NEPAL INDUSTRIAL BENEFITS PLAN

UPPER TRISHULI (UT-1) HYDROPOWER PROJECT (216 MW)

RASUWA DISTRICT, NEPAL

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
BS	Bikram Sambat
CBO	Community Based Organization
CFUG	Community Forest User Group
CNI	Confederation of Nepalese Industries
DoED	Department of Electricity Development
ECoN	Export Council of Nepal
EIA	Environmental Impact Assessment
FMCG	Fast Moving Consumer Goods
FNCCI	Federation of Nepalese Chamber of Commerce and Industry
FTTAN	Federation of Truck Transport Association of Nepal
FY	Fiscal Year
GDP	Gross Domestic Product
GoN	Government of Nepal
GTAN	Goods Transport Association of Nepal
HAN	Hotel Association Nepal
HH	Household
HEP	Hydro Electric Project
IFC	International Finance Corporation
ICAN	Institute of Chartered Accountants of Nepal
IPPAN	Independent Power Producers' Association of Nepal
MAN	Management Association of Nepal
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NBA	Nepal Bar Association
NCC	Nepal Chamber of Commerce
NEA	Nepal Electricity Authority
NWEDC	Nepal Water and Energy Development Company Pvt. Ltd.
O&M	Operation and Maintenance
PAF	Project Affected Family
PDA	Project Development Agreement
RAP	Resettlement Action Plan
R&R	Resettlement and Rehabilitation
SCAEF	Society of Consulting Architectural and Engineering Firms Nepal
SEZ	Special Economic Zone
UT-1	Upper Trishuli-1
VDC	Village Development Committee
WTO	World Trade Organization

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EXECUTIVE SUMMARY

The Nepal Industrial Benefits Plan is based on the objective of the Government of Nepal that hydropower development shall act as a stimulus to bring long term sustainable benefits to Nepal by facilitating Nepali industry, suppliers and service providers in mutually benefitting from each other and ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project development in the country.

The main objective of this plan is to provide access to early information on project opportunities. This shall enable Nepal-based firms to gear up to meet the needs for supply of goods and services at competitive prices in accordance with the timelines and quality standards required by the company. Further, the Nepali industries and service suppliers can mutually benefit from having a strong competitive supplier sector based in Nepal.

The specific objectives of the Industrial Benefits Plan are:

1. To ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project developments;
2. To help in promoting a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements for goods and services for the Project;
3. To encourage initiatives for joint venture and quality improvement measures that shall enhance the ability of Nepal-based suppliers to compete domestically and internationally;
4. To promote safe and healthy working conditions among suppliers of goods and services to the company and the Project; and
5. To ensure contractors afford full and fair opportunity for Nepal-based suppliers to access project requirements for goods and services.

As the Industrial Benefits Plan directly relate to fulfil the industrial requirements of goods and services, its role is inter-related with the contractor and the Nepali suppliers. Although 142 households have been identified as the core project affected families, this plan's domain is beyond the project district and even encompasses the country as a whole as it involves procurement of goods and services. Hence, NWEDC does not have much stake in the implementation of the plan besides its role of stakeholder facilitation. Establishing links between the contractor and Nepal-based suppliers in ensuring full and fair opportunity of access will go a long way in promoting competitive supplier base within Nepal and create a win-win situation for both the parties.

The plan reviews the existing industrial sector landscape of Nepal in meeting hydropower development requirements, sets out standard operating procedures and makes a set of recommendations to ensure that Nepali contractors access full and fair opportunity for competitive bidding in the purchase of goods and services for UT-1 HEP requirements. Through the consultation process, the plan also identifies 75 potential Nepali commodity associations and key suppliers of goods and services with whom the HEP contractors could approach to compete in the procurement process.

Amongst others, the plan recommends the contractor to facilitate an interaction meeting with potential Nepali suppliers of goods and services; disseminate timely information about the material requirements; stimulate business linkages; maximize benefits to local suppliers; set up suppliers' database, and encourage full and fair access to the suppliers of goods and services.

CHAPTER 1: INTRODUCTION TO NEPAL INDUSTRIAL BENEFITS PLAN

1.1 Background

Upper Trishuli-1 hydropower project is proposed to be developed as a 216 Mega (MW) green field run-of-the-river project located in the upper part of Trishuli watershed in Haku VDC, Rasuwa District of Central Development Region of Nepal. IFC Infra-Ventures signed a Joint Development Agreement (JDA) with Korea South-East Power Co. Ltd, Daelim Industrial Co., Ltd, Kyeryong Construction Industrial Co. Ltd. and Jade Power Private Limited in March 2012 to develop the project. The Project Development Agreement (PDA) with the Government of Nepal was signed on December 29, 2016. Once commissioned, the project will account for sizeable portion of Nepal's current installed capacity and will sell power under a long-term Power Purchase Agreement (PPA) with Nepal Electricity Authority (NEA).

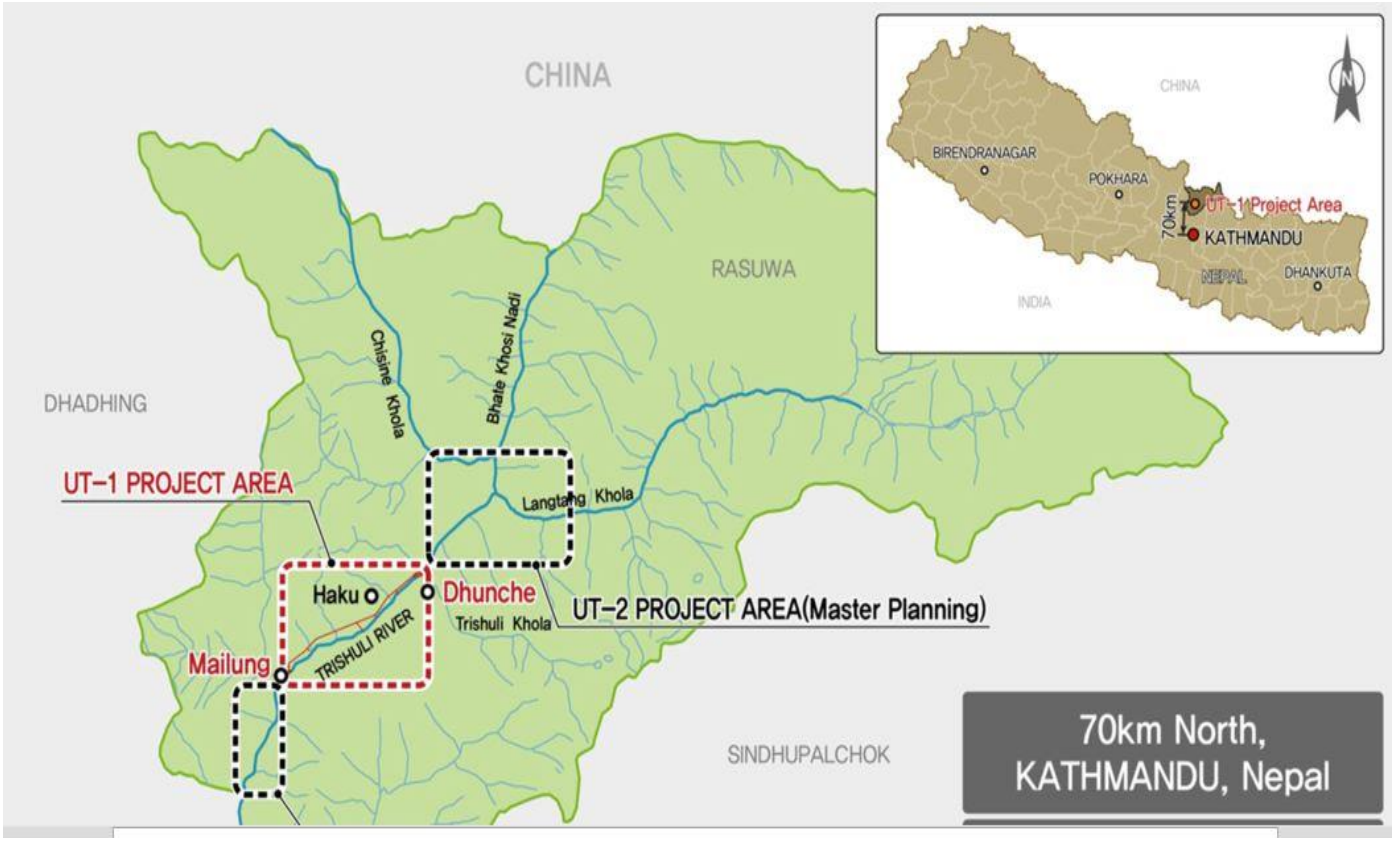
The intake site is located near the confluence of Bhotekoshi river at Dhunche and Haku VDC on the right bank of Trishuli River, about 70km directly north of Kathmandu. The Project consists of a 77-metre wide diversion dam in a narrow gorge located 275 metres downstream of the confluence of the Trishuli with the Bhotekosi River. The direction of the valley is mostly south-west. The dam site can be viewed on Google Earth at 28-07-36.61N and 85-17-52.42E. Apart from the dam and spillway, all structures are located underground on the right bank of the river. The Pasang-Lhamu highway passes on the left bank of the river and is the primary access route for the development.

The Nepal Industrial Benefits Plan is based on the objective of the Government of Nepal that hydropower development shall act as a stimulus to bring long term sustainable benefits to Nepal by facilitating Nepali industry, suppliers and service providers in mutually benefitting from each other and ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project development in the country.

The PDA has made several provisions for the welfare of the affected people of the project area. PDA's Clause No. 11.10 states that *the Company shall, and shall procure that its Contractors and Representatives shall, in connection with the conduct of the Project: maximize use of Nepali resources and give first consideration and full and fair opportunity to technically and commercially qualified Nepali citizens, materials and firms provided that in each case, the use of such Nepali resources meet the quality, quantity and availability requirements of the Company and provided further that use of such resources does not have a material and adverse impact on the costs and the timelines for the Project.*

Accordingly, NWEDC has agreed to develop the plan to provide ample opportunities to Nepal's manufacturers/suppliers/service providers during different stages of the HEP's life cycle, *i.e.* pre-construction, construction and post-construction stage/O&M stages.

Map 1: Location map of UT-1 HEP



1.2 Objective of the Plan

The main objective of this plan is to provide access to early information on project opportunities. This shall enable Nepal-based firms to gear up to meet the needs for supply of goods and services at competitive prices in accordance with the timelines and quality standards required by the company. Further, Nepali industries and service suppliers can mutually benefit from having a strong competitive supplier sector based in Nepal.

The specific objectives of the Industrial Benefits Plan are:

1. To ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project developments;
2. To help promote a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements for goods and services for the Project;
3. To encourage initiatives for joint venture and quality improvement measures that shall enhance the ability of Nepal-based suppliers to compete domestically and internationally; and
4. To promote safe and healthy working conditions among suppliers of goods and services to the company and the Project.

1.3 Scope of the Plan

This plan covers details of pre-construction activities, main works, itemization and quantification of goods (major items) and technical standards thereof. In addition, this report covers the anticipated Service requirements in connection with the construction of the project.

Since there are immediate service requirements and early construction, at the preliminary level, the Nepal Industrial Benefits Plan considers the availability of engineering, legal, planning and consulting services while the UT-1 HEP construction phase shall enable more precision on the specific requirements of goods and services and their timing that would enable Nepali suppliers/vendors/distributors, manufacturers and agents to be accommodated.

1.4 Various benefits to Nepall industries from UT-1 HEP

When completed, UT-1 HEP is expected to provide substantial benefits for the national economy and local community of the project area in addition to direct benefits, new jobs, lower electricity costs, etc. The project will stimulate increased economic activity thereby producing important benefits to the suppliers of good and services. range of benefitting domestic industries/suppliers/firms through gainful employment and generating revenues to the government and other multiplier benefits to the national economy. In other words, the project is expected to provide a significant boost to the Nepali economy by supporting economic growth and job creation as well as enhancing the competitiveness of Nepali goods both locally and nationally.

The project is anticipated to provide substantial economic benefits to the project affected families and adjoining vulnerable communities through direct employment. In order to encourage Nepali firms to invest in development projects, the Government of Nepal has provided concessional rates of customs duty, excise duty and refunds. For instance, any Nepali industry importing plant, machinery and equipment required for the project is entitled to a 50 per cent rebate on the applicable customs duty and to full exemption from sales tax. Similarly, if any industry established

and operating in remote areas is entitled to 35 per cent rebates on the excise duty from the date of operation.

As like other HEPs, UT-1 HEP also has different stages during its life cycle, *i.e*. pre-construction stage, construction stage and post-construction stage/ O&M stage. Various opportunities may be availed by Nepal's construction services industry, service providers and suppliers of building materials, etc. during all these stages of the project. Some of the activities at various stages are listed as below where manufacturers/suppliers/vendors of Nepal can participate:

- Pre-construction stage: survey and investigation; infrastructure works, *i.e*. roads, bridges, buildings, etc.
- Construction stage: civil works, hydro-mechanical, electro-mechanical and other establishment works;
- Post-construction stage: annual and routine maintenance works of the plant and civil structures.

1.4.1 Infrastructure works, *i.e.*, roads, bridges and buildings

Infrastructure works, *i.e.* roads, bridges and buildings, etc. are a pre-requisite to start the project's main works. In UT-1 HEP, roads hold a key as at present there is no road access to project components. Along with the major works various indirect benefits also appears which may be availed by industrial sectors such as hospitality, banking, transporters, raw material suppliers, insurance, medical, school civil aviation, tourism, etc. As the quantity of excavation and concreting in the dam is large and execution of the works would call for optimal planning and scheduling of resources for completion of the dam within a planned time period, NWEDC has highly prioritized timely completion of all construction works. Various infrastructure works as mentioned below will be taken up before the starting of the main works.

Estimated length of roads in the project area to various work sites, colonies and the project vicinity is approximately 14.6 km. All construction works of project roads and bridges are proposed to commence soon. NWEDC will execute these infrastructural works (roads, bridges, residential and non-residential buildings, etc.) through Nepal's resources through transparent tender procedures. Various steps involved in tendering procedure are as follows:

- Publishing Notice of Inviting Tender (NIT) of works on website and newspapers regarding work to be executed to provide fair opportunity to all the eligible bidders to participate for the said work/ services/ supplies, etc.;
- Eligible bidders can participate in the tenders; and
- Finally, work will be awarded to the successful bidder.

Potential eligible Nepali construction companies/suppliers/service providers can participate in the various above-mentioned activities, who are going to be benefited from the above-mentioned works. Nepali firms/companies can render services for all types of works during the entire construction phase of five years. Nepal's construction agencies, suppliers and service providers may tie up as sub-contractors or logistics suppliers with the international companies.

Table 1: Details of proposed access road construction

SN	Description of road	Length (km)
1.	Mailung bridge to weir site	11.8
2.	Surge tank access track	2.75
Total length of road		**14.5**

Source: Detail Design Report, UT-1 HEP

1.4.2 Construction methodology

The methodology adopted for the construction of UT-1 HEP takes into consideration construction schedule, compatibility of construction equipment to site conditions and the quantities as well as the utilization factor of equipment within the scheduled construction period. Mechanized construction has been planned for almost all types of construction activities so as to achieve consistent quality at a faster rate.

Implementation of the project is proposed to be divided into the following packages:

- Package 1: construction of dam, diversion tunnel, Intake, Intake tunnels, HRT, Adit and tunnel gates and hoist
- Package 2: Construction of Head Race Tunnel (HRT), Adit to HRT, surge shaft, BVC, pressure shaft (without steel liners), power house complex, TRT, outfall and switchyard;
- Package 3: Hydro mechanical works; and
- Package 4: Electro-mechanical works

Hydropower construction is managed according to general construction project management best practices—constructed to specifications for quality, time and budget. Furthermore, social and environmental impacts and human health and safety must be considered at all times. Important components of construction, project management include contract strategy, construction program and scheduling, planning and task sequencing, and risk and cost management. Hence, during civil construction and operation phases, coordination among multiple contractors (interface management) shall rest with NWEDC which shall provide critical oversight because oversight responsibility begins with the study and planning phase and continues until plant commissioning.

Construction phase requires immense materials and supplies during main civil works such as excavation, concreting, coffer dams, dam construction, intake tunnels and structures, desilting chambers, surge/pressure shafts, head/tail race tunneling, powerhouse complex, installation of gates and hoists, electro-mechanical works, etc.

Even during the operation phase, requirements of industrial goods and services continue to meet compliance through monitoring as actual impacts of the facilities are analyzed compared to expected impacts. The efficacy of mitigation and compensation measures are assessed, and any necessary adjustments are made.

1.5 Plan preparation methodology

In order to prepare the Industrial Benefits Plan as prescribed in the scope of work, the study adopted the following methodology:

1.5.1 Literature review

A literature review of relevant and existing documentation was conducted. Some of these documents include:

- Detail Design Report, UT-1 HEP;
- EIA Report, UT-1 HEP;
- Land Acquisition and Livelihood Restoration Plan, 2017
- Guides and manuals providing information on the investment climate and procedures of Nepal;
- Nepal Trade and Integration Strategy, 2010;
- Industrial Statistics Report (2012), Department of Industry
- Economic Surveys, Ministry of Finance;
- Macro-economic Situation, Nepal Rastra Bank;
- Doing Business in Nepal, World Bank;
- Manufacturing Sector Profile, Office of the Investment Board, Government of Nepal, 2017;
- Investment Plan for Nepal, 2011. Government of Nepal; and
- Private Sector Development and Prospects for Norwegian Trade and Investment Interests in Nepal

1.5.2 Consultative meetings

Two consultative meetings were organized in Battar and Kathmandu in December 2017 with potential suppliers of goods and services to gain insights into how the suppliers can help promote a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements of goods and services for UT-1 HEP.

Amongst others, the consultative meetings highlighted number of challenges and different facets of meeting hydropower needs from Nepal-based manufacturers/suppliers of goods and services. Most notable issues include lack of information and awareness about UT-1 HEP industrial requirements and lack of transportation facilities to transport materials in the project area. According to the commodity associations, although transportation in mountain areas has posed hindrance to Nepali suppliers, they are well positioned to meet the industrial requirements of the project as they have a wide network of supply chain within the country.

1.6 Limitations

The Industrial Benefits Plan preparation was a smooth exercise. Series of meetings and consultations covered a wide range of stakeholders ranging from district, regional and national level potential producers and suppliers of goods and services. However, one of the limiting factors was the unavailability of data and description of procurement-related requirements of the project, which could not provide itemization and quantification of goods and services along with their quality, supply timeline and place of delivery that is required while constructing the project. Although some information has been enlisted in Annex 2 of the Plan, it is still incomprehensive as it briefly summarizes the amount of goods required leaving apart the varieties of services that the project will require during the construction phase.

CHAPTER 2: EXISTING INDUSTRIAL SECTOR LANDSCAPE IN MEETING HYDROPOWER DEVELOPMENT REQUIREMENTS

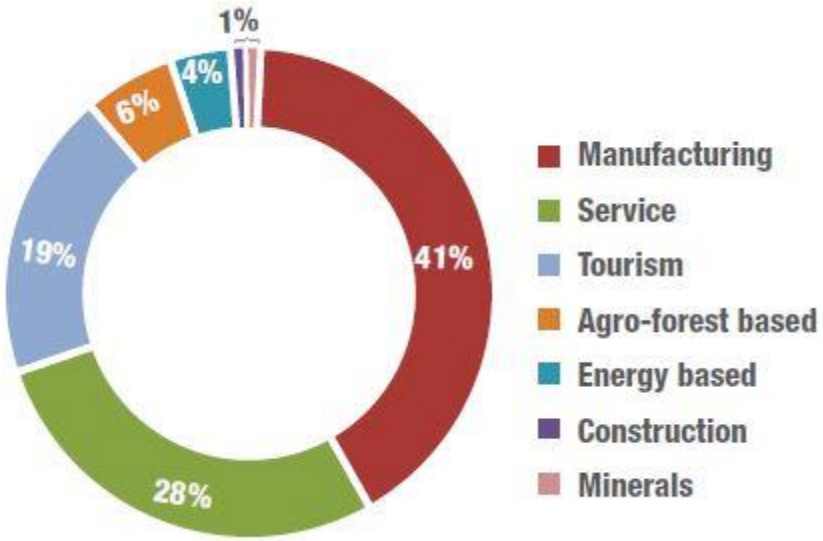
2.1 Status and prospects of industrial development in Nepal

Nepal, a least developed and landlocked mountainous country has been facing the perennial problems of abject poverty, marginalization, weak institutional capacity, financial and technical constraints. As a result of its prolonged political transition and inadequate infrastructure, Nepal's economic growth rate has remained at 3.8%, on average, for the past 10 years, which is below the South Asian average.

There are currently 6,328 companies in Nepal registered under different categories (as of March 2016). The largest share of these (41%) are in the manufacturing sector, which has 2,585 companies, followed by the service and tourism sectors. The structural transformation of Nepal's economy over the last decade has brought with it significant growth in the service sector, compared to the manufacturing and agriculture sectors. However, a knowledge-based economy cannot be sustained unless it is adequately supported by a growing manufacturing economy. In a country where the contribution of agriculture to total GDP is fast decreasing (36.6% in FY 2000/01 to 31.6% in FY 2015/16), manufacturing jobs are considered ideal for workers transitioning out of agriculture, as service jobs require a higher level of education and professionalism.

The rise in the trade deficit can be attributed to the weak production base in Nepal and an increase in imports of goods from India. The revival of the manufacturing sector has the potential to reduce the trade deficit, increase exports and create new jobs. Additionally, the removal of trade barriers under the WTO regime can provide impetus for the expansion of the manufacturing sector in terms of size, capacity and productivity, which will help Nepal to move towards prosperity.

Figure 1: Composition of Nepali industry by number of entities established

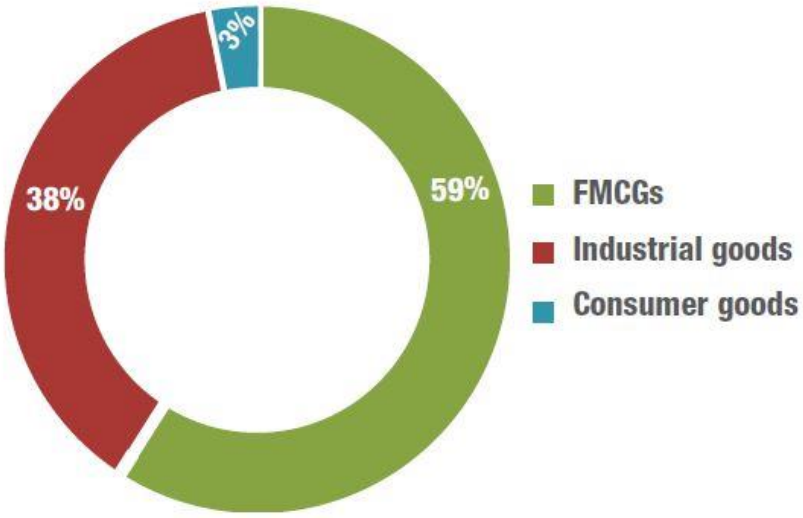


Source: IBN, 2017

The manufacturing sector in Nepal can be broadly classified into three sub-sectors: fast moving consumer goods, industrial goods and consumer goods. Of these three sub-sectors, fast moving consumer goods is the largest. Due to limited electricity (although this has become more reliable since 2016) and lack of an enabling environment for manufacturing enterprises, industrial goods constitute a relatively small portion at this moment. However, this sub-sector is expected to grow as the economy matures and the enabling environment improves.

Amongst the industrial goods are fabricated metal products (cast iron, steel, structural metal products, tanks, reservoirs, etc.); non-metallic mineral products (clay, building materials, cement, lime and plaster, articles made of concrete and plaster, and cut, shaped and finished stone); basic metal (basic iron, steel, precious and other non–ferrous metals; plastic and rubber products (plastic and synthetic rubber, rubber tyre and tubes, etc.); and textiles.

Figure 2. Manufacturing sub-sectors by GDP value added



Source: IBN, 2017

Agriculture, which is dependent on the vagaries of monsoon, is the primary source of income and employment. Agriculture accounts for more than 38% of GDP and more than 75% of employment generation. Primary industrial products include food, beverage, iron and steel and cement production. Tourism contributes to about 12% of the total foreign exchange. High transit costs, absence of basic infrastructure, dependence on traditional technologies, etc. have left some of Nepal's structural limitations. In fact, the entire industrialization process of Nepal has been marred by constraints such as land-lockedness, high cost of capital investment (including energy), lack of raw materials, inadequate human resources, small size of market and dominance of imported products.

Upper Trishuli-1 HEP is located in far flung mountainous district of Rasuwa in Central Development Region with little infrastructure and communication facilities. It takes almost a day for a normal vehicle to reach the project site from Kathmandu, and if there are multiple landslides, hundreds of vehicles could easily get stuck for days together without access to basic amenities. In such conditions, one could easily imagine how difficult it would be to transport project equipment, machinery, etc. via such route.

2.2 Distribution of manufacturing industries and industrial hubs in Nepal

Due to its unique topography and strong business linkages with India, manufacturing companies in Nepal are concentrated in Kathmandu and the *Terai* plains bordering India. The major cities for manufacturing are Kathmandu, Chitwan, Hetauda, Birgunj, Nepalgunj, Bhairahawa and Biratnagar. Again, the Government of Nepal has established 11 Industrial Districts in different parts of the country to create an enabling business environment and infrastructure for manufacturing. Out of 11 industrial districts, 10 are in operation (Balaju, Patan, Hetauda, Dharan, Nepalgunj, Pokhara, Butwal, Bhaktapur, Birendranagar and Rajbiraj) and one is under construction in Dhankuta district.

Similarly, the government has also developed Special Economic Zones (SEZs) to cater to export-oriented industries. Industries that operate in SEZs are eligible for 50% tax exemption for the first five years. In addition, company registration, tax registration, banking, insurance, freight forwarding, issuance of a certificate of origin for export, and other administrative formalities are provided in these zones through a one window service. The SEZ in Bhairahawa of Western Development Region is currently operational and other prioritized SEZs include Biratnagar, Simara, Panchkhal, Gorkha, Jumla and Dhangadhi.

2.3 Access of transportation

The main road access points from India to Nepal are Raxaul-Birgunj (Parsa district), Sunauli-Belhiya, Bhairahawa (Rupandehi district) in the Central Region; Jogbani-Biratnagar (Morang district), Pani Tanki-Kakarbhitta (Jhapa district) in the Eastern Region; and Jamunaha, Nepalgunj (Banke district), Mohana (Dhangadi district) and Gaddachowki (Mahendranagar district) in the Western and Far Western regions. There are several other smaller access points along the open border with India. The nearest sea port from Nepal is located in Kolkata, India.

Railway connectivity is virtually non-existent and the governments of Nepal and India have been working to extend cargo train services to the Inland Container Depot at Birgunj (Parsa district) in Nepal. Birgunj is the only rail-linked dry port with a gateway port as well as other Indian railheads. Biratnagar (Morang district), Bhairahawa (Rupandehi district) and Kakarbhitta (Jhapa district) are road-based dry ports.

2.4 Status of service sector in Nepal

Service is major industry in Nepal but people and companies are not very familiar with service products and service marketing. Most popular service sectors of Nepal are education, healthcare, finance, travel and tourism, communication, transportation, trading (wholesaling, retailing), construction, consultancy, social services, entertainment, legal and professional services, informal services, etc. Although service sector contributes 52% to the Gross Domestic Product, it lacks marketing perspective in Nepal. There is lack of marketing human resource and lack of awareness regarding the importance of marketing even amongst the educated people.

Nepal got membership of WTO in April 23, 2004 and has met obligations of various agreements like General Agreement on Tariffs and Trade (GATT), General Agreement on Trade in Services (GATS) and Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) held within WTO. Nepal has opened up foreign investment in 11 service sectors and 70 service sub-sector.

2.5 Assessing energy sector context

Nepal is presently facing an energy crisis of unprecedented proportions. As of 2015, Nepal has a total installed capacity of 886 MW. Despite a huge potential for hydro-electricity, Nepal has not been able to fully harness its water resource for energy generation purpose. As a result, electricity is available to only 70% of the population. The existing installed capacity, supplemented by net purchases from India, is inadequate to meet demand. Load shedding has thus become the rule of the day, with attendant economic consequences. In this context renewable energy development, both on-grid and off-grid, is a high priority program of the government that has been supported through the enactment of relevant policies and national plans to attract private sector participation. These include targeted subsidies and funding mechanisms; tax and duty concessions; and exemption of mini, micro hydro projects from royalties and licensing requirements.

Renewable energy is a high priority sector of the government, which has a goal of increasing the share of renewables from less than 1% to 10% of the total energy supply, and to increase the access to electricity from alternative energy sources from 10% to 30% within the next 20 years. Complementing these goals, the government plans to invest USD 1,076 million in renewable energy by 2020, which will include support for hydropower, solar PV and biogas technologies.

Several donor-assisted programs have been initiated in the past in the renewable energy sector many with follow on projects. However, most of them will be completed during 2011-12, and development partners are presently designing cooperation programs in consultation with government. The government's flagship Scaling-up Renewable Energy Program (SREP) initiative is expected to be a part of the larger program and add value to the overall renewable energy development of the country.

The shortage of power and frequent power outages has severely constrained the growth potential of the country. Nepal's power generation capacity of 706 MW, which is predominantly hydropower, is insufficient to meet growing demand and has led to over 14 hours of load-shedding in a day during the winter (low river flow) season. Nepal, which built its first hydropower plant in 1911 when the 500 kW Pharping was constructed, has an estimated technically feasible hydropower potential of 42,000 MW, but much of this very significant potential is yet to be developed.

2.6 Existing industrial framework

There is a huge gap between demand and supply industrial sector. The domestic construction industry is not geared up to meet the future demand. There is a need to bring new players into the field, both domestic as well as foreign. During the five-year period 2000—2005, of the NPR 937 billion allocated for roads (all categories) only NPR 814 billion was spent, leaving 13% of the budget unspent. Large time over-runs and cost over-runs are endemic in both national highway and state road projects. This is a major drag on efficiency.

The existing industrial framework is that projects are gradually getting larger and technology is changing fast. New projects require complex design and execution capabilities. There is, therefore, an urgent need to address these issues. The overall Indian construction industry, of which the road construction industry is a subset, is highly unorganized. There is no national record of the number of contractors, their background or capabilities. The present capability of delivery of India's construction industry is estimated at NRs. 3,1008 billion ($70 billion) per year. This works out to 12% of GDP. It is estimated that approximately 250,000 contractors provide

employment to about 31 million persons (about 10% of the total work force) directly or indirectly. There is an urgent need to build the capabilities of the contractors and workers. There has been a perceptible capacity building and growth of medium and small contractors in the past few years. The trend for large contractors, however, has remained somewhat unpredictable.

Of the above numbers, it is reported that only about 25,000—30,000 firms form part of the formal sector, of which about 800—1,000 firms can be called medium to large in employment terms, i.e. they employ more than 200 persons. The construction companies in India are building up gradually. A decade ago only 22 companies were qualified to work on medium-sized road construction projects. The number has gone up since then. On national highway projects and big state highway projects under way, about 60 contractors, Indian and foreign, are working. Many form joint ventures (JVs) and consortia among themselves to take up all medium to large contracts in the country, with insufficient capacity to handle them. This is clearly visible from the delays and cost over-runs in projects. Poor quality is also witnessed in some cases.

Though the relevant legal framework in the country is reasonably sound, there is a long-felt need to streamline the system in order to more expeditiously respond to the ever-increasing demands on the judiciary. The construction industry operates under a large number of civil laws and this needs simplification. In several foreign countries (for example Singapore and China) there is a single construction law governing the industry. There is a move to bring in a construction law in India also. Dispute resolution mechanisms need to be strengthened, as the intermediate mechanisms (like dispute resolution boards or adjudicators) are virtually ineffective and almost all disputes are referred to the courts, with resolution taking three to five years.

The present contract procedures and requirements need major modifications, as they do not encourage incorporation of technological, labor and other major innovations. It is estimated that the total cost of designs, procurement, monitoring and supervision comes to about 20% of the cost of the asset created (government agency and non-government costs). Also, there are loopholes in the evaluation criteria. There are quite a few issues related to contract management, working environment and the construction industry itself. Any investment in construction leads to a spurt in the activities of ancillary industries. Construction activities contribute to almost one third of the projected GDP growth. As construction activity increases, it stimulates increased output from the manufacturing sector and a very substantial increase in employment.

2.7 Existing regulatory framework

2.7.1 Industrial Enterprises Act, 2016

The Industrial Enterprises Act, 2016 was recently promulgated for the industrial development of Nepal. The salient features of the Act are as follows:

- Industries have been classified into eight categories; manufacturing, energy, agro and forest, mineral, tourism, service, information and technology, and construction.
- A license is required only for specified industries and registration with the Department of Industry is compulsory for all industries. Industries can commence operations only after obtaining an EIA or IEE, as applicable.
- Industries are classified as either ‘cottage industries’ (traditional industries using specific skills and local raw materials), ‘small industries’ (fixed assets investment up to NPR 100 million), ‘medium industries’ (fixed asset between NPR 100–250 million), and ‘large industries’ (fixed assets of more than NPR 250 million).

- Medium or large industries and cottage and small industries whose annual turnover exceeds NPR 150 million are required to allocate 0.5% of annual turnover to corporate social responsibility activities.
- There shall be no nationalization of privately-owned industrial enterprises.

2.7.2 Foreign Investment and Technology Transfer Act, 1992

The Foreign Investment & Technology Transfer Act, 1992 was promulgated to promote foreign investment in Nepal and to address matters relating to foreign investment and technology transfer. Under this Act, foreign investors are permitted to own up to 100% equity shares in a company in Nepal, except in those industries listed in the negative list in the annex to the Act. Technology transfer is permissible even in areas where foreign investment is not allowed. In order to make foreign investment in Nepal more attractive, the Government of Nepal is in the process of amending the Foreign Investment and Technology Transfer Act to streamline the approval process and include additional sectors for foreign investment, as proposed in the Industrial Policy, 2010.

2.7.3 Investment Board Nepal Act, 2011

The Investment Board Nepal (IBN) was established in 2011 to mobilize investment through public-private partnerships, as well as by foreign and domestic private sector investors. It was set up to promote Nepal as an investment destination in order to achieve greater economic development by accelerating the process of industrialization and by creating employment opportunities. In principle, industries having fixed capital of more NPR 10 billion come under the purview of IBN. Under the Investment Board Nepal Act, IBN shall negotiate concessions, formulate investment policies, select competitive or priority sectors from the sectors of investment, select projects for possible investment, monitor whether the construction, implementation or operation of the project is running as per the agreement related to the investment and form any expert committee or taskforce needed.

2.7.4 Labour Act, 1992

Labour Act (1992) and Labour Rules (1993) apply to any establishment employing 10 persons or more. They deal with matters relating to employment and the security of employment, working hours and minimum wages, the welfare of employees, employer-employee relations and the settlement of labour disputes. The Act specifically, spells out minimum wages, working hours and overtime, gratuity, provident fund and staff welfare fund, dispute settlement, bonus and labour union provisions.

The Act has ensured the right to appropriate labour exercise. This Act further mentions that Nepali citizens should engage on work. to determine the working hours/maintain standards of agreement based on workers/employee, temporary or permanent staff ensuring minimum wage; salary increment and make proper arrangements of health and safety of workers and employees.

2.7.5 Bonded Labour (Kamaiya) Prohibition Act, 2002

Bonded Labour (Prohibition) Act, made the perpetuation of the labour system punishable but fails to address the core issues of unemployment, access to and control over resources and proper rehabilitation. Freedom without alternative means of survival and economic empowerment,

including the right to work, reverted to a new form of exploitation of the ex-Kamaiyas. They became bonded under a new phenomenon of unemployment and deprivation.

2.7.6 Foreign Employment Act, 2007

This Act is enacted in 2064 BS replacing the previous act of 2042 BS to protect the right of Nepali migrant workers going overseas. It has a comprehensive provision of safe departure, pre-departure training, insurance, minimum wage, skill training, foreign employment welfare fund, individual migration, etc. Protection of children and non-discrimination between man and women is one of the significant provisions enshrined in this Act.

2.7.7 Plans/policies

The Government of Nepal has envisaged safeguarding the rights, interests and social security of laborers; consolidating and managing labour market information and produce skilled manpower; create an environment to get employment opportunities in foreign labour markets. Amending labour related provisions in line with the ILO labour standards, promoting harmonious relations between labours and industries, organizing vocational training, ensuring employment through managing information on labour market, and extending loan assistance to low income groups are some strategies to implement objectives of the Plan.

It has devised five policies to achieve objectives, which include (i) effectiveness of labour administration; (ii) promotion of harmonious industrial relations; (iii) conduction of vocational and skill development training programmes; (iv) encouragement to foreign employment; (v) and policy reform. The National Steering Committee Status on Child Labour has been established under the chair of the Secretary of the Ministry of Labour and Transport Management to develop policies/programmes, inter-sectoral coordination and monitoring activities related to child labour. Again, the government has authorized respective District Coordination Committee (DCC) to determine minimum wage of workers. DCCs are empowered to determine the wage of agricultural workers on the basis of seasons and nature of work. At present, the wage of agricultural workers has been determined at NPR.70 per day as minimum wage.

The 2006 Labour and Employment Policy replaced the 1999 Labour Policy. Its long-term objective is to create a favourable investment climate by enhancing workforce productivity, generating decent and productive employment opportunities, and ensuring worker rights. The policy also highlights the importance of generating additional jobs by setting up special economic zones and export-oriented industries. The policy also seeks to increase access to employment for women, *Dalit*, *Janajati* and people displaced by conflict and to eradicate child labour.

2.8 Stakeholder consultation and analysis

A comparative analysis was done between Nepal-based companies/firms who can provide full and fair opportunity to access the proponent's requirements for goods and services. This was done to evaluate the synergies and complementarities, and to eventually identify additional sectors, keeping in mind the potential of these sectors to facilitate all requirements of pre-construction activities, main project construction works, itemization and quantification of goods (major items) and technical standards.

Managing the risk of operating hydropower projects requires a high degree of knowledge in order to improve reliability, recognize potential failures and understand the associated consequences.

There is a need for importing hydropower equipment because they are not manufactured in Nepal. A key advantage for machine manufacturers and suppliers is the opportunity to export machinery duty free to Nepal.

2.8.1 Industry Associations

The Independent Power Producers Association of Nepal (IPPAN) is a non-profit, non-governmental organization which was established in 2001 to encourage private sector participation in hydropower development in the country. IPPAN serves as a link between the private sector and government organizations involved in developing hydropower, and helps in the exchange of technology, expertise, knowledge, financial and management information among the independent power producers in the country.

The mini and micro energy sector is supported by several industry associations that include Nepal Micro Hydro Development Association, Solar Electrical Manufacturers' Association of Nepal, Nepal Biogas Promotion Association, and Biogas Sector Partnership - Nepal (BSP-N). In addition, the Federation of Nepalese Chamber of Commerce and Industries (FNCCI), and Confederation of National Industries (CNI) serve as umbrella organizations with a mandate extending beyond renewable energy technologies.

Nepali manufacturing sector is highly unorganized and fragmented. Many of the medium and large firms are still family owned and lack professional management and work culture. While small and medium companies have mushroomed in the recent past, large companies have not grown at the same rate either in size (turnover) or number. According to the Industrial Statistics Report of the Department of Industry (2012), only 7 industries have been registered in Rasuwa district. Consequently, from the national level, there are only few companies/industries to choose from, only about 30-35 industries operational in the country. Again, often these companies form joint ventures or consortia among themselves to qualify for most of the medium and large contracts in the country.

Subsequently, these contractors suffer from insufficient capacity; the result is time and cost overruns, related disputes and poor quality. As such, there is a critical need for reversing the slow growth of the large contractors and for enhancing the capacity of all sizes of contracting and consulting firms. Symptoms of capacity constraints in both quantity and quality are also evident from the fact that most of these firms would take more time, which highlights a severe lack of capacity. Time and cost overruns much above the original estimates also point to capacity constraints and poor use of the existing capacity to deliver supplies on time.

Keeping in mind the existing industrial landscape, an effort has been made to summarize the key issues and perceptions of various industry stakeholders (Table 2) emanating from the stakeholder consultations conducted in Battar and Kathmandu in December 2017.

Table 2: Summary of findings from consultations

Stakeholder segments	Key issues
Manufacturing companies	• Lack of information about UT-1 HEP goods and services requirements • Difficulty in transporting goods and supplies in the project area because of poor road condition in dam site and powerhouse • Lack of skilled manpower • Increasing prices of key inputs such as cement, iron and steel • Unavailability of skilled manpower at various levels • Unavailability of adequate raw materials and price hike
Professional business organizations (FNCCI, CNI, etc.)	• Serious constraints in availability of skilled personnel and semi-skilled/unskilled labor • Lack of technical know-how • Ineffective dispute resolution process • Unavailability of adequate industrial materials; price escalation not fully compensated • Unavailability and cost of long-term debt • Double taxation of dividends
Equipment suppliers	• Unavailability of spare parts for equipment • Pricing competition from foreign companies • High import duty/freight charges on equipment sourced from abroad • Availability and retention of quality/trained manpower • Lack of information about UT-1 HEP industrial requirements • Inability to transport goods to the project area because of highly poor road condition
Material, goods and services suppliers	• Lack of information about UT-1 HEP industrial requirements • Inability to transport goods to the project area because of highly poor road condition • Issue with quality standards of raw materials • Inadequate capacity to supply higher quantities at competitive prices • Increasing prices of key inputs such as cement, steel affect contractors/developers

CHAPTER 3: BENEFITS APPROACH, PRINCIPLES AND PROCEDURES

Upper Trishuli-1 HEP is embarking on a period of significant capital investment for the operationalization of the hydropower project. These capital investments are required to reduce the risk associated with availability and reliability of the supply of power to acceptable levels. This section describes NWEDC's approach and principles respecting national benefits, and procedures through which it will implement these principles.

3.1 Approaches and principles

The UT-1 HEP's benefits is driven by its commitment to develop industrial and human capacity and deliver sustainable strategic benefits to benefit Nepali industries and suppliers of goods and services. Based on the industrial benefits context and input from stakeholder consultation, the Industrial Benefits Plan has established the following benefits principles which underlie this Plan and will govern all of its benefits-related activities:

- Meeting local benefits commitments while maintaining the highest levels of safety, environmental performance, efficiency and integrity;
- Selecting contractors and suppliers that will work diligently to deliver benefits to the Nepali suppliers and local people respectively;
- Promoting the development of local skills and capability that leaves a lasting legacy benefiting the people;
- Delivering best-in-class return on investment for stakeholders; and
- Working collaboratively with service providers, community and other stakeholder groups for the effective delivery of benefits.

It is expected that the contractors develop a benefits culture within all contracting companies to fulfill its objective of promoting a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements for goods and services for the project. The industrial benefits culture is the product of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determine an organization's commitment to, and the style and proficiency in, delivering industrial benefits.

Using approaches similar to those used in developing a safety culture, this will be driven by the project management and main contracting companies, and see benefits considerations, including diversity considerations, being inherent to business processes and practices, rather than a separate consideration.

This approach will help in ensuring full and fair opportunity of access for Nepal-based suppliers of goods and services to meet project requirements and contributes to meet competitive price both in quality and adequate quantity. This requires that the project fully satisfy the benefits principles relating to maintaining the highest levels of safety, efficiency (including through synergies with other contractors) and integrity and delivering execution certainty and working collaboratively with manufacturers and suppliers of goods and services to benefit from their expertise and capabilities.

3.2 Engaging domestic producers and suppliers

Upper Trishuli-1 HEP is expected to constantly engage with the Nepali market actors such as multinational companies, business intermediaries and interlocutors such as the Chambers of Commerce and Industries, small and medium enterprises, mutual organizations such as banks, insurance and healthcare companies, private and state-owned enterprises. In deepening engagement of Nepali manufacturers, producers, suppliers, distributors and vendors, NWEDC shall adopt the following measures:

- Establish a portfolio of at least one major "signature alliance" or partnerships with the Nepali private sector entity that demonstrate clear evidence of how collaboration can advance supply and demand gaps in adherence to the quality compliance standards;

- Conduct at least one annual interaction programme with key domestic suppliers to help them understand the timing, quantity and quality requirements for goods and services;

- Provide timely access to information about the project requirements of goods and services;

- Designate an Industrial Benefits Officer who shall coordinate with domestic suppliers on opportunities to meet mutual needs; and

- Encouraging joint ventures between local and foreign suppliers to enhance knowhow transfer.

3.3 Suppliers' code of conduct

NWEDC is committed to sustainable, ethical practices in compliance with the applicable laws, conventions and regulations. Maintaining integrity in dealings with partners, contractors and the project affected people is an indispensable part of the project's working culture and essential to maintaining high morale and producing fair, reliable and innovative products and services. With its core objective to ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project development, the project adheres to policies and procedures that protect human rights and strives to develop appropriate, environmentally and socially sustainable chains of responsibility and response mechanisms within its sphere of influence.

All suppliers shall ensure that they comply with this code of conduct in their operations throughout the supply chain and shall immediately inform the project of any detected neglect of the principles set out in the code of conduct anywhere along the supply chain. In addition, the supplier must also, upon request, provide the project with information on compliance with the code of conduct.

The supplier shall provide smooth supply of quality goods and services to the project at fair price with merchandise of specified weights and standards without any adulteration. The supplier shall settle business disputes through mutual consultations in an amicable and lawful manner. If the project observes that the supplier has not complied with the code of conduct, the project shall provide compliance support in those aspects that need improvements. The project also reserves the right to cancel previously confirmed orders or to terminate its agreement with the supplier if the situation so requires.

3.3.1 Compliance requirements

The project contractors shall comply with all applicable national laws of operations or applicable to the manufacturing of goods or delivery of services, including, but not limited to those laws relating to working conditions, human rights, health and safety and environment. All companies and suppliers of goods and services, regardless of their place of operation, shall meet a consistent set of minimum performance standards related to human rights and fair workplace practices.

3.3.2 Performance standards

The following performance standards represent the minimum standards for all vendors/suppliers of UT-1 HEP. These standards are organized into three categories:

1. Social standards—pertaining to working conditions in both supplier and sub-contractor facilities;
2. Environmental standards—pertaining to environmental impacts related to operational practices of both suppliers and sub-contractors; and
3. Management standards—pertaining to the management of operations by suppliers.

The project contractors shall work with suppliers that provide consistent and continuous focus on protecting the health, safety and welfare of workers and minimizing their operational impact on the environment as per the IFC performance standards. There is an expectation of continual improvement with respect to environmental and fair workplace practices.

3.4 Operationalizing private sector enterprises

Creating a congenial environment for potential eligible construction companies/ suppliers/ service providers in UT-1 HEP area has an important role in providing the foundation for sustained strong economic growth. Growing economic activities will contribute to generating employment opportunities in the area for many years to come. The challenge, therefore, is to promote a vibrant, growing, competitive supplier base that shall meet higher value-added requirements for goods and services for the project.

Construction industry in Rasuwa and its adjoining districts has entered a period of expansion in recent years, especially after the April 2015 earthquake which has sharply increased building construction in the earthquake affected districts. The impact of this recovery in construction activities has been substantial. Strong growth in construction is anticipated in the near term as a result of the ongoing build-up of the donor rehabilitation programs. However, the prospect of a large increase in employment of skilled, semi-skilled and unskilled personnel in the construction industry does raise a range of issues related to skill development and, in the case of skilled trades such as electricians, appropriate certification standards and licensing.

A range of possibilities for the Nepali manufacture and or assembly of construction materials bears further investigation, including fabrication of steel and cement products, various building materials and fixtures, and road construction materials that draw on the non-metallic mineral resources of the country. Recent experience with the donor-funded roads programs, for example, suggests that Nepal has substantial supplies of materials that are needed for the foundations of highways that are being rehabilitated. The potential for increasing these local sources of supply should be investigated further as these will help contain the capital cost and will also create

additional employment opportunities. A list of existing Nepali firms, agencies, vendors and suppliers engaged in UT-1 HEP is provided in Annex 4.

3.5 Procurement principles and contracting

In implementing the Nepal Industrial Benefits Plan, NWEDC shall ensure to develop a consolidated procurement plan with designated details to enable appropriate consideration and approval for proposed procurement activity. Contract management in procurement shall include analysis for the purpose of driving and maximizing financial and operational performance and minimizing risk in the procurement process, usually commencing with a tender and selection of a supplier, pricing and negotiating the terms and conditions. It can be summarized as the process of systematically and efficiently managing contract creation, execution, and performance as part of the procurement life cycle.

NWEDC will seek to ensure that contracting companies and service providers have a full and fair opportunity to compete for the project work, and that first consideration is given to goods manufactured in, and services provided from within Nepal where they are competitive in terms of quality, fair market price, quantity and delivery.

NWEDC views the procurement process and associated responsibilities as extending from the development of the procurement strategy, through the sourcing process, contract initiation and implementation and performance management, to contract close-out or renewal. Benefits, including diversity, will be an important consideration at each stage and NWEDC will ensure that its procurement activities address the requirements of the existing GoN regulations.

NWEDC shall adopt the following procurement principles:

Table 3: Procurement principles

SN	Procurement Principles
1.	***Best value for money*** ensures competition by wherever practical seeking competitive tenders and quotations. Does not imply that the lowest quotation be always selected.
2.	***Open and effective competition*** all processes are to be transparent, subject to the highest levels of probity and are subject to internal and external audit.
3.	***Enhancing where possible the capacity of local business and industry*** All potential local providers of goods and services are given the opportunity to participate in the quotation and tender process.
4.	***Environmental protection*** adopting practices to promote and protect the environment and minimize environmental harm. This includes paying due consideration to energy efficiency and sustainability.
5.	***Ethical behaviour and fair dealing*** All dealings are undertaken with impartiality, fairness, independence, openness, integrity and professionalism.

3.6 Vendor selection and inspection

Vendor selection is a key strategic issue over the life of the project. The selection process must involve key members of the management team. The vendor selection process covers the entire vendor-buyer relationship, from vendor selection to onboarding and performance measurement,

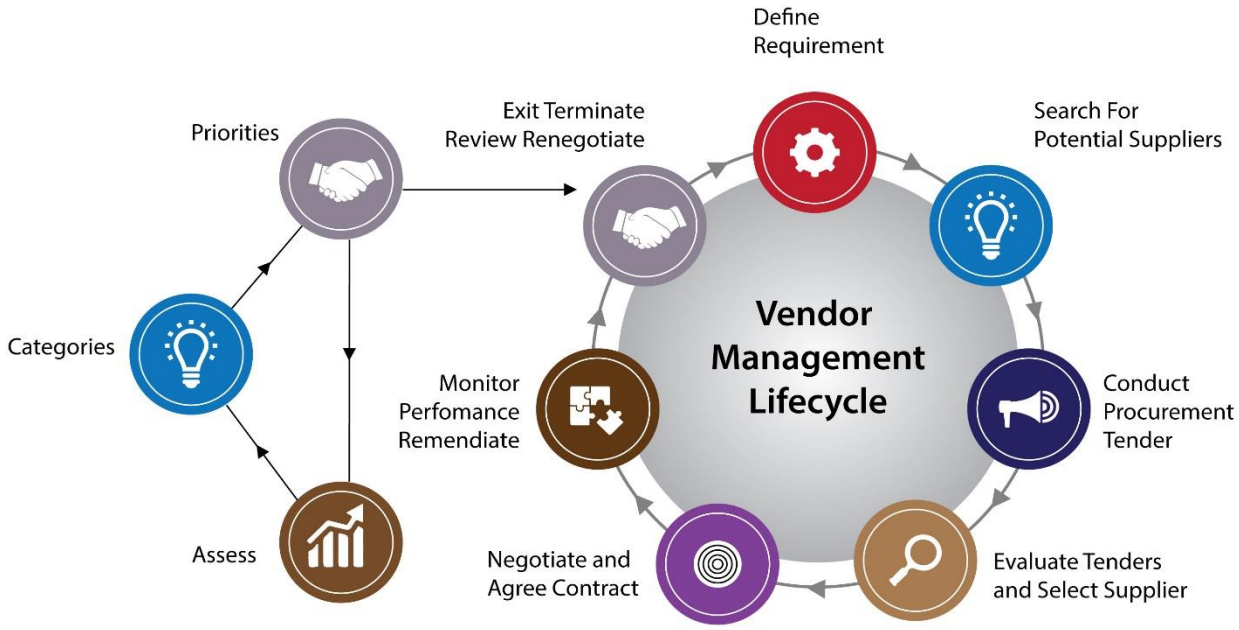
and finally ends with the offboarding process (Figure 3). The main objective of the vendor selection process idea is to ensure vendors are a good match for the buyer before actually entering into a business relationship. The vendor selection process itself also has several important steps: vendor self-evaluation and qualification, product qualification and site visit.

The construction of UT-1 HEP will attract a lot of business opportunities as both mechanical and electrical engineering industries supporting the plant will come up in near future. It will create a strong vendor base down the line which will feed the main companies doing maintenance works for hydroelectric plant. Similarly, various indirect benefits also appear which may be availed by the industries such as hospitality, banking, transporters, raw material suppliers, insurance, civil aviation, tourism etc.

Vendor Inspection involves inspecting items at their place of manufacture before delivery. This is the most convenient and cost-effective way to determine whether a product, service, process piece of equipment or installation complies with expressed needs, applicable regulations or other requirements. Vendor inspection can include design review, review of material certificates, visual inspection, various supervision or performance of mechanical or functional tests.

In most of the project's requirements like explosives, drilling machines, turbines and steel products, automotive and metallurgical equipment, it involves the purchase of a vast number of items supplied by different manufacturers out of Nepal for which quality and safety are key for the project. Hence, it is of vital importance to check through in-factory inspection the quality of every single item, no matter how small. These items range from raw material to finished products. As some indication of the diversity of items concerned, they can include pipes and tubes, equipment ranging from valves and faucets to motors, engines for anything from lifting equipment to elevators, electrical and electronic devices.

Figure 3: Vendor management cycle



3.7 Key Nepali suppliers of goods and services

Given the capabilities available from the below listed companies and the range of other firms in the country, certain project goods and services are available from within Nepal's industrial corridors such as Biratnagar, Birgunj, Chitwan, Hetauda and Kathmandu. However, it should be noted that certain of the requirements are manufactured and sourced from India. This includes power generation, utility, process and drilling equipment, and bulk materials. Nepali companies represent some of these manufacturers, hence providing the opportunity for supply of goods during the construction phase as well as providing after-sales service and repair.

In view of the existing capacity, Nepali companies are self-reliant in producing/ supplying a range of goods and services, *viz*., bricks and cements, aggregates, iron and steel bars, prefab materials, catering services, groceries/frozen foods/fresh vegetables, ancillaries consumption items, electronic and electrical appliances, fittings and fuel, oxygen cylinders, hospitality, transportation services, providing legal, managerial, banking and other professional consulting and maintenance services, etc. However, it remains to be seen whether they have the capacity to provide such products and services in competitive price, quality and adequate quantity. For high-end supplies, the project has to rely on external market for the procurement of turbines, generators, explosives, transformers, electrical equipment, pumps, piping and valves, hoists, lubricants, drilling machines, graders, broomers, compressors, air circulators, safety equipment, transit mixtures, excavators, dumpers, hydraulic scaffolding and other electro-mechanical equipment etc.

Certain bulk materials, as stated above, are not manufactured in Nepal, and hence will need to be supplied by foreign manufacturers, subject to competitive bidding processes. There are suppliers based in Kathmandu and other parts of Nepal that act as agents/distributors or stockists for manufacturers, and these suppliers could be involved in the supply during the construction phase. If they are successful in supplying these materials during that phase, they will be well positioned to also provide them during operations. In many of these cases, local businesses add value through the provision of transportation, logistics, warehousing, assembly or batching services. Where these types of services or modifications are required, contractors and suppliers may choose to establish sub-offices in the project site. The actual level of local procurement for the required goods and services will depend on the bidding competitiveness of the local industry.

The project's supply chain approach rests with the delivery of integrated products and services throughout the project life cycle by attracting a wide range of qualified Nepali vendors and achieving competitive pricing with quality, adequate quantity, safety, social and environmental safeguards. Table 4 below presents a list of 75 Nepal's potential industries/manufacturers, goods and service providers who could be potentially involved in meeting UT-1 HEP's construction phase material and service requirements.

Table 4: Potential commodity associations and HEP equipment suppliers of Nepal

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
1.	Nepal Steel Rolling Mills Association	1st Floor, Mathuri Sadan Ravi Bhavan Kathmandu, Nepal Tel: +977 1 4671200 or 4671201 Fax: +977 1 014111823 / 4287041 9851050611	Shahil Agrawal Managing Director	Supplier of all types of iron bar and steel fabrication materials
2.	Nepal Aggregate & Sand Suppliers' Association (Crusher Udhyog Mahasangh)	Koteshwar-34, Kathmandu, Nepal Cell: 9843373255	Umesh Serchan	Nodal body to supply aggregates in large quantity
3.	Nepal Engineers' Association	Nepal Engineers' Association Pulchowk, Lalitpur, Nepal Tel: 01-5010251 / 5010252 Fax: 01-5010253 Cell: 9851066908 Website: http://www.neanepal.org.np Email:nea24@mail.com.np, info@neanepal.org.np	Hare Ram Shrestha	Pool of engineering expertise; high quality human resource in civil, electrical and mechanical field
4.	Cement Manufacturers Association of Nepal	Teku, Kathmandu, Nepal Tel: 01-4100006 / 01-4436328; Fax:01-4100005	Dhruba Raj Thapa	Nodal agency to supply high quality cement in large quantity
5.	Independent Power Producers Association of Nepal (IPPAN)	Independent Power Producers Association Nepal (IPPAN) PO Box 20010 Heritage Plaza II, Kamladi, Kathmandu, Nepal Tel: 4169175; Fax: 416975 Email: info@ippan.org.np	Pashupati Dhungel Executive Manager	Link between private sector developers and government organizations; exchange of technology, expertise, knowledge and technical assistance

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
6.	Construction Material Dealers Association	New Baneshwar, Kathmandu, Nepal Cell: 9851005827	Manik Ratna Tuladhar	Supplier of all types of construction materials, *viz*, cement rods/bars
7.	Customs Agent Federation of Nepal	Babarmahal, Kathmandu, Nepal Cell: 9851022112	Jai Prasad Siwakoti	Customs clearance and freight forwarding
8.	Federation of Contractors Association of Nepal	Anamnagar, Kathmandu, Nepal Tel: 01-4218187/4218159/4221611 Fax: 014218231 E-mail: fcan@wlink.com.np web: www.fcan.org.np	Sharad Kumar Gauchan	Nation-wide contractors' facilitation; linkages to all industrial materials and supplies
9.	Federation of Electrical Entrepreneurs of Nepal	Bhotebahal, Kathmandu, Nepal Cell: 9855055277	Tej Narayan Kharel	Leading supplier of all types of electrical and electronic appliances
10.	Federation of Forest Based Industry and Trade, Nepal	Thapathali, Kathmandu, Nepal Cell: 9851001567	Shyam Sundar Dhakal	Supplier of wood and forest based products
11.	Federation of Nepal Brick Industries	Patan, Lalitpur, Nepal Cell: 9851033467	Mahendra Br. Chitrakar	Supplier of all types of mud and stone bricks
12.	Nepal Hydro & Electric Limited	BPC Complex Ganga Devi Marg 313, Buddhanagar, Kathmandu Tel: +977-1-4781776, 4785295 Fax: +977-1-4780994 URL: http://www.nhe.com.np	Bijay Bahadur Shrestha	Hydro-mechanical and electro-mechanical equipment; HV sub-station and heavy steel structures
13.	Jagadamba Steel Industries Pvt. Ltd.	Chorani, Birgunj, Nepal Tel: 051-520300 / 520200 Fax: 977-51-521778	Sulav Agrawal Managing Director	Thermax TMT bars, iron rods; steel products and stainless steel
14.	Sanima Hydro and Engineering Pvt. Ltd.	Shankha Park, Dhumbarahi, Kathmandu, Nepal P.O.Box-19737 Tel: 01-4372828/4373030/4015788 Fax: 01-4015799 Email: sanima@sanimahydro.com	Arun Kumar Ojha	Construction monitoring, testing, operation and maintenance

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
15.	Jyotishree Nepal Pvt. Ltd.	PO Box 2829; Radha Bhawan, Tripureshwor, Kathmandu, Nepal Tel.: 4244010 / 4254568 / 4263718 Fax: 4263694 / 4220494 Email: info@jyotishreenepal.com		Leading importer and supplier of complete range of construction materials, power, pneumatic and hydraulic tools, pumps, safety gears, tackles, spares and equipment
16.	Reliance Group	Bagmati Chambers Teku, Kathmandu, Nepal P.O.Box- 10905 P: +977-1-4227237 / 4227831 F: +977-1-4246788 / 4230360 E: info@reliancegroupnepal.com	Narayan Todi Piyush Kumar Todi	Authorized distributor of Jaypee Cement OPC 43/53 grades required for HEP
17.	Cream Hydel Pvt. Ltd.	PO Box 88; Tilotamma-2, Butwal, Rupandehi, Nepal Tel.: +71438671/438672/438673 Fax: +71438670 Email: chydel@wlink.com.np	Diwan Singh Thapa	Hydraulic jack, pneumatic grinding machine, chain pulley, measuring instruments, vee-lever, hand drill/radial/ magnetic/ lathe machine, portable sand blasting machine
18.	Nepal Oil Corporation Ltd.	Babarmahal, Kathmandu, Nepal PO Box 1140 Tel.: 4262780; 4263481; 4263482 Fax: 4263499 Email: nepaloil.com.np	Gopal Bahadur Khadka Managing Director	Fuel supply – patrol, diesel, gas
19.	Goods Transport Association of Nepal	Balkhu, Kathmandu, Nepal Tel: 01-4286312	Riddhi Bahadur Singh	Country-wide trucks and goods transportation service

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
20.	Air Dynasty Heli Services	PO Box 10112 Sinamangal, Kathmandu, Nepal Tel: 4497464 Cell: 9801089842 Email: assistance@airdynastyheli.com	Rameshwar Thapa	Medical evacuation and rescue; air cargo services
21.	Federation of Truck Transport Association of Nepal	Sanepa, Nayabato, Lalitpur Tel: 5531052; 5541078 Fax: 5531005 Email: info@ftten.org.np	Arjun Ranabhat President Cell: 9857025006	All types of goods carrier from all over Nepal
22.	Kedia Organization	PO Box 20; Alkhiya Road; Birgunj, Nepal Tel: 051-522092/522297 Fax: 051-522086 Email: kedia@atcnet.com.np	Managing Director Hira Lal Kedia	Cement and agro-industries; iron and steel fabrication; home supplies, dairy and food processing; textiles and furnishings
23.	Shivam Group	Shivam Cements Ltd. Anamnagar, Kathmandu Tel: 014259804 Fax:014249854 Email: info@shivamcement.com	Surendra Goel Chairman	43 grade OPC cement
24.	Nepal Bankers' Association	Central Business Park Thapathali, Kathmandu, Nepal Tel: 01-410542; Fax: 01-4101540 Email: nba@nepalbankers.com.np	Anil Shah President	Provides coordinated support in developing fair and healthy competition amongst commercial banks in Nepal
25.	Nepal Bar Association	Ramshah Path, Kathmandu, Nepal Tel: 01-4254647; Fax: 01-4218049 E-mail: neba@wlink.com.np	Sher Bahadur KC President Cell: 9851063153	Federal organization of practicing lawyers
26.	Nepal Chamber of Commerce	Rajesh Kaji Shrestha	01-4001039	
27.	Institute of Chartered	Satdobato, Lalitpur, Nepal PO Box 5289 Tel: 01-5530730 / 5530832; Fax: 01-5550774	Mahesh Khanal President 9851027899	Autonomous body to undertake

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
	Accountants of Nepal	E-mail: ican@ntc.net.np; Web: ican.org.np		accountancy profession in Nepal.
28.	Federation of Nepalese Chambers of Commerce and Industries (FNCCI)	Milan Marg, Teku, Kathmandu, Nepal PO Box 269 Tel: 01-4262061 / 4262218; Fax: 01-4261002 Email: fncci@mos.com.np	Ms. Bhawani Rana	Umbrella organization of business in Nepal organized as a representative body of business houses representing interests of private sector in Nepal
29.	Confederation of Nepalese Industries (CNI)	Trade Tower, Thapathali, Kathmandu, Nepal PO Box. 21056 Tel: +977-1-5111122/23, Fax: +977-1-5111125 E-mail: cni@wlink.com.np Web: www.cnind.org, www.investnepal.gov.np	Narandra Kumar Banet President	Encourage positive competition and competent management among industries, promoting domestic/ foreign investment, & creating job opportunities in the country's industrial and corporate sector
30.	Society of Consulting Architectural and Engineering Firms Nepal (SCAEF)	Buddhanagar, Kathmandu, Nepal GPO Box: 1513 Tel: 01-2290152; Fax: 01-4783952 Email: scaef@wlink.com.np, scaefnepal@gmail.com Web: www.scaef.org.np	Rajesh Thapa	Federation of Nepalese experts providing consulting services in large scale projects through joint ventures
31.	Management Association of Nepal	PO Box No. 3032, Kamaladi, Kathmandu, Nepal Tel: +977-1-4224475 Fax: +977-1-4240475 Email:man@man.org.np managementassociationofnepal@gmail.com	Sushil Bhatta 9851270993 (Yadav Poudel)	Facilitate management development process directed towards performance-oriented work systems, culture and practices through interactions, services and networking

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
32.	Nepal L.P. Gas Industry Association	Teku, Kathmandu, Nepal Tel.: 01-4229057; Toll Free: 1660-01-42290 E-mail: lpgnepal@gmail.com Web: www.lpgnepal.com	Shiva Prasad Ghimire President	National nodal agency to supply liquified petroleum gas (LPG)
33.	Rubicon International Trade Links Pvt. Ltd.	Lazimpat, Kathmandu, Nepal PO Box: 826 Tel: 00977-01-4428262 / 9803828551 Web: www.rubiconinternationaltradelinks.com	Ashok Pradhan	Leading supplier of industrial raw materials and chemicals
34.	Nepal Life Insurance Company Ltd.	Nepal Life Insurance Company Ltd. Heritage Plaza, Kamladi, Kathmandu, Nepal Tel: 01-4169082; Fax: 01-416079 Email: info@nepallife.com.np	Vivek Shah Chief Executive Officer vivek@nepallife.com.np	Provide life Insurance to people to secure healthy and prosperous family
35.	Reliance Spinning Mills	Biratnagar. Morang, Nepal Tel.: 01-4241504	Sashi Kant Agrawal	Steel fabrication and corrugated sheets
36.	Golden Battery Industries Pvt. Ltd.	Biratnagar. Morang, Nepal Tel.: 021-527345	Nikunja Agrawal	Supplier of all types of high-powered battery
37.	Guransh Engineering	Balaju, Kathmandu, Nepal Tel: 4244352	Moti Lal Dugar	All types of hydraulic engineering services
38.	Rajesh Metal Crafts Limited	Bagmati Chamber, Teku, Kathmandu, Nepal Tel: 4230949 / 4231080 / 4245709	Rajesh Kumar Agrawal	All types of hardware and metal craft supplies
39.	Vishwa Vinayak Construction Company Pvt. Ltd.	Tripureswor, Kathmandu, Nepal Tel: 01- 4261160	Vishnu Kumar Agrawal	All types of housing and apartment builder
40.	Atlas De Cargo	Bhatbhateni, Kathmandu, Nepal Tel: 01-4445666	Sushil Gupta	All types of cargo service
41.	Fishtail Air Pvt. Ltd.	Tinkune, Kathmandu, Nepal Tel: 01-4112230 / 4112206 / 4112217	Suman Bikram Pandey	Helicopter service
42.	Hulas Wire Industries Pvt Ltd.	Golchha House, Ganabahal, Kathmandu, Nepal Tel: 01-4250001	Diwakar Golchha	All types of electrical wires and accessories
43.	Trikon Advertising Service	Sano Gaucharan, Kathmandu, Nepal 01-4411303 / 4248030	Rajendra Aryal	Media advertising

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
44.	Export Council of Nepal (ECON)	Thamel, Kathmandu, Nepal Tel: 01-4441337	Arjun Kumar Bhattarai	Facilitate in exporting and importing goods and services in Nepal
45.	Nepal Clinker and Cement Manufacturer's Association	Kathmandu Metropolitan City-11, Kathmandu, Nepal Tel: 01-4224074 (Ext. 622)	Purushotam Lal Sanghai / Satish Kumar More	Clinker processing and promotion for cement industries
46.	Federation of Small Medium Enterprises Nepal (FSMEs-Nepal)	149- Bijuli Bazar, Kathmandu Tel: 01-4783483	Jung Bahadur Shrestha	Promotion of small scale industries
47.	Nepal Herbs and Herbal Products Association	Teku, Kathmandu, Nepal Tel: 01-4264428	Govinda Ghimire	Processing and export of herbal products
48.	Advertising Agencies Association Nepal	Kupondole, Lalitpur, Nepal Kamal pokhari, kathmandu Phone: 4410128, Fax: 977-01-4420295 www.adnepal.org.np	Santosh Shrestha President	Umbrella organization for to provide advertising placements in Nepali media
49.	Courier Service Association of Nepal (COSAN)	PO Box 8973; Tinkune, Kathmandu Tel: 4111848; Fax: 977-1-4111848 Email: cosan848@gmail.com http://www.cosan.com.np	Rameshor Siwa President	Courier services throughout Nepal and abroad
50.	Nepal Goods Carriers Association	Teku (Opposite Everest Bank), Kathmandu Tel: 4218178, 4255619; Fax: 4243964 Email: kat@dooarstransport.com; ngca2036@gmail.com	Ritesh Lamichhane President	Nationwide goods carriage services
51.	Chemical and Medical Suppliers Association Nepal	Tripureswor, World Trade Centre, Kathmandu Tel: 4117134, 9851174618 Email: chemsannepal@gmail.com http://www.chemsan.org.np	Suresh Ghimire President 9851033265	Nodal agency to provide medical and health care facility
52.	Nepal Stationery and Education	Kantipath, Kathmandu Tel: 4430609, 4255687, 4429219 Fax: 977-01-4430892, 4423492	Ram K Poudel President	Wholesale supplier of stationery materials for office

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
	Material Industries Association	E-mail: pcc@wlink.com.np; poudelp06@gmail.com		
53.	Sipradi Trading Pvt. Ltd.	Naya Naikap, Kathmandu, Nepal Tel: 01-4311501/4311502; 9801575777 Email: sipradi@sipradi.com.np Web: sipradi.com.np	Siddhartha SJB Rana Chairman	Major player in Nepal's automotive and allied business; sole distributor of TATA vehicles, earthmovers, batteries & lubricants
54.	Hama Iron and Steel Pvt. Ltd.	PO Box 4667; Kamladi, Kathmandu, Nepal Tel: 977-01-4252602/4252645 Email: info@hamasteel.com	Bal Krishna Shrestha Chairman	Leading manufacturer of construction-grade steel and iron products in Nepal specializing in SD rebars, HB wires, wire rods and annealed binding wires
55.	Hilltake Industries Pvt. Ltd.	Balauju Industrial Estate, Kathmandu, Nepal Tel: 01-4388679/4388691/4389243 Email: hipl@hilltake.com.np	Kamal Jain Chairman	Complete services for plumbing services with products such as stainless steel water tanks, CPVC/PPR pipes, water purifier and pumps
56.	Morang Auto Works Enterprises Pvt. Ltd.	Tripureshwor, Kathmandu, Nepal Tel: 977-01-4261160	Vishnu Kumar Agrawal Managing Director	Supplier of MAN trucks, JCB, greaves, generators, construction equipment, readymade concrete plant
57.	CAS Trading House Pvt. Ltd.	New Plaza, Putali Sadak, Kathmandu, Nepal Tel: 977-01-4440271/4440272/4430858 Email: info@cas.com.np www.cas.com.np	Yogesh Lal Shrestha Chairman	CAS is a leading company engaged in providing total solutions in IT

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
				hardware, software, communications, support and total ICT solutions
58.	President Travels and Tours Pvt. Ltd.	PO Box 1307; Durbar Marg, Kathmandu, Nepal Tel: 00977-01-4220245/4221180 Email: info@president.com.np Web: pttnepal.com	Bhola B. Thapa President bthapa@president.com.np	Pioneer in air ticketing services for both domestic and international sector
59.	Nepal Pharmaceutical Association (NPA)	PO Box 5061; Babarmahal, Kathmandu, Nepal. Email: info@npa.org.np; npa.2028@gmail.com Web: npa.org.np	Shasi Kant Chaudhary President 9802916504/9845032852 shasikant.chaudhary@gmail.com	National federation to promote pharmaceutical profession and provide medicinal supplies
60.	Worldlink Communications Pvt. Ltd.	JawlakheL, Lalitpur, Nepal Tel: 977-01- 5523050; 9801523050 Fax: +977-1-5529403 Email: info@worldlink.com.np Web: worldlink.com.np	Dileep Agrawal Managing Director	Nepal's largest internet service provider
61.	Kalika International Trading Pvt. Ltd.	PO Box 21534; Baluwatar, Kathmandu, Nepal Tel: 977-1-4439-152, 4439-153, 4439-154 Fax: 977-1-4439-155, Email: info@kalikagroup.com	Bikram Pandey Managing Director	Leading company in supplying hydropower equipment and accessories
62.	Himal Refrigeration and Electrical Industries Pvt. Ltd.	Gushingaal Chowk, Kathmandu, Nepal PO Box 13417 Tel: +977-01-5520123 / 5520260 Email: himalref@wlink.com.np Web: www.himalref.com.np	Rakesh Pant	Supply, installation, repair maintenance of all products of air conditioners, generator and Solar PV systems
63.	Trade Link International Pvt. Ltd.	PO Box: 5771, Maitighar, Kathmandu, Nepal Tel: 977-1-4244408 / 4225479 | Fax: +977-1-4224815 Email: info[at]tradelinknp.com Web: www.tradelinknp.com	DM Shrestha Managing Director	Leading supplier of electro-mechanical equipment in Nepal

SN	Name of the company/supplier	Address	Contact person	Equipment/ materials/ services
64.	Lime Leaf International Pvt. Ltd.	Loshal, Chakrapath, Kathmandu, Nepal E-mail: tradelinknepal@gmail.com Tel: +977- 1-4370121, 4376218	Achyut Nepal Managing Director 9851042471	Supplier of electro-mechanical and electrical equipment
65.	Navin Legal Associates Pvt. Ltd.	Babarmahal, Kathmandu PO Box:19858 Tel: 01-4242029 E-mail: navinlegal@consultant.com Web: navinlegalandassociates.com	Chhatramani Niraula Chairman	Legal consultation on banking, business, dispute resolution, litigation & settlement, investigation of criminal and civil cases
66.	Jagdamba Suppliers	Battar-3, Nuwakot	Mr. Basulal Shrestha 9841458694; 010 560 694	Building materials, hardware fitting, pipes
67.	L S Construction	Battar, Nuwakot	Prabin Shrestha 98511 20210	All works related to road and housing construction
68.	Baba Bishwakarama Falam Pasal	Battar, Nuwakot	Sadhuram Tripathi 9849513805	Iron fittings, housing and commercial fitting, wrought iron welding
69.	Prakash Engineering Industries	Bidur - 3, Battar, Nuwakot	Ganesh Kumar Dangol 9823459565/9851147691	Pipe cutting and threading
70.	YNRM Suppliers	Battar, Nuwakot	Yub Raj Shestha 9841319960	Office and household appliances
71.	Bandevi Oil Store	Battar, Nuwakot	Dinesh Shkya 00977- 9851148704	Fuel supplier
72.	Lama Funiture Uudhog	Battar, Nuwakot	Karna B. Tamang 9860820504	Supplier of furniture & interior materials
73.	R K Stores	Battar, Nuwakot	Hari Sapkota 9851160647	Food items and retail shop
74.	Natyashowari Roda Dhunga Udhyog PVt.. Ltd.	Kabilas - 8, Nuwakot	Jagdish Poudel 9845856760	Sand, aggregate, stone and other construction materials
75.	Mayalaxmi Travels and Tours Pvt. Ltd.	Budur-03, Nuwakot	Ramchandra Adhikari 9841966932	Rental of trucks and dumpers

3.8 Promoting quality of goods and services through performance-based contracts

In order to enable Nepali industry and service suppliers to mutually benefit from the hydropower development, it is suggested to promote Performance Based Contracting (PBC) as it allows contractors to better control its functional, technical, schedule and budgetary objectives and outcomes for a particular procurement. PBC is a procurement method that structures all aspects of procurement around the purposes of the work to be performed and allows agencies to acquire products and/or services via contracts that define what is to be achieved.

The application of PBC in benefitting Nepali industries is that it allows suppliers to deliver the required service based on its own best practices and the contractor's desired outcome. It also maximizes competition and innovation using performance requirements thereby minimizing burdensome reporting requirements and achieving cost savings through performance requirements. Under PBC, all contract standards are measurable, achievable, relevant and controllable. Again, as the UT-1 HEP will create many opportunities for businesses and suppliers, the contractor shall commit to communicate these procurement opportunities to Nepal's business community and adopt a transparent and fair procurement process for those interested in competing to supply goods and services for the project.

3.8.1 Supplier requirements

Suppliers and contractors are responsible for providing equipment, materials, and services that meet all technical requirements of the contract specifications, including all applicable industry codes, standards, permits, and licenses. This means that all equipment and materials arriving at our project sites are defect-free and that the workmanship of contractors meets the highest industry standards. As part of our attention to quality, all equipment and material suppliers and subcontractors are expected to perform the work as per the requirement.

3.8.2 Testing of materials and supplies

The project and contractor shall conduct quality checks of all the incoming materials, particularly raw materials like cement, coarse aggregates, bricks, iron bars, etc. For this, a standard quality control laboratory equipped with latest testing equipment will be established at the project site. All incoming materials, goods and supplies should be tested as per test methods following the standard testing procedures. The materials, if found unsatisfactory in the tests, should be rejected and as per requirement confirmatory tests should be conducted before rejection. The supplier should be immediately informed about the rejection of the material and should be warned so that if the supplier repeats the same, its contract would be terminated.

The contractor shall effectively manage all industrial materials and supplies so as to provide an unbroken chain of components for timely completion of the project. A large component of materials management is ensuring that parts and materials used in the supply chain meet requirements by performing quality assurance. Because of poor transportation facility in the project sites such as the dam site in Haku and powerhouse in Mailung, one of the major challenges is maintaining a consistent flow of materials at site. Hence, quality control and timely delivery during the construction phase of the project is very important because this will ensure smooth operation and optimum generation from the project.

3.8.3 Quality control of goods and services

UT-1 HEP shall encourage competitive price surety throughout the project lifecycle. The primary challenge in achieving this goal is bridging the gap between bid close and award. During this

period, potential candidates may be exposed to the risks of sudden and wide market fluctuations or the additional costs of purchasing due to uncertain market price fluctuation.

Hence, it is expected that by improving quality in the purchase of materials, equipment, goods and services, the project helps to protect people and the environment, promote economic development and partner with project affected communities. The project requires suppliers and contractors to comply with all applicable national legislations, regulatory requirements, and project-specific environmental and social safeguards compliance with regard to:

- Respecting labor rights and fair working conditions, including the right to association, where legal, and worker safety;
- Prohibiting and eliminating all use of forced or child labor;
- Practicing non-discrimination in procuring goods and services;

Suppliers and vendors' expectations may vary depending on the contractor's scope of work, site-specific context, or when special conditions or commitments already exist. Suppliers and contractors may be required to respond to bid specifications and/or submit, prior to starting work, specific plans for addressing particular environmental sustainability aspects such as:

- Implementing a working environment that protects the health and safety of workers and communities consistent with labour standards and guidelines;
- Executing programs for sustainable design and purchasing, including goods made with recycled content, reduced toxicity, or that meet "eco-label" standards;
- Providing security services in a manner that respects human rights and consistent with human rights principles;
- Engaging with indigenous people, other vulnerable groups and cultural heritage consistent with EIA standards and regulatory principles;
- Supporting our customer's stakeholder engagement, including grievance procedures and reporting; and
- Evaluating suppliers and vendors in fair and transparent manner in all bid evaluations by demonstrating a comprehensive understanding of, and ability to respond to the sustainability aspects.

3.9 Monitoring and reporting

Monitoring is a key element in ensuring full and fair opportunity of access for Nepal-based suppliers of goods and services to meet project requirements and help in promoting a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements for goods and services. The project also recognizes that monitoring and reporting of the purchase of industrial materials, goods and services, and procurement decisions, are required so as to meet benefits compliance to the Nepali suppliers. This includes procurement monitoring activities of suppliers. In this regard, the contractor shall prepare a checklist that will, at a minimum, include or reference detailed quality system procedures and process flow charts for the following processes: (a) inspection, calibration, sampling, testing, trials and monitoring; (b) materials identification and traceability; (c) quality assessment of sub-contractors engaged in both supply and construction activities; (d) purchasing process, information and verification; (e) preservation of products (packaging, handling, shipping and storage); (f) corrective actions and opportunities for improvement; (g) document management; (h) site test laboratory procedures; and (i) control of documents and quality records.

In order to communicate what opportunity exists for potential Nepali agencies, firms, suppliers, business houses and vendors during the construction phase of UT-1 HEP, NWEDC will organize one workshop each in Battar and Kathmandu in October 2018. During the workshop, NWEDC will apprise the potential Nepali contractors its commitment according to the plan. Again, DoED will monitor what level of inputs is required for goods and services after one year of this plan's implementation. By the mid of 2019, DoED will undertake a comprehensive monitoring and review of the first year's plan implementation and accordingly revisions will be made in this plan and strategies shall be developed to encourage domestic companies for full and fair opportunity of access to meet the project requirements without compromising on quality and competitiveness. Again, in accordance with the obligations of the PDA (Schedule 13), NWEDC is required to submit annual progress report to DoED on the implementation of the Industrial Benefits Plan.

3.10 Expected outcome

UT-1 HEP provides ample opportunities for Nepali companies, suppliers of goods and services. The execution of all main works within available time period of 5 years is considered to be through contracts. Industrial benefits considerations will gain importance as there exists tremendous growth of Nepali suppliers of goods and services both in the scale and scope of activities, its importance to the provincial economy and treasury, and industry-relevant infrastructure, training and R&D facilities and capabilities. This will also see growth in the local labour force and supply community, and their participation in the overall construction process.

As the quantity of excavation and concreting in the dam is large and execution of the works would call for optimal planning and scheduling of resources for completion of the project within a planned time period, the plan significantly contributes to deliver sustainable industrial benefits to the Nepali domestic suppliers of goods and services. This will indirectly support Rasuwa district in attracting investments in future local projects.

Through the contractor's transparent tendering process, Nepal's domestic business houses can provide construction supplies for infrastructural works (such as roads, bridges, residential and non-residential buildings). This will provide full and fair opportunity for Nepal-based suppliers to access project requirements of goods and services and will help in building a strong local network for supplying manpower, materials and machines.

3.11 Disclosure policy

NWEDC reiterates International Finance Corporation's (IFC) strategic commitment to sustainable development by strictly adhering to its policy and 8 performance standards on environment and social sustainability. In accordance to this, NWEDC is required to disclose the Nepal Industrial Plan at an appropriate time to the project affected communities and potential suppliers/vendors, so as to inform, stimulate discussion and broaden understanding of private sector development in the project area. This is also important that the IFC policy also recognizes and endorses the fundamental importance of accountability and transparency in the development process. As per IFC's policy to be open about its activities, to welcome input from affected communities, interested members of the public and business partners and to seek out opportunities to explain its work to the widest possible audience, the disclosure will help create and nurture public support for activities which promote the timely construction of UT-1 HEP and helps to enhance the quality of IFC-financed operations.

CHAPTER 4: STANDARD OPERATING PROCEDURES

4.1 Standard Operating Procedure

In the midst of mitigating supply and demand gap, the following Standard Operating Procedures (SOPs) have been suggested for UT-1 HEP's major contractor and prospective suppliers:

Negotiate supplier contracts with a commitment to fairness and a focus on long-term mutual benefit. In light of market uncertainty, many suppliers are open to significant price reductions in exchange for early contract renewals and/or longer-term agreements. Hydropower projects face a window of opportunity where they can pre-emptively lock in pricing now that will be attractive in a few years, and simultaneously cement preferred relationships with key suppliers.

Conduct joint value sessions with suppliers. It is not always best to identify cost savings and risk reduction or mitigation opportunities during the contract negotiation period. Neither supplier account team nor customer sourcing team, necessarily the best people to do so. Instead, it is advisable to host a workshop that involves cross-functional teams from the project and supplier to determine a number of factors (i.e., volatile commodity costs, ways to reduce costs/ risk through advance or consortium purchasing, material substitutions, streamlining business processes/ operations, etc.)

Monitor supply chain risks and act to safeguard viability of critical suppliers. A company's supply chain is only as strong as the weakest link. Companies need to put increased emphasis on rigorous monitoring and analysis of supply chain risk factors, recognizing the causal connections across various factors.

Optimize supply chain leverage. In recent years, hydropower projects are engaging suppliers in innovative efforts to achieve cost savings while safeguarding supplier profitability -- often by forging new links of collaboration among multiple nodes in the supply chain. In many cases, significant opportunities exist when companies bring together tier one suppliers with critical upstream suppliers of raw materials or input components.

4.2 Industrial benefits safeguards

Delivering benefits from closer collaboration between the contractors and suppliers can not only strengthen links between them so that the relationship is one of mutual trust, but it can also deliver tangible benefits of efficiency. Presented hereunder are a few benefits industries may receive during the course of the project's construction phase:

Best practice shared: Collaboration results in best practice being shared throughout the supply chain. All those within the supply chain are aware of what is required. There is a real understanding of what the goods supplied will be used for and what causes problems within the supply chain.

Fewer defects: The sharing of best practice also results in improvements being made on a continuous basis, thereby reducing the instances of waste or poor value. Goods that are defective or sub-standard are simply not supplied, which in turn drives down any 'glitches' within the supply chain.

Improved communication: Communication is a direct result of closer collaboration with suppliers. For them to be aware of the requirements that the customer has, there has to be communication

Suppliers get to have a voice: The collaborative approach requires communication to be two-way, with suppliers being able to report any problems to the customer and hopefully they can then work together to ensure that these are eliminated

Continuity of supply: Suppliers are able to plan effectively for future. Due to operating within an exceptionally competitive market, there is always a risk that the supplier will not survive, especially if they have cash flow problems. However, the collaborative approach means that the supplier will be able to plan for future, knowing what share of the market they will be able to retain or even expand into, with reasonable accuracy.

Improved stability: Stability within the supply chain cannot be over-estimated. Any supply chain that is unstable will have stock outs, will have an inability to meet sudden peaks in demand and ultimately will not provide a good service to the customer. So, collaboration helps to stabilize the supply chain in a better way.

Flexibility: Closer the collaboration between the project and suppliers ensures that the supply chain can meet any peaks or troughs in demand. The flexibility of approach can actually make a huge difference to the project. They will be able to take on new contracts with little notice or they will be able to withstand periods of low demand, simply by working in a close relationship with their suppliers.

Reduction in costs. The reduction of defects and time saved within the supply chain means that the supplier is able to lower the costs of goods supplied. Which is a benefit to the project but also helps the supplier to keep afloat and stay competitive. Hence, collaboration can be a good driver for cost reduction.

4.3 Stakeholder consultation

The stakeholder consultation conducted in Dhunche and Battar in December 2017 focused on the potential suppliers of goods and services who could be provided full and fair opportunity to access project requirements for goods and services in promoting a vibrant, growing, competitive supplier base from within the country. The consultation involved meeting with the key representatives of the districts' agencies and suppliers in identifying their comparative strengths in meeting the project's requirements. Accordingly, a database of the potential suppliers of goods and services was prepared (as stated in Table 4 above).

NWEDC's contractors and sub-contractors, co-ventures with Nepal's commodity associations, professional consulting firms and associations, district chapters of the chamber of commerce and industries, electrical and mechanical firms and federations.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Nepali Industries are expected to flourish due to regular demands of material, manpower and machines as a result of the UT-1 hydropower project either during construction or operation phase. During construction stage, they will acquire necessary experiences and exposure from a big project. This will pave the way to a strong development stage for both the industry and society. With the growth of industries, a robust vendor's chain will be developed which will boost the quality of work thus mutually benefitting both UT-1 HEP and Nepal's industry as a whole.

Following sectors of industries are going to benefited due to the construction of UT-1 HEP:

1. *Construction industry*: UT-1 HEP envisages infrastructural works, namely, road/ bridge/ colony/ building, which is to be executed through contracts in which Nepali construction industry can participate.
2. *Cement and steel industry*: The requirement of cement and steel for UT-1 HEP is to be sourced from manufacturers/ suppliers to meet the requirement during construction period in a phased manner. Companies from Nepal can supply the same provided the quality and quantities requirement are met by them at a competitive price on time.
3. *Transport industry:* Air aviation, truck, tippers, taxis, and trailers, etc. will get boost as a result of the movement of manpower, material and machines/ equipment required for the project.
4. *Logistic*s: Material handling, packaging, containerization, insurance, banking, storage and documentation, etc. will help in developing Nepali industries.
5. *Smaller bid packages*: Catering, cleaning, security, commissariat, etc. will be supplied by the local Nepali goods, suppliers and vendors.
6. *Infrastructure growth*: For hydropower project, motorable roads are major infrastructures that need to be built in order to transport turbines, steel pipes, generators, transformers and construction material (such as cement and steel) needed during construction. These developed infrastructures will be very useful for other industries as a whole. So, for the construction of these works, local industries, manufacturers and suppliers can participate.

5.2 Recommendations

The following recommendations are made to ensure full and fair opportunity for Nepal-based suppliers of goods and services to meet the requirements of UT-1 HEP:

Initiate interaction workshop. There is also a lack of clarity on the information and sufficient understanding on how Nepali industries can benefit from UT-1 HEP. Increasing access to information in providing full and fair opportunity for Nepal-based suppliers to access project requirements for goods and services processes through interaction meetings can enhance in creating an enabling environment to increase business partnership with the project. In this regard, NWEDC will organize two workshops in Battar and Kathmandu in October 2018. This will immensely help potential Nepali business entities to understand the timing, quantity and quality requirements of goods and services. An initial orientation workshop with the listed associations and companies (as outlined in Table 4) will go a long way in building business synergies and promoting a vibrant and competitive supplier base within Nepal that shall meet higher value-added requirements of goods and services for the project. In organizing the interaction programme, it is

recommended to organize two consultative meetings–in Battar and Kathmandu. For organizing these meetings, NWEDC shall make a provision of NPR 5,00,000 (NPR Five lakh only) each.

Stimulate business linkages. National and international joint venture partnerships and inter-institution linkages provide local firms based in Rasuwa and Nuwakot districts and adjoining market areas with the necessary externalities and confidence to initiate joint ventures and promote more inclusive business linkages models, including support for the development of local processing units; fostering inclusive markets, and encouraging joint ventures between local and foreign suppliers to develop inclusive business linkages and enhance knowledge transfer.

Maximize benefits to local suppliers. Local business houses are key players in fulfilling the emerging needs of the project as they are most directly affected by the project, and their involvement should be continuous from the early stages of the construction phase. The contractor should give highest priority to promote local business development and sourcing initiatives in the bidding process fulfilling tendering compliance.

Disseminate information. Information associated with industrial benefits from the hydropower project should be widely disseminated well in advance to the Nepali industrial sector for itemization and quantification of goods and services required over the project life cycle through meetings and announcements in media. While on the one hand, this will help Nepali suppliers to compete on a full and fair basis, it will also help the contracting party in identifying right business firm who can supply goods and services well on time.

Setting up suppliers' database. Setting up database of Nepali suppliers of goods and services will help in identifying their business credentials and qualifying criteria. This database, which should be available, could be owned, updated and managed by the project's contractor to ensure full and fair opportunity for Nepal-based suppliers of goods and services to meet the requirements of UT-1 HEP.

Encourage full and fair access. The contracting party shall provide full and fair access to Nepali suppliers of goods and services so as to enhance local suppliers' prospects of business success. For this, it is recommended to NWEDC to designate an Industrial Benefits Officer who shall work with domestic suppliers on opportunities to meet mutual needs. NWEDC, through the contracting party, is expected to submit annual progress report to the Department of Electricity Development on the implementation of the plan. This will support the Government of Nepal's initiatives for domestic supplier development activities to enhance upgrading of capabilities and product and services quality and competitiveness.

ANNEX 1: IBN's NINE PRINCIPLES

Transparency, expert oversight and financial disclosure key to ensuring principles are put into practice

1. Meets Nepal's electricity needs first

Nepal must address its own electricity needs before turning to export markets. Projects like the 456MW Upper Tamakoshi, 216MW Upper Trishuli 1, 750MW West Seti, among others, combined with free electricity and some domestic purchases from the four major export projects, as well as seasonal interchanges of power with India, will ensure that the needs of Nepal for electricity are met first.

2. Captures for Nepal her fair share of economic benefits

People of Nepal will receive a fair share of benefits based on the inherent value of their water resources that assures an appropriate distribution of those benefits at all levels – village, district, regional and national. Each project undergoes very rigorous risk and financial analysis.

3. Ensures best use of river basin

The project maximizes benefits to Nepal by making best and most profitable use of the value of water from the respective river basin within Nepal. It optimizes the value of Nepal's river basins by taking into account the use of the basin within Nepal for water power as well as multiple uses such as fisheries, drinking water and irrigation. It anticipates and takes into account hydro projects and other river uses within Nepal, both upstream and downstream, existing and planned, and requires operational coordination with other river basin users. River basins need to be analyzed so that proposed developments achieve highest and best use of the entire river within Nepal.

4. Returns hydro asset to Nepal in good operating condition

The project is transferred to the Government of Nepal in a good operating condition at the end of the concession period, which is as short as possible but enables the developer to receive a market return for its investment and risk.

5. Transfers project risk to party best able to manage risk

Project risk is transferred to the developer for completion and project performance and adherence to contractual terms. The Government and independent technical experts perform due diligence to ensure performance.

6. It is balanced

The developer is able to receive a fair market-based return as compensation for investment, project development and management skills and risk. Some projects are much more profitable than others. Hence, PDA terms will vary in order to permit a fair return to the developer/investor and a fair flow of benefits to the people of Nepal.

7. Ensures high environmental sustainability and high safety standards

The environmental and social costs are borne by the developer and the project as they are in the best position to control project design, construction, finance and operations risk and can make use of sophisticated contracting terms and structures and external financial guarantees to protect them against these risks. Since developers are acting as agents of Nepal in developing Nepal's hydro resources, Nepal needs to be assured that the quality of the asset and the flow of electricity and financial benefits will happen as expected.

8. Industrial and Employment Benefits

A good deal is structured so that the demand for goods and services from the tens of billions of dollars of expenditure stimulate many new prosperous business and thousands of skilled and semiskilled jobs for Nepalis. This involves a robust economic strategy aimed at developing an Industrial and Employment Benefits Plan that will optimize our industrial and services base by exploiting the linkages to hydro spending.

9. Model community benefits

Includes a model community benefits package that brings about long-term benefits such as training, skill development, employment, business development, community infrastructure - clean water, health services, electrification, housing, etc. It looks specifically at needs of indigenous groups and seeks free, prior, informed consent from local communities. The local benefits package will achieve best practices and be transformative for the lives of local people, particularly those that are impacted by the development. It will ensure that local people will become proponents rather than opponents of new hydro projects. Local communities will be heavily consulted; communications will be open, full and understood by all.

ANNEX 2: Quantity of construction materials required for the project

Table 1: Requirements of construction materials

SN	Materials	Quantity	Unit
1.	Cement	57,500	Metric ton
2.	Reinforcement bars	7750	Metric ton
3.	Aggregates	122,078	Cubic meter
4.	Sand	61,100	Cubic meter
5.	Explosives	7800	Tons

Source: Feasibility Study Report, UT-1 HEP

ANNEX 3: List of materials, supplies and services required during construction phase

Materials/equipment	Supplies	Services
Steel	MS tube	Legal consultations
Cement	MS sections	Hospitality
Aggregate	SS pipes and sections	Catering
Fabricated metal products	Construction chemicals	Food and beverage
Ready mixed concrete	Silica fume and flyash	Overhauling and mechanic stores
Lumber, timber and bricks	Construction machinery	Refurbishing and repairs
Chemical products (explosives, hardeners, curing compounds)	Construction equipment	Electrical appliances
Rubber products (waterstops)	All types of industrial hardware	IT and communications
Clay and glass products	Welding equipment and consumables	Transportation
Electricals and electronics	Light and heavy duty hand tools	Sanitary ware, home furnishings, security guards
Trucks, tractors, bulldozer, crane, dumpers, dragline, shovel, scraper, grader, drilling machines	Power tools and prefabs	Skilled manpower such as welders, scaffolders, plumbers, masons, carpenters, electricians, foreman, driver, etc.
Blasting materials and drilling machines	Pneumatic tools	Groceries
Asphalts and bitumen	Hydraulic tools and equipment	Ticketing and travel
Transit mixers and water sprinklers	Sediment flushing facilities	Information communication and technology (ICT)
Hydro-mechanical equipment such as safety and other gates, stoplog, trash rack/ cleaning machine, steel liner, penstock, bifurcation	Compressors, pumps and safety gears and appliances	Insurance

Materials/equipment	Supplies	Services
Fire protection	Material handling equipment	Medical service
Heating, ventilation, air conditioning	Fuel (gasoline and diesel)	Advertising services
Oil treatment system	Oxygen cylinders	Stationery services
Hydraulic scaffolding	Food and beverage	
Power plant equipment	Work shop machinery	
Main transformer		
Switchyard		

ANNEX 4: List of Nepali firms, agencies, vendors and suppliers to whom works have been awarded by NWEDC

SN	Name of Nepali firms, agencies, vendors and suppliers
1.	Annapurna Wireless Pvt. Ltd.
2.	Worldlink Communications Pvt. Ltd.
3.	Kami Tashi Tamang
4.	Garud Securities Pvt. Ltd.
5.	Bira Motors Pvt. Ltd.
6.	Real Time Solutions Pvt. Ltd.
7.	Energy Information Center Pvt. Ltd.
8.	Shreejana Law Firm
9.	TRU Advisory Pvt. Ltd.
10.	HECT Consultancy
11.	Jade Consult Pvt. Ltd.
12.	Synergy Advisory Pvt. Ltd.
13.	Mahesh & Associates
14.	Manohar Prasad Sherchan
15.	Mamata Sharma
16.	Padma Banskota
17.	Rakesh Hamal
18.	Development Law Associates Pvt. Ltd.

ANNEX 5: Schedule 13: Nepal Industrial Benefits Plan Guidance Note

1. Overview

The requirements set out in this Schedule are based on the principles of good corporate citizenship, an expectation that access to early information on Project opportunities shall enable Nepal-based firms to gear up to meet the needs for supply of goods and services at competitive prices in accordance with the timelines and quality standards required by the Company. This shall ensure that the Company and Nepali industry and service suppliers can mutually benefit from having a strong competitive supplier sector based in Nepal.

2. Requirements

2.1 The Company and GoN shall jointly prepare a Nepal Industrial Benefits Plan as per Section 11.3.2 *(Plans)* that shall:

2.1.1 ensure full and fair opportunity of access for Nepal-based suppliers of goods and services to meet the requirements of hydro-project developments;

2.1.2 help in promoting a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements for goods and services for the Project;

2.1.3 encourage initiatives for joint venture and quality improvement measures that shall enhance the ability of Nepal-based suppliers to compete domestically and internationally;

2.1.4 promote safe and healthy working conditions among suppliers of goods and services to the Company and the Project; and

2.1.5 ensure Contractors afford full and fair opportunity for Nepal-based suppliers to access Project requirements for goods and services;

2.2 The Company and GoN shall jointly prepare the full Nepal Industrial Benefits Plan within twelve (12) months from the date of this Agreement in accordance with this Schedule.

3. Applicability

3.1 The applicability of this Schedule is established during the early planning and engineering phases of the Project.

3.2 Since there are immediate service requirements and early construction, preliminary Nepal Industrial Benefits Plans should consider the availability of engineering, legal, planning, consulting and construction services, while the detailed design phase shall enable more precision on the specific requirements for goods and services and their timing that would enable Nepal-based suppliers to be accommodated.

3.3 Early interaction with Nepal-based suppliers, both existing and potential, is strongly encouraged by GoN. All Project phases, from planning, regulatory, feasibility, design, construction, operation and maintenance shall be addressed in procurement plans to afford opportunities for Nepal-based suppliers for goods and services.

4. Elements

4.1 Key elements of this Plan are to provide full and fair access to domestic suppliers of goods and services shall be the following:

4.1.1 itemization and quantification of goods and services required over the Generation Project life cycle, and plans for sharing this information with potential suppliers well in advance to enable them to compete on a full and fair basis;

4.1.2 key measures that shall be followed to help enhance local supplier prospects of business success;

4.1.3 designate an Industrial benefits officer who shall work with domestic suppliers on opportunities to meet mutual needs;

4.1.4 interaction with key domestic suppliers to help them understand the timing, quantity and quality requirements for goods and services;
4.1.5 support GoN initiatives for domestic supplier development activities to enhance upgrading of capabilities and product and services quality and competitiveness;
4.1.6 encouraging joint ventures between local and foreign suppliers to enhance knowhow transfer;
4.1.7 excluding major construction contracts, proper structuring of procurement packages at a scale to encourage domestic supplier participation, where possible;
4.1.8 providing appropriate feedback where established local suppliers were unsuccessful bidders;
4.1.9 promote local business development and sourcing initiatives.
4.2 The Company shall submit yearly progress reports to the GoN on the implementation of this Plan.