Arun-3 Hydro Electric Project
900 MW

NEPAL INDUSTRIAL BENEFITS PLAN

SJVN Arun-3 Power Development Company (SAPDC) Private Limited

March 2018
HECT-RIMC JV

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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
ECoN	Export Council of Nepal
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
IBN	Investment Board Nepal
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
O&M	Operation and Maintenance
PAF	Project Affected Family
PDA	Project Development Agreement
RAP	Resettlement Action Plan
R&R	Resettlement and Rehabilitation
SAPDC	SJVN Arun-3 Power Development Company
SCAEF	Society of Consulting Architectural and Engineering Firms of Nepal
VDC	Village Development Committee

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 Nepal based industry, suppliers and service providers for 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 of the company. Further, the Nepalese industries, service providers and suppliers will be benefitted by developing a strong competitive supplier sector base in Nepal.

The specific objectives of the Industrial Benefit 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 relates to fulfil the industrial requirements of goods and services for development of hydro electric project, its primary role is inter-related with the contractors engaged in project construction and the Nepalese suppliers. Hence, SAPDC ensures its role for facilitation of interaction among the contractors of Arun-3 Hydroelectric project and Nepal based industrialists, suppliers and service providers. Thus, establishing relations between the contractor and Nepal-based suppliers will ensure full and fair opportunity of access for business as well as 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 for meeting hydropower development requirements, and makes a set of recommendations to ensure that Nepalese contractors access full and fair opportunity for supply of goods and services required for Arun-3 HEP construction. During the preparation of this plan, a consultation process was conducted that identifies around 70 potential Nepalese associations, suppliers of goods and services from which the supplies of some of the material, goods and services required for project construction could be sourced.

Likewise, the plan also suggests to facilitate and organize the interactive meetings of SAPDC and its major contracting agencies with potential Nepal based suppliers of goods and services; for disseminating information about the material requirements; stimulate business linkages; opportunities to local suppliers; establish set up suppliers' database, and encourage full and fair access to the suppliers of goods and services.

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CHAPTER 1: INTRODUCTION TO NEPAL INDUSTRIAL BENEFITS PLAN

1.1 Background

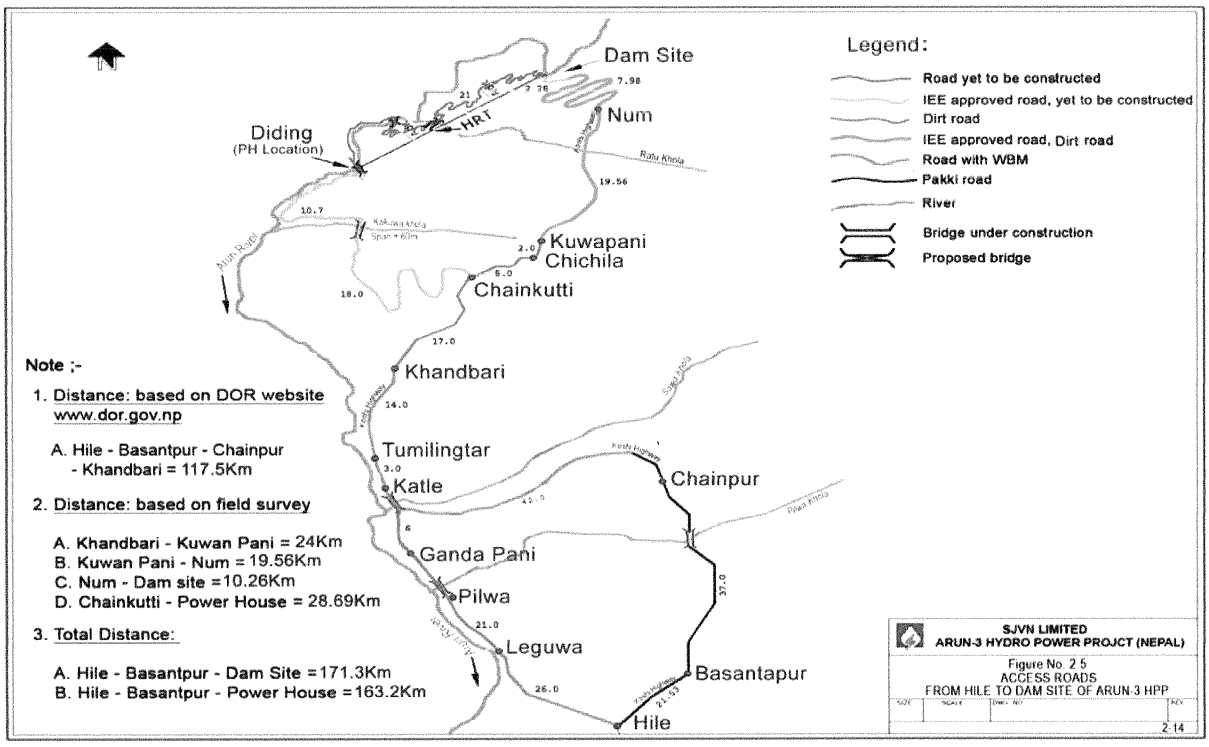
Arun River is a tributary of Sapta Koshi River. It originates as Phungchu River from high mountain near Kimathanka in Tibet. Arun River merges into River Sapta Koshi at Tribeni, Nepal, where three rivers, namely, Sun Koshi, Arun and Tamor meet Sapta Koshi, draining altogether an area of about 61,000 sq. km with about 43% of its area in Tibet, China. After entering into Nepal, the river course abruptly changes southwardly and receives many streams on both banks. Principal tributaries of the river up to dam site which is located near Num village in Sankhuwasabha district, are Bakan Khola, Chhujan Khola, Leksuwa Khola, Ikhuwa Khola and Indu Khola at the left bank and Sursin Khola, Barun Nadi at the right bank.

SJVN Arun-3 Power Development Company (SAPDC) Private Limited has signed a Project Development Agreement (PDA) for the implementation of 900 MW Arun-3 Hydro Electric Project with the Government of Nepal on 25.11.2014. The Arun-3 HEP envisages an installed capacity of 900 MW and is located in Sankhuwasabha district (Map 1). The award of Arun-3 to SAPDC is on a built-own-operate-transfer (BOOT) basis for term starting from the PDA date and shall expire on the twenty fifth (25th) anniversary of the Scheduled commercial operation date (COD). As per the agreement, 21.9% of the power generated shall be given as free power to Nepal. Also, 7.5% of power will be provided to GoN as energy royalty for the first fifteen years and thereafter, this will be increased to 12% for remaining 10 years of the term. Capacity royalty will also be provided to GoN at the rate of NPR 400 per kW for the first 15 years and thereafter at the rate of NPR 1800 for the remaining 10 years of the term. If more power is required in Nepal, besides free power, it shall be provided as per agreement between SAPDC and GoN. The balance portion of power generated is proposed to be evacuated to India through the 210 km Diding-Bathnaha (Nepal portion) 400 kV transmission line with a sub-station at Dhalkebar. The energy generated from Arun-3 hydropower project will help in reducing the present deficit of energy supply and provide an impetus to the economic growth of Nepal.

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. In addition, the plan is also based on IBN's nine policy principles (Annex 2) of involving a robust economic strategy aimed at developing an Industrial Benefits Plan that will optimize industrial and services base by exploiting the linkages to hydro spending.

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 Nepalese 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, SAPDC 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/ Operation & Maintenance stages.



Map 1: Map of Sankhuwasabha district

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, the Nepalese industries and service suppliers can mutually benefit from having a strong competitive supplier sector based in Nepal.

The specific objectives of the Industrial Benefit 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.

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. It is based on the overall framework of Schedule 17 of the PDA guidance note (Annex 6). In addition, this report covers the anticipated service requirements in connection with the construction of the project.

The PDA Clause No. 11.10 states that *the Company 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 Nepalese 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.*

The Nepal Industrial Benefit Plan focuses on to maximize the use of Nepali products through Nepali suppliers and ensure that appropriate program is designed to fulfil the core objectives of the plan. As the plan directly relates to fulfil the project's requirements of goods and services, its role is inter-related with the contractor and the Nepalese suppliers, and hence, SAPDC does not have much stake in the implementation of the plan besides its role of facilitation and coordination. 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.

1.4 Various benefits to Nepalese industries from Arun-3 HEP

The development of Arun-3 HEP is expected to provide substantial benefits to Nepal's national economy and local community of the project area, in addition to direct benefits, new jobs, etc. The project will stimulate increased economic activity thereby providing important benefits to the Nepal based suppliers of goods and services. The range of benefits includes opportunities to domestic industries/ suppliers/ firms for supply goods/ material and services for project construction, employment generation and revenue generation for the government and other multiplier benefits to the national economy. In other words, the project is expected to provide a significant boost to the Nepalese economy by supporting economic growth and job creation as well as enhancing the competitiveness of Nepalese 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/ indirect employment generation. Further, in order to encourage Nepalese firms to invest in development projects, the Government of Nepal has provided concessional rates of customs duty, excise duty and refunds.

Like other HEPs, Arun-3 HEP will also have different stages during its life cycle, *i.e.* pre-construction stage, construction stage and post-construction stage/ Operation & Maintenance stage. Various opportunities may be availed by Nepal's construction sector industry, service providers and suppliers of good/ materials, etc. during all these stages of the project. Some of the activities of project construction are listed below where manufacturers/ suppliers/ vendors of Nepal can be benefitted:

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- 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 construction of project. For the construction of Arun-3 HEP, the development of access and approach roads is a key factor. The access through roads to adits and power house site of project is under construction. With the inception of major construction works of project, various indirect benefits from project in different sectors can be seen, which may be availed by industrial sectors such as hospitality, banking, transport, raw material suppliers, insurance, medical, civil aviation, tourism, etc.

Around 86.52 km of road network has to be constructed for the development of Arun-3 HEP. The Initial Environmental Examination (IEE) has been approved for a stretch of 56.23 km roads and almost the construction of all segments of these roads is completed. However, the remaining segments of project roads are covered under EIA/ SEIA report, for which the construction work is still in progress. Apart from this, 2 bridges of span ± 100m each are also proposed for construction on river Arun. Two bridges of span ± 30 m each have already been constructed over Num Khola and Khoktak Khola to provide access to the dam site.

SAPDC is executing these infrastructural works (roads, bridges, residential and non-residential buildings, etc.) through Department of Roads, GoN and other Nepal based agencies through transparent tendering processes. Various steps involved in tendering procedure are as follows:

- Publishing of Notice of Inviting Tender (NIT) for 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 Nepalese construction companies/ suppliers/ service providers can participate in the related tender. Nepalese firms/ companies can render services for all types of works during the entire construction/ operation stages of the project. Nepal's construction agencies, suppliers and service providers may also tie-up with the international contracting agencies engaged for construction of Arun-3 HEP.

Table 1: Details of proposed access road construction

S. No.	Description of road	Length (km)
1.	Kuwapani to Num	19.56
2.	Num to Dovan	7.98
3.	Chainkutty- Diding	28.69
4.	Dovan to Dam top site	1.2
5.	Power House to Phaksinda (Near Dam site) via Adit-2 & 3	20.87
6.	Power House to Adit-4 and Surge Shaft	1.89
7.	Dam site to contractor facilities and Quarry sites	6.33
Total length of road		**86.52**

Source: SEIA, Arun-3 HEP, 2017

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1.4.2 Construction methodology

The methodology adopted for the construction of Arun-3 HEP takes into consideration the construction schedule, the compatibility of the construction equipment to site conditions and the quantities as well as the utilization factor of the 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 I – Construction of Dam, Diversion tunnel, Intake, Intake tunnels, HRT (from RD 0.00 to RD 3100.35m, Adit-1 and Diversion Tunnel Gates and Hoist
- Package II – Construction of Head Race Tunnel (HRT) from RD 3100.35 m to RD 11778.68 m, Adit 2, 3 and 4 to HRT, Surge Shaft, BVC, Pressure Shaft (Without Steel Liners), Power House Complex, TRT, Outfall and Switchyard;
- Package III – Hydro Mechanical works; and
- Package IV – Electro-Mechanical Works

Hydropower construction is carried out according to general construction project management best practices—considering all 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 SAPDC which shall provide critical oversight because oversight responsibility begins with the study and planning phase and continues until plant commissioning.

Construction phase of project requires large quantities of materials and supplies such as excavation, concreting, coffer dams, dam construction, intake tunnels and structures, surge/ pressure shafts, head/ tail race tunnel, powerhouse complex, installation of gates and hoists, electro-mechanical works, etc. (Annex 4).

Even during the operation phase, the requirements of industrial goods and services will also be continued.

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

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

- Guides and manuals providing information on the investment climate and procedures of Nepal
- Nepal Trade and Integration Strategy, 2010
- 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
- Private Sector Development and Prospects for Norwegian Trade and Investment Interests in Nepal

1.5.2 Interactive meetings

Two interactive meetings will be organized by SAPDC, one each in Biratnagar and Kathmandu for potential Nepal based industrialists, suppliers of goods and services with the contracting agencies engaged in the construction of Arun-3 HEP to gain insights into how they can help to promote a vibrant, growing, competitive supplier base within Nepal that over the time shall meet higher value-added requirements of goods and services for Arun-3 HEP.

The consultation meetings were also done during the preparation of the plan with potential Nepali suppliers indeed provided the much-needed information about facilitating business opportunities with Arun-3 HEP. 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 Arun-3 HEP industrial requirements and lack of transportation facilities to transport materials in the project area.

1.6 Limitations

The Industrial Benefits Plan preparation was a smooth exercise. Series of consultation meetings were conducted which covered a wide range of stakeholders ranging from district, regional and national level potential producers and suppliers of goods and services. However, the only limiting factor was the unavailability of information with the industries and suppliers about the material requirements of the project during construction and operation phase.

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

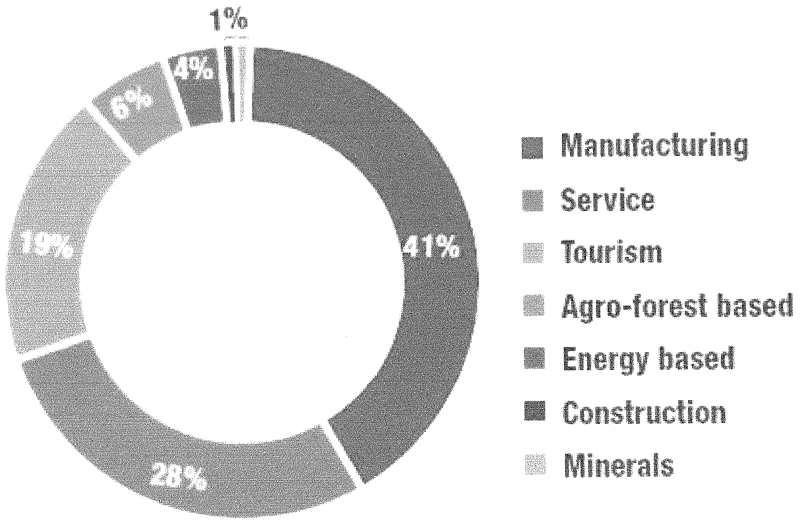
2.1 Status and prospects of industrial development in Nepal

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

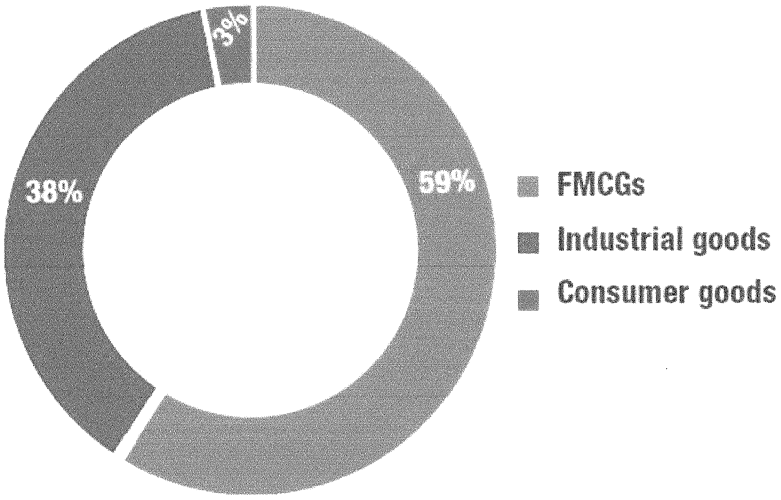


Source: IBN, 2017

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; plastics and rubber products (plastics 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.

Arun-3 HEP is located in far flung Eastern Nepal's mountainous district of Sankhuwasabha with little infrastructure and communication facilities. It takes almost a day for a normal vehicle to reach the project site from Biratnagar, *Terai's* industrial hub, 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.

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2.5 Assessing energy sector context

Nepal has faced an increasing gap between demand and supply of energy in the past several years. In order to address this latent demand, the Government of Nepal has accorded highest priority for hydropower development in the country. Presently, Nepal has total installed capacity of 1032.87 MW (as on March 19, 2018). 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 and postal highway projects. This is a major drag on the industrial efficiency in the country.

The process of industrialization was adversely affected during conflict and political instability period due to the deterioration in peace and security situation in the country. In addition to this, the industrial sector has faced problems like, energy shortage, lack of physical infrastructure, low utilization of the capacity, lack of proper business environment, weak basic infrastructure,

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problems in technology transfer and other causes leading to a decline in the production, lack of competitive capacity and a small domestic market.

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. However, 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.

Although relevant legal framework in Nepal is reasonably sound, there is a long-felt need to streamline the system in order to more expeditiously respond to the ever-increasing demands of industrial development. 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, 2017

The new Labour Act (2017), recently passed by the parliament on August 11, 2017, applies 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. In addition, the Act has a special provision on treatment of workers if they suffer from diseases or are maimed due to lax health and safety measures of their workplace. In such case, the concerned employer should bear all treatment expenses. And if the condition is incurable, there is also a provision of compensation.

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 Nepalese 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.

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.

Based on the consultations with local suppliers in Biratnagar and Kathmandu, it was assessed that because of the project's remoteness, difficult terrain and poor infrastructure for access, the Nepali firms have expressed high capital cost. Moreover, majority of the firms are not oriented towards supplying huge quantities. However, they expressed readiness to meet the project supplies if they are informed about the project's requirements well in advance.

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.

The Nepalese 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. Consequently, there are 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 Biratnagar and Kathmandu in April 2017.

Table 2: Summary of findings from consultations

Stakeholder segments	Key issues
Manufacturing companies	• Lack of information about Arun-3 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 • Law and order – a deterrent in Province No. 2

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 Arun-3 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 Arun-3 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

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CHAPTER 3: BENEFITS APPROACH, PRINCIPLES AND PROCEDURES

Arun-3 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 SAPDC's approach and principles respecting national benefits, and procedures through which it will implement these principles.

3.1 Approaches and principles

The Arun-3 HEP's benefits is driven by its commitment to develop industrial and human capacity, and deliver sustainable strategic benefits to benefit Nepalese 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 Nepalese 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 benefit 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 benefit 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.

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3.2 Engaging domestic producers and suppliers

Arun-3 HEP is expected to constantly engage with the Nepalese 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 Nepalese manufacturers, producers, suppliers, distributors and vendors, SAPDC shall adopt the following measures:

- Conduct at least one 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

Arun-3 HEP 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

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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 quality, human rights and fair workplace practices. The technical standards mainly to be adopted in Arun-3 HEP are IS, IEC, IEEE, ANSI, CIGRE, NSI, BS, ASA, NEMA, ISO, DIN, NFPA, ASTM, EN, CCH, ASME, IRC, ASNT, AWWA, JSCE, ASCE, ANSIC, JIC, NAS, etc. etc. This detail of standards is not exhaustive but indicative only, which may also vary, as per the technical requirement.

3.3.2 Performance standards

The following performance standards represent the minimum standards for all vendors/ suppliers of Arun-3 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. 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 the Arun-3 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 Nepal 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 the 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 Arun-3 HEP is provided in Annex 5.

3.5 Procurement and contracting

SAPDC 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.

SAPDC 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 SAPDC will ensure that its procurement activities address the requirements of the existing GoN regulations.

3.6 Vendor inspection

The project will attract a lot of business opportunities as both mechanical and electrical engineering industries related to the project 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 specific requirements. Vendor inspection can include design review, review of material certificates, visual inspection, various supervision or performance of mechanical or functional tests.

The most of the project's requirements like 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.

3.7 Key Nepalese suppliers of goods and services

Given the capabilities available from the 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 requirements has to be sourced from India. Nepalese companies represent some of these manufacturers, hence this provides 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, Nepalese 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 Nepalese vendors and achieving competitive pricing with quality, adequate quantity, safety, social and environmental safeguards. Annex 1 presents the list of Nepal's potential industries/ manufacturers, goods and service providers who could be involved in meeting Arun-3 HEP's construction and operation phase needs.

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 Nepalese 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 Arun-3 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 material 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 Num and powerhouse in Diding, 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

Arun-3 HEP shall encourage competitive price surety throughout the project lifecycle. The primary challenge in achieving this goal is bridging the gap between closing of bid 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:

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- 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 Nepalese 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 Arun-3 HEP, SAPDC will organize one workshop each in Biratnagar and Kathmandu during August 2018 and December 2018 respectively. During the workshop (Table 3), SAPDC will apprise the potential Nepali contractors and suppliers its commitment according to the plan. Again, IBN 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, IBN 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 7), SAPDC is required to submit annual progress report to IBN on the implementation of the Industrial Benefits Plan.

3.10 Expected outcome

Arun-3 HEP provides ample opportunities for Nepali companies, suppliers of goods and services. The award of all main works of project construction is done through competitive

bidding by SAPDC and the project construction phase is likely to be completed within 5 years. 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 Sankhuwasabha district in attracting investments in future local projects. This will also 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.

Table 3: Plan implementation schedule

Outputs	Action	Timeline	Responsibility
Promoting business opportunities with Arun-3 HEP	Two sensitization and interaction programmes to be organized for Nepal based industries, supplier of goods and services, one each at Biratnagar and Kathmandu	August 2018	SAPDC
		December 2018	
Monitoring and reporting	Annual monitoring and reporting	July 2019	SAPDC
Review of Plan implementation	Mid-term review	December 2019	Jointly by IBN and SAPDC

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CHAPTER 4: STANDARD OPERATING PROCEDURES

4.1 Standard Operating Procedures

In the midst of mitigating supply and demand gap, the following Standard Operating Procedures (SOPs) have been suggested for Arun-3 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.

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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 April and May 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 Nepal's leading business houses in identifying their comparative strengths in meeting the project's requirements. Accordingly, a database of the potential suppliers of goods and services has been prepared (as stated in Annex 1). This includes Nepal's commodity associations, professional consulting firms and associations, district chapters of the chamber of commerce and industries, electrical and mechanical firms and federations.

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CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Due to the development of Arun-3 HEP, the base of Nepal based industries, suppliers of goods and services will be certainly widened and the business opportunities flourish due to regular demands of material, manpower and machines during construction as well as 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 Arun-3 HEP and Nepal's industry as a whole.

Following sectors of industries are being benefited mainly due to the construction of Arun-3 HEP:

1. *Construction industry*: Arun-3 HEP is carrying out the infrastructural works such as the construction of roads, bridges, colony/building, which is being executed through contracts in which only the Nepali construction industry is involved like the Department of Road, etc.
2. *Cement and steel industry*: The requirement of cement and steel for Arun-3 HEP is being sourced from manufacturers/ suppliers during construction period in a phased manner. Companies from Nepal are supplying the same after fulfilling the quality and quantities requirement 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. *Logistics*: Material handling, packaging, containerization, insurance, banking, storage and documentation, etc. will help in developing Nepalese industries.
5. *Smaller bid packages*: Catering, cleaning, security, commissariat, etc. are being supplied by the local Nepalese 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 Arun-3 HEP for project construction:

Initiate interaction workshop. There is a lack of the information and sufficient understanding on how Nepalese industries can benefit from Arun-3 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, SAPDC will organize one workshop each in Biratnagar and Kathmandu during August 2018 and December 2018 respectively. 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 Annex 1) 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 meetings – one in Kathmandu and the other in Biratnagar. For organizing these meetings, SAPDC 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 Sankhuwasabha district 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 through quality and competitive 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 Nepalese 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 Nepalese 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.

Set up suppliers' database. Setting up database of Nepalese 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 Arun-3 HEP.

Encourage full and fair access. The contracting party shall provide full and fair access to Nepalese suppliers of goods and services so as to enhance local suppliers' prospects of business success. For this, representative of the Project Planning and Monitoring Department of SAPDC will serve as the Industrial Benefits Officer who will work with domestic suppliers on opportunities to meet mutual needs. SAPDC, through the contracting party, is expected to submit annual progress report to IBN 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: 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

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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

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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	Gopa 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
20.	Air Dynasty Heli Services	PO Box 10112 Sinamangal, Kathmandu, Nepal Tel: 4497464	Rameshwar Thapa	Medical evacuation and rescue; air cargo services

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SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
		Cell: 9801089842 Email: assistance@airdynastyheli.com		
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 Accountants of Nepal	Satdobato, Lalitpur, Nepal PO Box 5289 Tel: 01-5530730 / 5530832; Fax: 01-5550774 E-mail: ican@ntc.net.np; Web: ican.org.np	Mahesh Khanal President 9851027899	Autonomous body to undertake accountancy profession in Nepal.
28.	Federation of Nepalese	Milan Marg, Teku, Kathmandu, Nepal PO Box 269	Ms. Bhawani Rana	Umbrella organization of business in Nepal

SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
	Chambers of Commerce and Industries (FNCCI)	Tel: 01-4262061 / 4262218; Fax: 01-4261002 Email: fncci@mos.com.np		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
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)

SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
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
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	Kathmandu Metropolitan City-11, Kathmandu,	Purushotam Lal	Clinker processing and

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SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
	Cement Manufacturer's Association	Nepal Tel: 01-4224074 (Ext. 622)	Sanghai / Satish Kumar More	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 Nepalese 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 Material Industries Association	Kantipath, Kathmandu Tel: 4430609, 4255687, 4429219 Fax: 977-01-4430892, 4423492 E-mail: pcc@wlink.com.np; poudelp06@gmail.com	Ram K Poudel President	Wholesale supplier of stationery materials for office
53.	Sipradi Trading Pvt. Ltd.	Naya Naikap, Kathmandu, Nepal Tel: 01-4311501/4311502; 9801575777 Email: sipradi@sipradi.com.np	Siddhartha SJB Rana Chairman	Major player in Nepal's automotive and allied business; sole

SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
		Web: sipradi.com.np		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 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	Bhola B. Thapa President bthapa@president.com.np	Pioneer in air ticketing services for both domestic and

SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
		Web: pttnepal.com		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.	Destiny Human Resources Nepal Pvt. Ltd.	P.O. Box: 8975 EPC 5444 Subidhanagar, Tinkune, Kathmandu Tel: 977-1-4111889, 9851134823 Fax: 977-1- 4111890 Email: info@destinynepal.com	Rajan Kumar Adhikari Managing Director	Registered human resources supplier
61.	Titanic Manpower Supplier Pvt. Ltd.	PO Box 19904; Basundhara, Kathmandu Tel: 977-1-4353252/4364859 Fax: 977-1-4362901 Email: info@titanicmanpower.com	RS Puri Managing Director	Pioneer human resource supplier of Nepal
62.	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
63.	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
64.	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
65.	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
66.	Lime Leaf	Loshal, Chakrapath, Kathmandu, Nepal	Achyut Nepal	Supplier of electro-

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SN	Name of the company/ supplier	Address	Contact person	Equipment/ materials/ services
	International Pvt. Ltd.	E-mail: tradelinknepal@gmail.com Tel: +977- 1-4370121, 4376218	Managing Director 9851042471	mechanical and electrical equipment
67.	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 transaction, dispute resolution, litigation & settlement, research & investigation of criminal and civil cases
68.	Anu Iron Suppliers	Khandbari, Sankhuwuasabha	Narayan Shrestha 9852023768	All types of iron rods/bends
69.	Pradhan Store	Khandbari, Sankhuwasabha	Krishna Bhagat Pradhan 9852023680	All brands of cements, iron rods, bricks and construction materials
70.	SS Store	Khandbari-1, Sankhuwasabha	Ramod Shrestha 9849956054	Grocery, hospitability and consumable items

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.

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