, (b) development of cross-border transmission infrastructure, (c) bi-directional power trade with appropriate access to electricity markets in both countries based on mutual benefits, market demand and applicable domestic regulations of each country, (d) coordinated operation of the national grids and (e) institutional cooperation in sharing latest operational information, technology and know-how”**  
<https://moewri.gov.np/>

From the above-mentioned power trade agreement, both countries have materialized enhanced power exports and shared mutual benefits.

According to Pampha Bhusal, the Minister for Energy, Water Resources, and Irrigation, the total installed capacity power has become 2,190 MW. The minister explains the milestone of the power trade agreement between Nepal and India in this way :

**Following the concurrence from the Government of India, NEA has been exporting up to 364 MW of power from six hydropower projects to India in the Day Ahead Market of Indian Energy Exchange This will decrease the country's trade deficit with India and at the same time, help to manage the seasonal surplus energy.**

The Joint Vision Statement in the Power Sector Cooperation was issued during the visit of the Rt. Honorable Prime Minister of Nepal to India. It will open further avenues of cooperation in the cross-border electricity trade including grid connectivity infrastructures and adequate market (Bhusal, 2022).

To the agreement, Nepal has started to participate in Indian Energy Exchange (IEX). Other areas of sustainable growth are: Nepal's 93% population uses electricity and 5.4 million consumers have access to electricity approximately (Tiwari, 2022).

## **6. Trans-Border Transmission Line**

According to Kulman Ghishing of the Nepal Electricity Authority, the 400 KV transmission line between Nepal and China is expected to be built in near future for future power trade between Nepal and China (Ghishing, 2022).

The current transmission line selling from Nepal to India is from Dhalkebar-Muzaffarpur 400 kv transmission line from which 364 MW power is being exported. Nepal is importing power from India from Tanakpur - Mahendranagar 132 KV transmission line at present.

Bangladesh and Nepal have signed an agreement on power trade so that electricity can be exported to Bangladesh. This can be implemented after approval from India and managing transmission lines.

## **7. Scope and Challenges**

New field of energy is an alternative to fossil fuels and natural gas. Additional to hydropower , Green Hydrogen is seen to be a major source of energy in times to come. It can be used as a fuel for

transportation, to produce ammonia and urea. Nepal can open a new avenue for self-reliance in the power sector. Solar power is also a natural source of energy. Nepal can utilize solar power to produce energy. As Shyam Bahadur Kunwar has pointed out, there are huge challenges. First and foremost is the huge money for investment. Multinational companies have signed agreements with Nepal to construct, produce and sell electricity with Nepal Government. Their Capacity to complete the hydropower projects is not tested. Second problem is about sustainability these huge dams and stations require large portion of land and water. The political economy, local issues and environmental problems may hinder the project implementation.

The third sphere of problems comes from the regional and global politics. Nepal should work cautiously to benefit from engagement with India, China, America and Bangladesh to implement the hydropower projects for the region.

## **8. SAARC, BIMSTEC, BRI and MCC**

Sustainable development can be achieved in South Asian region through SAARC, BIMSTEC, BRI and MCC.

SAARC was established in 1985 to create regional co-operation in South Asia. The headquarters is in Kathmandu.

Due to geo-political misunderstandings, it is not as active as it should have been developed. Through SAARC, power exchange and development of hydropower could be done.

The other sub-regional grouping is BIMSTEC. It should work for sustainable development and co-operation in the region.

BIMSTEC has priority on trade, investment, technology, energy, transportation, etc. The BIMSTEC Summit of 2018 had major theme on peace, prosperity and sustainability and emphasized on energy cooperation.

Belt and Road Initiative (BRI) is a program launched by China. Nepal can benefit from BRI by exploring power-trade with China.

Nepal's parliament has ratified the agreement of MCC between Nepal and the United States of America. This agreement is to be executed within five years to enhance the power transmission lines from Nepal to India, modernize road transport and alleviate poverty. A large amount of power generated in Nepal will be exported to India through the assistance of the MCC of USA.

## 9. Conclusions

After the end of the Second World War in 1945, development discourse developed to modernize the Third World countries (Escobar, 1995, Blaikie, 1980). New theories on development have emerged in recent time, they are: sustainability, welfare, Washington Consensus, Human Development, and freedom (Sen, 2000; Kothari, 2005; Willimson, 2005).

Development of hydropower and distribution of electric energy to human populations for heat, light, transport, industrial purposes, and service sectors may preserve the ecosystem. Nepal is heavily reliant on fuels, petroleum products, and natural gas for the people. Some experts have warned about the danger of economic crises like the Sri Lankan experience. Nepal's hydropower development and economic progress lie with cooperation in power trade with India, Bangladesh, and China. Nepal should maximize using electric vehicles for transport, use electricity in place of LPG Gas, use electricity for irrigation, and promote industries for consuming electricity.

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