

## An Analysis of Approved Foreign Direct Investment in Hydropower of Nepal<sup>1</sup>

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### Abstract

Hydropower is the major economic sector of Nepal. This paper analyzed approved FDI in hydropower sector based on secondary data 2004-2022. Descriptive research design has been used. The quantitative data presented in tabular form. Bar-diagram and flow chart used as required in analysis. Domestic financial resources are not sufficient to generate electricity. Due to this government of Nepal realized FDI in this sector. The government promotes and facilitates FDI by introducing appropriate policies, legal and institutional arrangements to create an enabling environment for domestic as well as foreign investors. Foreign investors are playing important role for hydroelectricity generation. Upper Bhotekoshi and Khimti project are developed By FDI. This study shows that the status of approved FDI on hydropower sector is increasing since 2004 to 2022 (except 2004-05, 2006-07, 2016-17, 2018-19 and 2021-22) with respect to total approved FDI in Nepal. It clearly state that foreign investors are interested to invest in this sector but there are some obstacle for them. If the government provides more secure environment to foreign investors they will be highly encouraged to invest in this sector.

**Keywords:** Electricity, Foreign investment, Foreign investors, Hydropower, Water resources

### Introduction

Nepal is one of the richest countries in water resources (Ministry of Water Resources, 2004). Though Nepal has huge potential of constructing large hydropower plants, the country is not able to mitigate the problem of energy crisis. Hydropower has been recognized as a sustainable source of energy with almost zero input cost. Its benefits

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are that it is non-polluting in the sense that it releases no heat and poisonous gases, it has low operating and maintenance cost, its technology offers reliable and flexible operation, and hydropower stations have increased efficiencies along with long life (Adhakari, 2006). Nepal has higher economical potential in hydropower exploitation, which accounts almost 42000 megawatt (WECS, 2010) of which only 1250 MW is harnessed (NPC, 2019). The electricity so far generated is far less than the demand of the country resulting large power crisis in country. Government of Nepal approved 99 points program with *National Energy crisis Mitigation and Electricity Development Decade*. The theme of 10000MW in 10 years was born Independent Power Producer Association Nepal (IPPAN, 2016). This shows that much more energy has to be generated in the country to remove the energy crisis. Therefore, the major challenge is to manage the financial resources. Because of the lack of technological advancement, skilled workforce and lack of bigger investors in the country, desired level of energy demand has not been fulfilled yet. To meet the financial resource gap foreign direct investment (FDI) has been realized to generate additional electricity.

Nepal has been following economic liberalization (financial sector) since the mid-1980s by adopting Structural Adjustment Program (SAP) of the International Monetary Fund (IMF) and the World Bank (WB) (Dhungel, 2016); and fully liberalized in 1990s with a hope of accelerated economic development and growth, after facing a continuous balance of payments (BOP) problem (Shrestha, 2017). Economic liberalization is the process of facilitating cross-border flow of goods and services without barriers. This enhances the role of private sector in economic activities. This also provides investment opportunity to foreign investor in domestic economy.

FDI is a direct investment into production or business in a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Foreign direct investment is in contrast to portfolio investment, which is a passive investment in the securities of another country such as stock and bonds (Wikipedia). Foreign investments are classified in the form of either foreign portfolio investment or a direct investment. Foreign portfolio investment or the indirect investment is a mere investment in equity of enterprises, which eliminates management practices. On the other hand, FDI is a direct investment in an economy where the investors practice management skills along with the inclusion of technology, resources and skilled work force (Gillespie, 2007).

The government promotes and facilitates FDI by introducing appropriate policies, legal and institutional arrangements to create an enabling environment for investors. During the pre-democratic period the investment system was not in vogue as today. Investors had difficulties in getting government permission before undertaking any economic activities. In the 1990s, foreign direct investment grew strongly with the wave of liberalization and globalization. After restoration of democracy Nepal liberalized all

economic sectors to invite foreign investors in the country. These included opening of a new policy on Foreign Direct Investment and “one window system” in 1992, Industrial Enterprise Act in 1992 and Foreign Investment and Technology Transfer Act 1992. These policies have given a priority to investment promotion in Nepal by providing incentives (Khanal and Shrestha, 2008). Hydropower Policy 2001 and Industrial Policy 2010 provision international rule of ‘No work No pay’ for the overall development of the industrial sector (Jabara, 2010). Current five year plan of Nepal also realize foreign investment to achieve economic growth (NPC, 2019). Currently FDI in Nepal regulated by the Foreign Investment and Technology Transfer Act (FITTA) 2019 (Department of Industry, 2022).

Hydropower sector in Nepal has been emerging as a preferred sector for FDI in recent year. The latest survey shows that 27.5 percent of FDI stock and 36.4 percent of total paid-up capital is in this sector (NRB, 2021). Domestic saving is very low and nearly three-fourth of development expenditure is met by foreign aid. Therefore, to harness 42000 MW of technically and economically feasible hydropower requires billions of dollars; there is no alternative of FDI. However except Khimti and Bhotekoshi there has been no major investment due to political instability bureaucratic hassles and labour strike, which frighten investor (Rijal, 2014).

### **Statement of the Problem**

Nepal has huge potentials of hydroelectricity but the country could not meet its domestic demand for electricity due to the lack of hydropower development. However, hydroelectricity received priority in every five-year national plan from six and half decades, the plans were weakly implemented. Lack of electricity remains a major constraint to economic development and growth. Although Nepal introduced economic liberalization in 1980, facts show that country is unable to attract foreign investment in hydropower projects because of instability and unrest in the country. In this context it is necessary to analyze the FDI and its contribution in hydropower sector and challenges faced by FDI in Nepal. From this statement this study is focused on answering the questions like, what is the contribution of FDI in hydropower generation in Nepal? What are the barriers of FDI in developing hydropower in Nepal? So to utilize the water resource for economic development of the country for being strong economic state, it is necessary to invest in hydro energy sector.

### **Objectives of the Study**

The main objective of this study is to describe the foreign investment opportunities in Nepal, especially in the hydropower sector. The Specific objectives of the study are as follows:

- ) To analyze the existing approved FDI in the hydropower of Nepal.
- ) To analyze the contribution of FDI in hydropower generation in Nepal.
- ) To clarify the obstacles for foreign hydropower investors to invest in Nepal.

### Research Method

This study is descriptive as well as analytical in nature. Primarily, it is based on secondary data obtained from secondary source. Necessary data and information were collected from Nepal Electricity Authority (NEA), Independent Power Producer Association Nepal (IPPAN), Ministry of Finance (MOF), Central Bureau of Statistics (CBS), Department of Industry (DOI), Water and Energy Commission Secretariat and various other national and international journals. It is macro level study and only secondary data have been used for finding actual status of approved FDI in hydropower of Nepal. The quantitative data are presented in tabular form. Different statistical tools like ratio and percentage are used to analyze the presented data in tabular form. Other data presenting techniques like pie-chart, bar-diagram and flow chart are used in analysis. The main limitation of the study is that, it is based on secondary data and information from 2004 to 2022. This study covered only approved FDI in hydroelectricity among the other sources of energy.

#### Theoretical, technical and economical potentiality of major rivers in Nepal

The theoretical, technical and economical potentiality of main river system has been estimated 83.28, 45.61 and 42.133 million kw respectively. Table 1 has presented potentiality of major rivers as follows:

**Table 1**

*Major River and hydroelectric potentiality in Nepal*

River basin	Theoretical potential*	Technical potential*	Economic potential*
Saptakoshi	22.35	11.40	10.860
SaptaGandaki	20.65	6.66	5.270
KarnaliMahakali	36.18	26.57	25.125
Southern rivers	4.11	0.98	0.878
Country's total potentiality	83.29	45.61	42.133

Source: Energy synopsis report WECS, (2010)  
Million Kw \*

#### Decade-wise development of hydropower

Power development history of Nepal begins from 1911A.D. and Nepal passed eleven decade in hydroelectricity generation. The trend of power development status in different decades has been shown in table 2 below. The highest growth of hydropower took place during 2011-2023 where in 1777.32MW (73.14 percent of the total) was produced followed by the decades of 2001-2010, 1981-1990 and 1991-2000 decades

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which saw the production of 319.45MW (13.15percent of the total), 177.98MW (7.32 percent of the total) and 103.50MW (4.26 percent of the total respectively. The period since 1981 produced 2378.25MW (97.88 percent of the total), implying that only 51.61MW (2.12 percent of the total) was produced during the entire period of 1911-1980.

**Table 2**

*Decade-wise hydropower development*

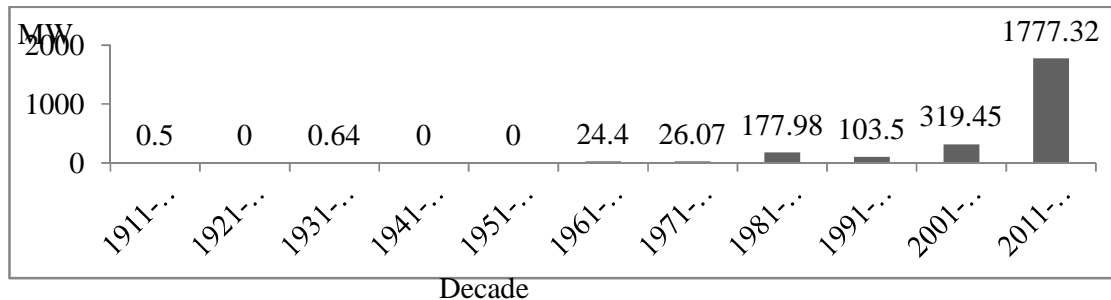
Decade	Installed capacity ( in MW)	Installed capacity(%)
1911-1920	0.5	0.02
1921-1930	0.00	0.00
1931-1940	0.64	0.04
1941-1950	0.00	0.00
1951-1960	0.00	0.00
1961-1970	24.40	1.00
1971-1980	26.07	1.07
1981-1990	177.98	7.32
1991-2000	103.50	4.26
2001-2010	319.45	13.15
2011-2023*	1777.32	73.14
Total	2429.86	100

Source: NEA Annual Report (1985-2023) compilation  
Mid July 2023 \*

Nepal has passed a century and more thirteen years in hydropower development sector but it has achieved only 2429.86MW till 2023. Since last one decade (2011-2023) Nepal has produced 1777.32MW.

**Figure 1**

*Decade-wise hydropower development installed capacity (MW)*



**Contribution of FDI in hydropower generation**

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There is no long history of FDI in hydropower generation in Nepal. Before 1990s all the hydropower stations were constructed through grant aid from friendly countries like the USSR (Panauti-2.4MW), India (Trisuli-18 MW, Devighat-14.1MW, Gandak-15MW, Surajpura-Kosi-20MW) and China (Sunkoshi-10MW). Since 1970, hydropower development took a new turn with bilateral and multilateral funding. The major donor countries in the period were Japan, Norway, Germany and South Korea including Canada, Finland, Denmark, Sweden and USA. The lending agencies were the World Bank, Asian Development Bank (ADB), Japan Bank for Industrial Corporation (JBIC) former Overseas Economic Co-operative Fund (OECF), Saudi Fund for Development, Kuwait Fund and others. From the 1990's subsequence to the adoption of the policy of economic liberalization, hydropower development took a new turn with the private sector entering the arena (MOWR, 2004). New government policy of welcoming FDI in hydropower sector two joint-venture companies has already been generation and selling hydropower on build-operate-transfer (BOT) basis. The Panda Energy Corporation of the United States has invested in the 36 MW Upper Bhotekoshi project in a joint venture with the Solti Group of Nepal, while Norway's Statekraft has invested in the 60 MW Khimti project. Recently, government of Nepal signed in PDA of Uperkarnali (900MW) and Arun-III (900MW) with GMR and Satlaj Company of India. Also, government of Nepal and India jointly commissioned Pancheshwor Authority for Mahakali hydropower. FDI is necessary for hydropower generation in Nepal but it is far less than expected due to various reasons, political instability may be the main reason among them.

Table 3 shows that the hydropower project developed by foreign investors. Actual inflow of FDI is 753.04 million dollar in hydropower project with 344.5 mw installed capacity out of 2429.86 total installed capacities.

**Table 3**  
*Contribution of FDI in hydropower development*

Project	Foreign investment (in million \$)	Capacity in MW
Khimti	134.9	60
Bhotekoshi	97.5	36
Indrawati	1.2	7.5
Upper Trishuli -1*	453	216
Upper Madi	61.44	25
Total	753.04	344.5

Source: Researcher compilation (NEA, IPPAN report)  
Hydropower project under construction\*

**Status of approved FDI in hydropower**

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The approved FDI in hydropower of Nepal is positive but actual FDI is not satisfactory under economic liberalization policy. Recently, foreign investors are preferred to invest in this sector. The trend of approved FDI on hydropower has shown by table 4.

**Table 4**  
*Status of approved FDI in Nepal*

Year	Approved FDI in hydropower*	Total approved FDI *	Approved FDI in hydropower(%)	Total approved FDI(%)
2004-05	0	571	0.00	0.15
2005-06	15	1558	0.01	0.40
2006-07	0	2453	0.00	0.63
2007-08	2494	7968	2.03	2.06
2008-09	1657	5356	1.35	1.38
2009-10	4747	9100	3.87	2.35
2010-11	1179	10051	0.96	2.60
2011-12	2988	7141	2.44	1.85
2012-13	2483	19936	2.03	5.15
2013-14	8617	20107	7.03	5.20
2014-15	54287	67461	44.30	17.44
2015-16	1857	15140	1.52	3.91
2016-17	0	15153	0.00	3.92
2017-18	36648	55730	29.90	14.41
2018-19	0	24999	0.00	6.46
2019-20	4132	37802	3.37	9.77
2020-21	1451	32073	1.18	8.29
2021-22	0	54159	0.00	14.00
Total	122556	386758	100.00	100.00

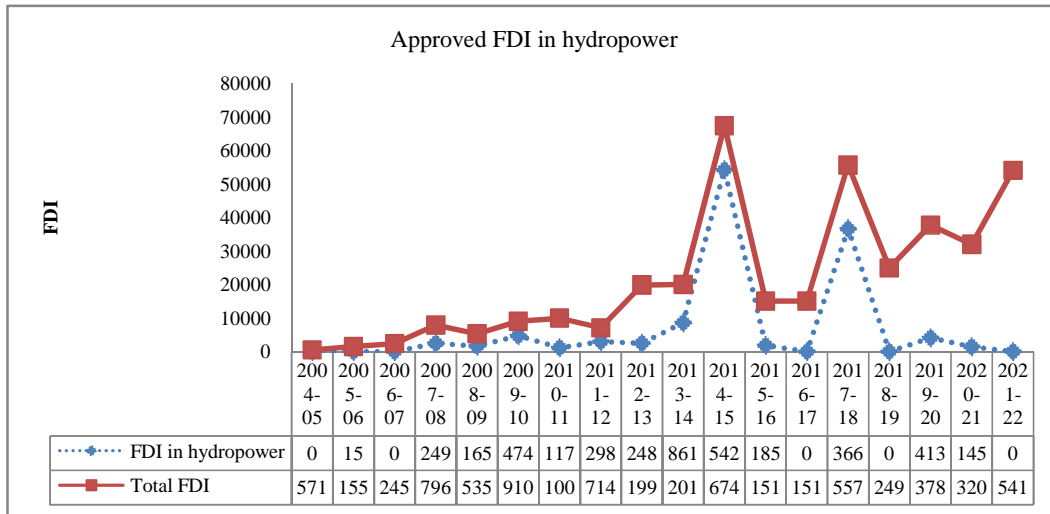
Source: industrial statistics (2004-2022) compilation

\* Approved FDI Rs. million

Table 4 shows the status of approved FDI on hydropower sector is increasing from 2004 to 2022 (except 2004-05, 2006-07, 2016-17, 2018-19 and 2021-22) with respect to total approved total FDI in Nepal. There is no FDI approved in 2004-05, 2006-07, 2016-17, 2018-19 and 2021-22 means foreign investors are not interested to invest in hydropower during the period due to various reasons. The highest approved FDI on hydropower in 2014-15 is Rs. 54287 million (44.30%) and lowest FDI in 2005-06 is Rs.

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15 million (0.01%). The highest total approved FDI in 2014-15 is Rs. 67461 million



(17.44%) and the lowest total approved FDI in 2004-05 is Rs. 571 million (0.15%).

After economic liberalization 1990, the trend of approved FDI in hydropower sector is increasing but there is fluctuating situation which can be shown by figure 2. The figure shows the trend line between total FDI and FDI in hydropower sector.

Figure 2

*Trends of approved FDI on Hydropower in Nepal*

### Discussion

Government of Nepal provided incentives to foreign investors by reviewing existing policy and institutional arrangement. Some important aspect of foreign investors in hydropower sectors are discussed here.

#### Hydropower policy 2001

Government announced new hydropower policy to attract foreign investment in hydropower generation, transmission and distribution projects through sole or joint venture company of private and public sector. The policy encouraged foreign investors to make joint investment with Nepalese investors by providing incentive through transparent process. Non –tourist and working visa, exchange facilities, investment risk, tax rebate and power purchasing agreement facilities provided to foreign investors.

#### Bilateral Investment Promotion and Protection Agreement (BIPPA)

Government of Nepal has approved Bilateral Investment Promotion and Protection Agreement (BIPPA) with some countries which provide confidence for foreign investors to invest in Nepal. Nepal has signed BIPPA agreement with 6 countries



including Finland, France, Germany, India, Mauritius and United Kingdom. So investor will take direct benefit from those countries in terms of rights of foreign investors, fair treatment, and security of the investment and from other disputes (Foreign Investment Policy).

#### **Double Taxation Avoidance Agreement (DATTA)**

Nepal has already entered into the Double Taxation Avoidance Agreement with ten countries to avoid double taxation. This agreement avoids levying of tax by two or more jurisdictions on the same income or assets. Nepal has DTAA with India, Qatar, China, Austria, Norway, Republic of South Korea, Mauritius, Pakistan, Sri Lanka, and Thailand and recently held with Bangladesh which encourages foreign investor to invest in Nepal (IRD).

#### **Investment Board**

Investment board has been formed under the chairmanship of Prime Minister to facilitate foreign investors to make large scale investments safely into the country.

#### **Power trade agreement between Nepal and India**

Government of Nepal and India has signed a power trade agreement for their mutual benefit and paving the way of power trade. Recently held in PTA between Nepal and India has successively expand the energy market which solve the problem of hydropower investor for power trade.

#### **Foreign Investment and Technology Transfer Act 2019**

FITTA 2019 specifies that foreign investments, including hydropower services, must be channeled through a single office. Foreign investors will be able to use the Single Stop Service Centre for services such as hydropower registration, foreign investment approval, loan approval, company registration, labour permit and visa facilities. This provision is explicitly stated in current legislation. This has improved the investment climate for hydropower (Bhandari, 2022).

#### **Barriers of FDI on hydropower development in Nepal**

Nepal has many potentialities for foreign investors to invest in hydropower generation but there are certain barriers which are discussed as following;

**Infrastructure barriers.** Insufficient infrastructure is one of the major obstacles for foreign investor. They are facing the infrastructure bottleneck for investment. The supply of power and water is insufficient where as the facilities of roads are not good which makes costly transportation. Became a landlocked county Nepal is fully depends on India. Afterall Nepal used to Indian port for transportation.

**Government procedures.** Working procedure of government is not satisfactory as the investor needed. Investors have to wait for a long time to get service from government. The corrupted working culture of bureaucracy has raised the risk of investment in Nepal. The visa procedure for investor is not sufficient that is made by government of Nepal.

**Political situation.** There is a strong and positive association between economic growth and political stability. Political stability plays a vital role in development of infrastructure. The country is continuously facing the problem of political instability after restoration of democracy there are changes in two governments within a year. The policy adopted by one government immediately changed by another there is policy inconsistency which makes the risk for foreign investor to invest in Nepal.

**Dispute settlement.** The major obstacles for hydropower investor are to settle dispute which arises in investment period. Now, government of Nepal settled dispute under foreign investment policy and hydropower policy which is insufficient for dispute settlement and makes it very hard and more costly. It is very important for government to create national regulatory framework and authority, that they deal with investment related matters to providing incentives for investors and to solve dispute through legal provision.

**Monopoly of NEA.** Foreign investors think that the major obstacles for investment in Nepal are state owned company NEA. NEA has monopoly in energy sector. It has all right to buy and distribute electricity without any competition. It makes difficulties for investor to invest in hydropower.

**Policy inconsistency.** There is an inconsistency among various policies. For instance, the Electricity Act 1992 provides a generation license period of 50 years, whereas the Hydropower Development Policy 2001 suggests only 35 years (Dhungel and Rijal 2012). Besides these inconsistencies, hydropower sector has also become victim of political instability. There are various impractical environmental and forest guidelines which hinder for construction of transmission lines.

**Transmission line constraints.** Currently, lack of adequate transmission lines and insufficient capacity of existing cross-border transmission lines are major constraint for hydropower investors. Therefore, the foreign investors are not motivated to invest in hydropower.

### **Conclusion**

Nepal has been facing extreme power crisis due to the lack of proper planning, proper implementation of those plans which are already formulated, misunderstanding between investors and local people and wrong process of analyzing project the development of hydroelectricity generation is not fast as required.

Lack of capital is another problem that the country is facing now. The insecure environment of investment in Nepal cannot attract foreign investors. In recent decade foreign investors are playing important role for hydropower generation which is shown by Upper Bhotekoshi (36MW) and Khimti (60MW) project. Approved FDI on hydropower sector is increasing since 2004 to 2022 (except 2004-05, 2006-07, 2016-17, 2018-19 and 2021-22) with respect to total approved FDI in Nepal. Actual inflow of FDI

is 753.04 million dollar in hydropower project with 344.5 mw installed capacity out of 2429.86 total installed capacities. It shows that if the government provides more secure environment to foreign investors they were highly encouraged to invest in hydropower. Foreign investors are not satisfied with the working procedure of government they have to wait for a long time to get service. Corrupted working culture of bureaucracy raise more risk for investment. So, government should pay attention toward these factors. If the country creates better political situation with stable government to assure long term political stability, then the country will be able to find many foreign investors in hydropower sector. Generating more electricity plays the vital role for aggregate development of country by creating employment opportunity and export electricity.

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