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# NEPAL HYDROPOWER DEVELOPMENT PROJECT

## QUARTERLY REPORT

USG FY18Q1

Oct 1, 2017 – Dec 31, 2017

Submitted: January 10, 2018

This document was prepared for the United States Agency for International Development Nepal (USAID/Nepal) by Deloitte Consulting LLP on Contract No. AID-367-TO-15-00003. The contents are not the responsibility of USAID, and do not necessarily reflect the views of the United States Government.

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DELOITTE CONSULTING LLP

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## ACRONYMS

Acronym	Term
<b>ADB</b>	Asian Development Bank
<b>AIIB</b>	Asian Infrastructure Investment Bank
<b>APPIIC</b>	Accelerating Private and Public Investment in Infrastructure
<b>BOOM</b>	Build-Own-Operate-Maintain
<b>BOOT</b>	Build Own Operate and Transfer
<b>CEA</b>	Central Electricity Authority
<b>CEO</b>	Chief Executive Officer
<b>CERC</b>	Central Electricity Regulatory Commission
<b>COP</b>	Chief of Party
<b>CTGIC</b>	China Three Gorges International Company
<b>CWE</b>	China International Water and Electric Corporation
<b>CY</b>	Calendar Year
<b>DBFOT</b>	Design Build Finance Operate and Transfer
<b>DERC</b>	Delhi Electricity Regulatory Commission
<b>DFID</b>	Department for International Development
<b>DoED</b>	Department of Electricity Development
<b>DoS</b>	Department of State
<b>E&amp;S</b>	Environmental and Social
<b>EIA</b>	Environment Impact Assessment
<b>EIB</b>	European Investment Bank
<b>EPC-F</b>	Engineering, Procurement, Constructing and Financing
<b>ERC</b>	Electricity Regulatory Commission
<b>ESIA</b>	Environmental and Social Impact Assessment
<b>FC</b>	Financial Close
<b>FDI</b>	Foreign Direct Investment
<b>FX</b>	Foreign Exchange
<b>GiZ</b>	Energizing Development (EnDev) Nepal
<b>G-to-G</b>	Government-to-Government
<b>GMR</b>	Grandhi Mallikarjuna Rao
<b>Gol</b>	Government of India
<b>GoN</b>	Government of Nepal

Acronym	Term
<b>HPP</b>	Hydropower Project
<b>IBN</b>	Investment Board of Nepal
<b>IFC</b>	International Finance Corporation
<b>IFI</b>	International Financial Institution
<b>IPPs</b>	Independent Power Projects
<b>JAPL</b>	Jai Prakash Associates Ltd.
<b>JICA</b>	Japan International Cooperation Agency
<b>JVA</b>	Joint Venture Agreement
<b>JVC</b>	Joint Venture Company
<b>KEPCO</b>	Korean Electric Power Corporation
<b>KUSL</b>	Kathmandu University School of Law
<b>LoA</b>	Letter of Agreement
<b>MCC</b>	Millennium Challenge Corporation
<b>MoE</b>	Ministry of Energy
<b>MoU</b>	Memorandum of Understanding
<b>MW</b>	Megawatt
<b>NEA</b>	Nepal Electricity Authority
<b>NHDP</b>	Nepal Hydropower Development Project
<b>NVVN</b>	National Vidyut Vyapar Nigam
<b>NWEDC</b>	Nepal Water and Energy Development Company
<b>PANI</b>	Program for Aquatic Natural Resources Improvement
<b>PAPs</b>	Project Affected Populations
<b>PDAs</b>	Project Development Agreements
<b>PIU</b>	Project Implementation Unit
<b>PPAs</b>	Power Purchase Agreements
<b>PPP</b>	People Public Partnership
<b>PTA</b>	Power Trade Agreement
<b>SAPDC</b>	SJVN Arun-3 Power Development Company
<b>SARI/EI</b>	South Asia Regional Initiative for Energy Integration
<b>SEBON</b>	Securities Board of Nepal
<b>SJVNL</b>	Satluj Jal Vidyut Nigam Ltd.
<b>SOE</b>	State-Owned Enterprise
<b>Transco</b>	Transmission Company

Acronym	Term
<b>UK</b>	Upper Karnali
<b>USAID</b>	United States Agency for International Development
<b>USD</b>	United States Dollar
<b>USEA</b>	United States Energy Agency
<b>USG</b>	United States Government
<b>UT-1</b>	Upper Trishuli 1
<b>VAT</b>	Value Added Tax
<b>VDC</b>	Village Development Committee
<b>WECS</b>	Water and Energy Commission Secretariat

# INTRODUCTION

The Nepal Hydropower Development Project (NHDP) (# AID-367-TO-15-00003) agreement (the Contract) was concluded between USAID and Deloitte Consulting LLP on July 9, 2015.

This Quarterly Report (this Report) recounts NHDP's progress during the Second Quarter of Project Year 3 (this Quarter), which is also the First Quarter (Q1) of USG Fiscal Year 2018. In addition to describing NHDP's activities and outputs during this Quarter, it also discusses the project's plans and strategies going forward.

## Project Focus and Background

NHDP's mission is to assist the Government of Nepal (GoN):

- To expand access of Nepali citizens to clean, high quality electricity services
- To realize the nation's hydropower potential, both in domestic and export markets

NHDP is achieving these aims by providing transactional and policy support to the Ministry of Energy (MoE) and the Investment Board of Nepal (IBN). On the transactional side, NHDP supports both of these institutions in their development of six medium and large hydro power projects (HPPs). Five of those projects notionally<sup>1</sup> fall under the control of IBN, while the other, the Upper Trishuli-1 (UT-1) HPP, lies under the aegis of the MoE. On the policy side, NHDP is assisting the MoE to develop policies and laws that *inter alia*, facilitate sector restructuring, regional electricity trading, and making the Nepal Electricity Regulatory Authority (ERC), Nepal's fledgling sector regulator, operational.

During the first two years of NHDP's work Nepal has taken major steps to end the country's chronic energy deficits and to provide an appropriate framework for sector development. During NHDP's third year, notwithstanding the disruptions attending what were to date, the most momentous elections in the nation's history, the GoN has continued to take steps to make the Power Trade Agreement (PTA) between the Government of India (GoI) and the GoN operational, and to facilitate regional power trade through the construction of new transmission lines. Institutionally, following the passage of the Electricity Regulatory Commission Act, also in NHDP Year 3, the MoE has taken the lead in giving the new regulator an appropriate legislative and sub-legislative framework, and identifying possible commissioners for appointment early in the New Year. Finally, in what may be the biggest step forward in the entire history of Nepal's electricity sector, on September 14, just days before the commencement of this Quarter, the GoN signed its Compact (the Compact) with the Millennium Challenge Corporation (MCC). That agreement, to be executed over a five year period commencing in approximately two years, is expected to bring more than a half billion US dollars into Nepal's electricity transmission and transportation sectors.

On the transactional side, taking advantage of the momentum generated in the previous quarter, three medium and large HPPs, two under the management of IBN and one at the MoE, also continue to make substantial progress toward financial close (FC). At IBN, the Arun 3 HPP is scheduled to reach FC and begin construction in 2018. Also at IBN, the Joint Venture Agreement (JVA) for the West Seti HPP was concluded between the Chinese Developer, China Three Georges International Corporation, and the Nepal Electricity Authority on behalf of the GoN. At MoE, the Parties, the Nepal Electricity Authority (NEA) and the Korean Sponsor, Nepal Water and Electricity Development Company (NWEDC)

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<sup>1</sup> Not all of those HPPs are currently active, as discussed in more detail in this report. While the IBN Act grants the Investment Board jurisdiction over projects of 500 MW or more, in Nepal, politics often manage to outflank legal niceties.

Private Limited, have initialed that project's Power Purchase Agreement; a formal signing ceremony is expected early in Calendar Year (CY) 2018. FC should follow soon after. With or without FC in the near-term, the developer has said that it is prepared to begin construction in October, 2018.<sup>2</sup>

Finally, during this Quarter the Managing Director of NEA formally requested technical support from NHDP and from the Department for International Development (DFID) for *“responsible management of the electricity sector and transforming itself into a financially stable, efficient and modern utility”*. This request opens the door to close engagement on a number of the issues that NHDP and DFID have dealt with at MOE and IBN, as well as on matters of regulatory compliance.<sup>3</sup>

NHDP has been heavily involved in each of these policy and transactional activities and will continue to support the GoN and its affiliated administrative bodies to drive sector development and the FC of large HPP transactions.

## REDUCING RISKS

### The Risk Matrix

Owing to their long gestation periods and immense upfront costs, it has often been said that “time is the enemy of hydropower projects.” Over the course of the past two years, NHDP has identified and described approximately sixty distinct risks that typically delay HPP development in Nepal. A full accounting of those risks can be found in NHDP's Risk Baseline Matrix which was revised during NHDP's Second Year. Working closely with DFID-funded consultants at IBN, NHDP continues to develop and update that matrix. Some risks that are frequently encountered in Nepal include:

- Risks related to inadequate or incomplete project documents
- Country and sovereign risks
- Risks arising from gaps and defects in the legal and regulatory framework
- Risks arising from gaps or defects in the environmental and social framework
- Communications risks
- Risks related to gaps in the cross border electricity trading framework
- Risks arising from gaps in the local banking and insurance framework
- Risks arising from a lack of capacity

This Report addresses a number of the risk-related issues that have arisen under Components 1 and 2, describes NHDP's activities related to each such risk during this Quarter, and identifies plans to continue the work in subsequent quarters of Year 3 and beyond.

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<sup>2</sup> The fact that construction might begin prior to a formal financial closing further corroborates the point that when one speaks of the progress of HPPs in Nepal, often one is not speaking the commercial *lingua franca* of traditional project finance, but rather, in the Humpty Dumpty theory of language where “When I use a word, it means just what I choose it to mean - neither more nor less”. (“Through the Looking Glass” Chapter 6). The Arun 3 HPP also has found a way to thrive in the absence of commercial certainty associated with FC, as is described in Part 1, below.

<sup>3</sup> By formalizing its support to NEA, NHDP is now officially providing technical support to all government entities directly engaged in Nepal's hydropower sector: MoE, IBN, Department of Electricity Development (DoED) and NEA.



# SUMMARY OF ACTIVITIES THIS QUARTER

## PART 1: SUPPORT TO IBN

### (A) TRANSACTIONAL SUPPORT

No significantly large HPP has ever achieved FC in Nepal. However, the successful closure of other large projects in the region demonstrates that when even one large project achieves FC, that milestone can dramatically change a country's perceived risk of doing business. Under favorable circumstances, this can encourage the construction of other large projects, changes in governmental approaches to project development, and perhaps most importantly, the way the government, its representatives, and project developers perceive the value of their participation in such projects. Such changes can raise national pride and instill the belief that future projects are not only valuable, but doable. For all of these reasons, NHDP's transactional support has one overriding goal: to bring at least one large HPP to FC. This section describes the transactional support provided by NHDP to IBN during this Quarter related to large HPPs in their various stages of development.



*Concluding Session of NHDP training Module 6: Commercial Considerations for Cross Border Power Trade, Hotel Radisson, Kathmandu, November 2017*

To date, three large Nepali HPPs have concluded Project Development Agreements (PDAs) that subsequently have been approved by the Cabinet of Ministers.<sup>4</sup> Since the conclusion of those PDAs, each of the developers has been working to achieve FC within the time frames established in those contracts. Despite setbacks, occasioned by *inter alia*, earthquakes, social unrest and government delays, the Arun 3 HPP (at IBN) is

scheduled to reach FC in the next Quarter.<sup>5</sup> Since Arun-3 funding has been agreed in a G-2-G arrangement rather than by way of a purely commercial transaction, the precise moment of financial close is often as much a matter of interpretation as of facts. For the Arun 3 project, the facts are as follows:

- The PDA was concluded by the Government of India (GoI)-owned state undertaking in Nepal and the GoN;

<sup>4</sup> Upper Karnali, Arun 3, and Upper Trishuli-1. The PDA is a framework agreement developed at IBN through USAID and DFID support to HPPs which is comprised of, among other elements, the GoN's concession terms. The PDA is the anchor agreement for all large projects; it has even been modified by IBN for application to other types of infrastructure projects, including large cement and solid waste plants. IBN's early successes with the PDAs on HPPs has resulted in the successful use of the agreement by the MoE on the UT-1 HPP. There is also some discussion about developing a "short form" of the PDA for much smaller HPPs.

<sup>5</sup> In commercial contracts, FC occurs when all the project and financing agreements have been signed and all the required conditions contained in them have been met. FC triggers the draw-down of funds (e.g., loans, equity, grants) so that project implementation (as distinguished from preparation) can begin.

- SJVN Arun-3 Power Development Company (SAPDC) or Satluj Jal Vidyut Nigam Ltd. (SJVN), the Nepali registered company carrying out the project, is wholly owned by the by public sector undertaking of GoI;
- All of the power produced at Arun-3 will be exported to Indian state-owned utilities under Power Purchase Agreements (PPAs) over and above the free power of 21.9 per cent allocated to GoN;
- On 22 February 2017 sixty-one percent of the total project funding was approved by the GoI;<sup>6</sup>
- The balance of the total cost, estimated to be USD 1.4 billion, will also be arranged by GoI funding institutions, India's Project Finance Corporation, and the State Bank of India;
- Although Indian Prime Minister, Narendra Modi, had been scheduled to come to Nepal to lay the foundation stone in October 2017, Nepali elections, scheduled for early December 2017, have delayed that event; and
- Nevertheless, the award of construction packages continues and construction will begin shortly.

Also this Quarter, on November 17, 2017, NWEDC, the developers of the Upper Trishuli-1 HPP, (under MoE) and the Nepal Electricity Authority (NEA) initialed a Power Purchase Agreement (PPA) that should allow that project to reach FC before the end of CY 2018. During this Quarter, the developers of the West Seti HPP, China Three Gorges International Company (CTGIC), also concluded their Joint Venture Agreement with NEA, possibly clearing a path to the commencement negotiations with IBN on a PDA early in 2018.

For other projects at IBN, hope continues to prevail over the experiences of contemporary history. A number of projects remain stalled at IBN, owing to among other circumstances, environmental issues, the withdrawal of strategic developers, wet-dry season issues, a lack of sector restructuring and sector regulation, slow progress in implementing the power trade agreement with India, uncertainty surrounding the allocation of local shares, political risks, infrastructure (transmission line) constraints, resolution of environmental issues, and the caution of international lenders. Many see in December's election results auguries of stable government, an essential success feature in many long-developing HPs. While names of the left-aligned parties in the governing coalition may do little to encourage foreign direct investment (FDI) in large hydropower, government continuity may well go far to stabilize the recent years of fragile and uncertain large project oversight. Such stability might even re-invigorate efforts to strengthen the legal framework and power of the Investment Board. A full discussion of the progress of each NHDP supported HPP at IBN is provided below.

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<sup>6</sup> <http://pib.nic.in/newsite/PrintRelease.aspx?relid=158627>

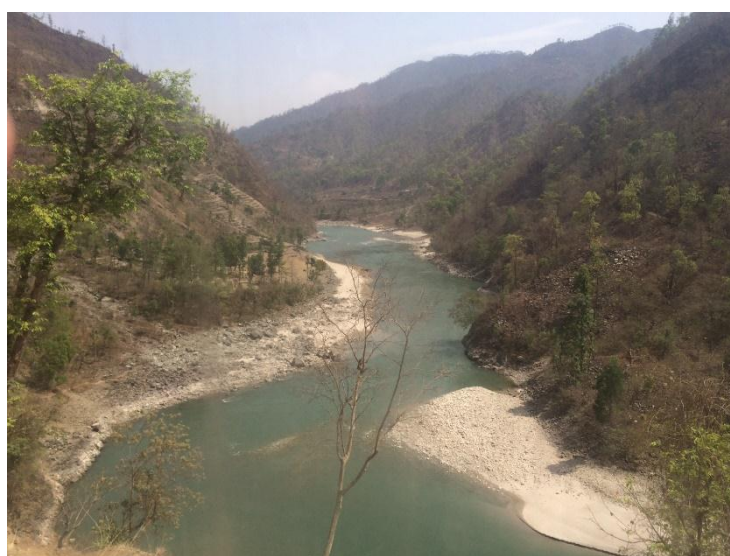
**Table 1**

**Upper Karnali HPP**

Project	Overview	Progress So far (as on 31 December 2017)	Expected Outcomes for Year 3
<b>Upper Karnali (900 MW)</b>	<ul style="list-style-type: none"> <li>This HPP is in fact, 2 projects. Project 1 is to design and build power generation facilities; project 2 is to build a dedicated transmission line for the evacuation of power to India</li> <li>Commercial operations are expected to commence in 2022; this will probably be pushed back at least a year</li> <li>The PDA provides 'free' power (12%) and equity (27%) to GoN, with 2 years to reach financial close after conclusion of the PDA. According to the Memorandum of Understanding (MoU) with IBN, GMR is responsible to build the transmission line</li> </ul>	<ul style="list-style-type: none"> <li>The International Finance Corporation (IFC) has withdrawn from its 10% equity sponsorship role in the project but will continue as lead debt arranger for 1.2 billion USD of project debt</li> <li>On 8 January 2017, IBN extended the PDA timeline for Financial Closure (FC), granting a 1-year extension to the developer in accordance with Section 3.1.3 of the PDA. Despite this, however, the HPP failed to meet the new FC deadline of September 2017.</li> <li>On 13 November 2017, the IBN Board extended the FC deadline for Upper Karnali to 18 September 2018.</li> <li>Although both Asian Development Bank (ADB) and European Investment Bank (EIB) have expressed interest in investing in the project, the results of environmental studies now place the successful conclusion of any support by ADB and EIB in jeopardy (see below)</li> <li>GMR also intends to offer a 30 percent equity stake to K-water, a Korea state owned company; K-Water are in ongoing discussions on the matter</li> </ul>	<p><b>Scenario 1 – Project continues (status quo)</b></p> <ul style="list-style-type: none"> <li>Support to IBN on local benefits and compensation</li> <li>Legal support as required on the PDA's conditions subsequent and other project documents</li> <li>Public Outreach and communications to local communities through IBN Communications Unit</li> <li>Review of financing documents (if required)</li> <li>If new equity investors are introduced, legal support to review/revise joint venture agreement (JVA)</li> </ul> <p><b>Scenario 2 – Project suffers additional delays</b></p> <ul style="list-style-type: none"> <li>Support IBN if GMR withdraws or if GoN seeks to terminate</li> </ul>

**Project Updates**

As distinguished from the other projects that have reached or approached FC during this Quarter, the Upper Karnali (UK) HPP is the only large HPP in Nepal being financed on a non-recourse or limited-recourse basis. This fact makes it essential for the project's PDA and PPA each to be bankable. All of the project's legal documents will be required to meet the scrutiny of the international lenders, including investment and credit review committees of multilateral banks including the Asian Development Bank and the World Bank.



*The Karnali River*

During this Quarter, a possibly existential environmental risk to the Upper Karnali project was raised by the Asian Development Bank (ADB).<sup>7</sup> The identified risk has two facets: (i) issues related to critical habitat and (ii) issues related to biodiversity offsets. Representatives of ADB<sup>8</sup> believe that these risks are insurmountable. A brief discussion of the two issues follows.

### **(i) Critical Habitat**

The Upper Karnali project area has been classified by ADB as being critical habitat for the Golden Mahseer and the Blunt-nosed Snow Trout.<sup>9</sup> As such, the project must meet the following requirements of the ADB Safeguard Policy Statement (SPS):

*"No project activity will be implemented in areas of critical habitat unless the following requirements are met: (i) there are no measurable impacts, or likelihood of such, on the critical habitat which could impair its high biodiversity value or the ability to function; (ii) the project is not anticipated to lead to a reduction in the population of any recognized endangered or critically endangered species or loss in area of the habitat concerned such that the persistence of a viable and representative host ecosystem would be compromised."*

Constructing a dam and having with a low flow expanse of approximately 50km makes it very difficult to argue that there will be no measurable adverse impacts. Further, the Environmental and Social Impact Assessment (ESIA) has identified the impacts on the Mahseer as significant. Evidently, it will also be difficult to demonstrate that there will be no reduction in the Mahseer population.

### **(ii) Biodiversity Offsets**

The Upper Karnali HPP's ESIA found that the project will affect 200 hectares of aquatic habitat. In order to offset the impacts from that low flow zone, it will be necessary for the project to acquire an equivalent area that can be set aside for conservation use. There are numerous challenges to accomplish this, including: (i) finding suitable aquatic habitat; (ii) acquiring the river – in effect convincing the GoN to donate the section of river; (iii) persuading the GoN to designate the land/river for conservation use; (iv) developing an effective biodiversity management plan; (v) developing the administrative infrastructure to run the conservation area and implement the plan, (vi) agreeing on budgetary and financial structures, (vii) undertaking large-scale capacity building and training, and (viii) establishing an effective monitoring and reporting program comprised of extensive aquatic biodiversity surveys. If undertaken, this would be one of the largest and most complex offset programs ever attempted by ADB. Delays to the project would be significant and the risk of failure is expected to be high. In view of the seriousness of the ESIA impacts on the project financing, IBN expects to hold a meeting with representatives from all concerned (ADB, GMR, and IBN) early in 2018.

Although it is too early to know yet how this information will affect the Upper Karnali HPP, objectively, it appears that the project's viability has taken a turn for the worse. It is doubtful that there are many other financing institutions willing to replace ADB. Further, even if a

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<sup>7</sup> ADB does not have the mandate to arrange debt for the UK project; nevertheless the ADB remains a potential anchor lender alongside the Asian Infrastructure Investment Bank (AIIB), the The European Investment Bank (EIB), the International Finance Corporation (IFC), and the Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.(FMO). Given the importance of the project, ADB has already expended significant resources on project due diligence. ADB have also asked GMR to develop an ESIA for the project. GMR appointed ERM, a consultancy, to conduct this work. The consultants have produced a first draft on which ADB has requested additional information, including impact studies on the fish and ecology of the low flow (de-watered) zone and the affected communities. There is little data on the fish species.

<sup>8</sup> Though not formally, the ADB.

<sup>9</sup> This classification obtains both under the ADB Safeguards Policy Statement, 2009 and the IFC PS6 Criterion 3b (Migratory/congregatory species), i.e., habitat known to sustain on a cyclical or otherwise regularly basis between 1-95% of the global population of a migratory species.

replacement for ADB could be arranged, these events may burden the new government with insurmountable political risks. Given ADB's rationale for withdrawal of support, even if the project were to go forward, USAID and NHDP would need to carefully reconsider further transactional support. It is not an exaggeration to say that the failure of Upper Karnali, the first HPP in Nepal to employ purely commercial terms, could exert a negative impact on all other large projects, going forward.

### **Other Delays**

This is not the first set-back to affect the Upper Karnali HPP. While the company continues to face delays resulting from GoN inaction (the government was also severely affected by the earthquakes of 2015), since IFC withdrew its pledge of equity support to the project in 2016, GMR has struggled to find additional equity participants for the project.

Other delays have also resulted from the failure to fully clarify implementation mechanisms for the Power Trade Agreement ("PTA") between Nepal and India. Part of that is a result of delays by the Indian Central Electricity Regulatory Commission (CERC) to issue final, binding guidelines on cross-border trade issues. Such delays often exert a knock-on effect. Failure to implement the PTA causes delays in completing transmission networks. These, in turn, cause delays in identifying buyers and concluding necessary PPAs, which will also require regulatory authorizations in India and now perhaps, also in Nepal. Over and above these are the delays caused by the need to agree and implement regional and bilateral agreements related to regional and cross-border trade. During this Quarter the GoN, through the Board of IBN, approved GMR's request for a one-year extension to its deadline under its PDA for FC.<sup>10</sup> Also during this Quarter a long-planned, NHDP supported trip to Dailekh to conduct further training for journalists and stakeholder engagement activities was interrupted by pre-election bombings and other civil disturbances.<sup>11</sup>

Having described all of the new challenges to this HPP, it should also be noted that the Upper Karnali project's Managing Director remains confident that the project is "very close" to succeeding. Time, and these Quarterly reports, will tell.

### **NHDP Activities in Support of the Upper Karnali HPP**

During this Quarter, NHDP support to the Upper Karnali HPP included the following activities:

- Support to IBN (GoN) at meetings with developers related to requests for extensions in time limits for FC under the PDA
- Submission of a mechanism (and a draft policy) for the allocation of local shares to the ad hoc Committee on Local Shares at IBN
- Planning and execution of media activities (production of radio programs, with broadcasting to begin next Quarter)
- Planning a Study Tour to Bhutan for the benefit of IBN administration and staff
- Continuing support to IBN on training for journalists and stakeholder engagement activities in Dailekh for the project-affected districts

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<sup>10</sup> <http://kathmandupost.ekantipur.com/news/2017-11-14/financial-closure-deadline-extended.html>.

<sup>11</sup> <http://kathmandupost.ekantipur.com/news/2017-11-17/incidents-of-attack-on-leaders-stoke-concern.html>.  
<http://kathmandupost.ekantipur.com/news/2017-11-18/nc-maoist-centre-leaders-attacked.html>.



**Table 2**

**Arun 3 HPP**

Project	Overview	Progress So far (as of 31 December 2017)	Expected Outcomes for NHDP Year 3
<b>Arun 3 (900 MW)</b>	<ul style="list-style-type: none"> <li>SJVNL and IBN concluded the PDA for Arun 3 in November, 2014. Under the PDA, the developer is also responsible to build the transmission line</li> <li>Commercial operations are expected in 2022</li> <li>The PDA Provides 'free' power (21.9%) to GoN, with 2 years to reach financial close</li> <li>Land Acquisition transactions related to the construction sites are progressing and should be concluded immediately prior to FC</li> <li>The power from the HPP will be evacuated from Dhalkebar in Nepal to Muzaffarpur in India. SJVN Arun-3 Power Development Company (SAPDC), the special purpose vehicle of SAPDC in Nepal, has entered into memorandum of understanding for the lease of forest land with the Department of Forest.</li> <li>On 22 February 2017, the Cabinet of the GoI approved the investment proposal for generation component of Arun-3 Hydro Electric Project in Nepal by SJVN Limited along the following principal lines: <ul style="list-style-type: none"> <li>--Investment for generation component of Arun-3 HPP (900 MW) for an estimated cost of INRs. 5723.72 crore (USD 855 Million) at May 2015 price level;</li> <li>--Completion period of Arun-3 HPP is 60 months from the date of financial closure, which is planned for September 2017;</li> <li>--Ex-post facto approval for the existing implementing agency, already incorporated in the name of SJVN Arun-3 Power Development Company Limited (SAPDC), registered in Nepal as a 100% subsidiary of SJVN Limited for implementing Arun-3 HPP; and</li> <li>--Any component of work already or being made by the Nepalese authorities must be so certified by Central Electricity Authority (CEA) (India) and accordingly deducted from Arun-3 HPP cost requirements.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FC is scheduled to be achieved in the next quarter (Jan-Mar 2018). While the Project could have declared FC last quarter, the developer did not opt to that option to save on interest repayments, drawdowns to finance construction are expected to be postponed until such funds are actually required</li> <li>Letter of Agreement (LoA) of package-I for main Works issued to M/s Jai Prakash Associates Ltd. (JAPL) on 22nd Sept, 2017</li> <li>The FC deadline for the Project has been extended until 30 March 2018 by the IBN Board decision of 13 November 2017.</li> </ul>	<ul style="list-style-type: none"> <li>NHDP will continue to provide support on local benefits and compensation through IBN</li> <li>NHDP will continue to provide legal support as required on the PDA's conditions subsequent and other project documents</li> <li>NHDP will continue to provide resources for public outreach and communications to local communities</li> <li>Review of financing documents (if required)</li> <li>Support on implementation of PTA as required</li> </ul>

**Project Updates**

After years of concerted efforts by the GoN through IBN and the GoI, and despite numerous setbacks, Arun 3 HPP (at IBN) is scheduled to reach FC in the next Quarter. Narendra Modi, Prime Minister of India, is still expected to visit the dam site in the Spring of CY 2018 to participate in the formal laying of the foundation stone for the construction.



*The Arun River*

### NHDP Activities in support of Arun 3

During this Quarter, NHDP support to the Arun 3 project included the following activities, herein described as being either “directly” or “indirectly” related to the project.

#### Work directly related to the Project:

- Working with DFID consultants at IBN, continuing to revise the Arun 3 Transactional Risk Matrix
- Support to IBN (GoN) at meetings with Arun 3 Developers related to requests for extensions in time limits for FC under the PDA
- Development of a mechanism (and a draft policy) for the allocation of local shares

#### Work indirectly related to the Project:

- Planning of media activities (radio public service announcements)
- Development and delivery of an overarching communications plan for the IBN communications unit
- Planning and implementation of a study tour to Bhutan for the benefit of IBN.

### **Arun-3: Success Story**

**Project Background:** On 25 November 2014, IBN and the Indian developer, Satluj Jal Vidyut Nigam Limited (SJVN), signed the Project Development Agreement (PDA) for the 900 MW Arun-3 Hydroelectric Project (HPP). This export-oriented project is expected to bring Nepal USD 3.48 billion (approximately) over 25 years. Further benefiting the country, SJVN has agreed to provide 21.9 percent of their energy produced, a value of USD 1.55 billion (approximately), free of charge. Another USD 1.07 billion (approximately) will be paid in royalties and USD 0.86 billion (approximately) will be realized by taxes and customs.

#### **Nepal Hydropower Development Project Support**

**Transactional support:** When USAID’s Nepal Hydropower Development Project, (NHDP) began work in 2015, the assistance needed included supporting IBN in its monitoring of the developer’s compliance with post-PDA conditions. The NHDP team also assisted with the legal and regulatory obligations that both parties needed to satisfy under the PDA before financial close, release of construction funds, and initiation of construction could occur.

**Communication Support:** Large-scale hydropower and infrastructure projects tend to face particular challenges with respect to public awareness and perception. It is for this reason that careful communication interventions are critical in such cases. During its first two years of transactional assistance to IBN, NHDP has supported IBN’s Communications Unit in the conduct of stakeholder meetings in Num Village Development Committee (VDC), Nepal, just above the Arun-3 construction site. NHDP additionally conducted an intensive 2-day workshop in Khadbari, Nepal for local journalists serving districts affected by the Arun-3 HPP.

**Table 3**

**West Seti HPP**

Project	Overview	Progress So far (as on 31 December 2017)	Expected Outcomes for Year 3
<b>West Seti 750 MW</b>	<ul style="list-style-type: none"> <li>This project has not yet reached PDA</li> <li>Because this is a large, domestic project, the GoN and the CEO of IBN have identified it as a priority, moving forward</li> <li>China International Water and Electric Corporation (CWE), a Chinese SOE, and the GoN signed a MoU in August of 2012, pursuant to which CWE will own 65% of the project company, the GoN 25% and local nationals 10%</li> </ul>	<ul style="list-style-type: none"> <li>The HPP has run into delays in finalizing the JVA, but the Developer has not stopped project preparation</li> <li>The Developer is currently in the process of conducting geological and technical studies for the purpose of determining the optimum capacity of the plant</li> <li>Because the structure of the project is not yet known, it is unclear how much support NHDP can provide</li> <li>JV has been concluded by both parties (NEA and CWE (CTGIC)) on 16 November 2017.</li> </ul>	<ul style="list-style-type: none"> <li>IBN retains control of the project</li> <li>NHDP supports IBN on any revisions required on the JVA, and on PDA negotiations</li> </ul>

**Project Updates**

On November 16, 2017 the long-awaited JVA between China Three Gorges International (CTGIC), the Chinese developer, and GoN through the NEA, was signed and concluded, thereby opening the door to work on the PDA commencing early in CY 2018. Following conclusion of the JVA, IBN is expected to manage the project on behalf of the GoN.

Nevertheless, outstanding issues remain. The most critical issue for Joint Venture Company (JVC) incorporation in Nepal is the lack of an enabling Directive that would allow CTGIC to capitalize the investment incurred by it in China for the Project in the JVC. Additionally, the tariff rates for sale and purchase of generated power remains another stumbling block.

**NHDP Activities in support of West Seti**

During this Quarter NHDP continued to support IBN as the parties sought to resolve the significant outstanding issues identified above.

NHDP and the DFID-funded consultants at IBN continue to support using the West Seti JVA as the starting point for the development of a standard form JVA Template that could be used on other domestic projects. The JVA contract is just one of the numerous standard form project documents



*A Small Village near Proposed Dam Site of Arun 3, Sankhuwasbha District*

that are required to harmonize and fast-track HPP development in Nepal, including the PDA



and the PPA. DFID consultants at IBN, and NHDP are continuing to work with the DFID-funded international law firm of McCarthy Tetrault (Toronto) to template the PDA and the recently finalized domestic PPA for the UT-1 HPP (MoE) and perhaps even to merge the documents into a single contract. This could streamline future domestic projects. In order for this to occur, agreement will have to be reached with NEA. Whether this work can be accomplished in time to employ the document on the West Seti project will probably depend on the attitude of the new GoN towards simplifying and streamlining such large projects, and the willingness of NEA to move the process forward.

Issues also remain regarding the possible use of the Engineering, Procurement, Construction and Financing (EPC-F) arrangement, often used by Chinese developers in large infrastructure projects. During this Quarter NHDP provided important advice to MoE with respect to the EPC-F arrangement. In most instances EPC-F is a model often associated with sole sourcing, which poses high financial risks owing to transparency issues.<sup>12</sup>

### West Seti: Success Story

**Project Background:** After much debate on how to move the project forward, on 29 February 2012, the project received a much needed impetus when GoN entered into a MoU with Chinese developer China International Water and Electric Corporation (CWE), subsidiary of China Three Gorges International Corporation (CTGIC) on the construction of the West Seti Dam in a Public Private Partnership Model. As per the MoU, CTGIC will have 75% stake while the Nepal Electricity Authority (NEA) will have 25% stake in the joint venture. On 16 November 2017, ten months after the JVA, NEA and CTGIC signed a deal to form a joint venture company to develop the 750-megawatt West Seti Hydropower Project. The joint venture company will develop a business plan to execute the project and the project development agreement (PDA) will be signed with the IBN. The joint venture company will be formed after IBN approves the JVA and the investment proposal of CTGIC. The West Seti Hydropower Development Company will be governed by the board in which CTGIC and NEA will appoint members.

### Nepal Hydropower Development Project Support

**Transactional support:** NHDP, embedded at IBN, worked closely with IBN and NEA to develop a Joint Venture Agreement (JVA) between NEA and CTGIC. NHDP supported drafting and negotiation of the JVA for IBN and NEA and the parties had put in their initials in the JVA in January, 2017 which was followed by approval of the JVA by the NEA Board. But the JVA remained unexecuted for almost ten months because of delays by CTGIC in getting its board to approve the agreement. Local press releases raised the possibility of NEA canceling the project due to the developer's failure to conclude the JVA.

Lastly, it should be noted that West Seti also has other drawbacks, the most obvious of which is that in the event that the Nepali grid is not able to absorb all of the HPP's output, it will be impossible to evacuate the excess to India for sale there or elsewhere in the region.<sup>13</sup>

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<sup>12</sup> If the funding is exclusively managed by the EPC-F contractor, in the absence of regulation, the burden will fall exclusively on the rate payer. See *infra* at Part 3, "EPC-F" for additional detail on the ongoing EPC-F work.

<sup>13</sup> A prior concern highlighted in the previous quarterly report was the uncertainty of obtaining IFI or United States Government (USG) support for a large storage project. During this Quarter issues regarding USG transactional support were resolved,

NHDP expects to support IBN when negotiations get under way on either the PDA or for the first combined version of the PDA and the PPA, provided they can be combined in time to support the work.

**Table 4**  
**Tamakoshi 3 HPP**

Project	Overview	Progress So far (as of 31 December 2017)	Expected Outcomes for NHDP Year 3
<b>Tamakoshi 3</b> <b>(650 MW)</b>	<ul style="list-style-type: none"> <li>This HPP has not yet achieved PDA</li> <li>In January 2016 Tamakoshi 3's major developer, Statkraft of Norway, withdrew from the project for technical and commercial reasons</li> </ul>	<ul style="list-style-type: none"> <li>IBN has identified this as a priority project and a number of investors are expressing some interest</li> <li>DOED, MoE issued the survey license to this Project TBI Holding this quarter. The survey license has been issued for 650 MW. This has been challenged in court and MoE has apparently prevailed</li> </ul>	<p><b>Scenario 1: IBN retains control</b></p> <ul style="list-style-type: none"> <li>NHDP, working with DFID consultants, will provide transactional support to IBN, but will not act as the GoN's transaction advisor in the event that the project is the subject of a public tender</li> <li>Legal support as required on the PDA and contractual package, with consent of USAID/USG</li> </ul> <p><b>Scenario 2: GoN allocates the Project to NEA (Genco); NHDP provides support to MoE</b></p> <ul style="list-style-type: none"> <li>Project supports MoE/NEA Genco on PDA negotiations with consent of USAID/USG</li> </ul> <p><b>Scenario 3: If project is sole sourced or EPC-F</b></p> <ul style="list-style-type: none"> <li>NHDP support may be limited subject to discussions with USAID.</li> </ul>

## Project Updates

A full description of work to date on this HPP can be found in the previous quarterly report. In sum, beginning immediately after the previous developer, Statkraft, withdrew from the project, both NHDP and the DFID-funded consultants at IBN recommended using Tamakoshi 3 as a model for domestic, dollar denominated HPPs under a public tender procurement (PPP arrangement). IBN, which had previously determined to take the project forward by way of an international competitive tender, was derailed by the MoE, whose DoED<sup>14</sup> issued a Survey License to TBI Holdings in October 2017. Prior to the election, MoE indicated, that on the basis of that survey license, it would take control of the project. IBN filed a law suit to enjoin MoE from doing so but after numerous postponements, in late December its motion was quashed.<sup>15</sup>

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opening the door to NHDP's support through IBN. If the Chinese developer and GoN agree to employ the EPC-F financing model, there will be no participation by IFIs, thereby making this issue moot as well.

<sup>14</sup> DoED is the operational unit of MoE.

<sup>15</sup> IBN's claim was not a frivolous one. Under the IBN Act, the Investment Board has jurisdiction over HPPs exceeding 500 MW. Overlapping jurisdiction, classified as a legal risk in the Risk Matrix, can only be mitigated by improving the legal framework. Going forward, it is likely that MoE will "right-size" the project to be below the 500MW threshold set out in the IBN Act, further strengthening its jurisdictional claim.

### NHDP Activities in support of Tamakoshi 3

A full discussion of possible approaches that might be used to take the Tamakoshi 3 HPP forward, as well as funding options for the project, were addressed in the previous quarterly report. As an alternative to using the World Bank's Kabeli HPP funds to provide initial funding for a Project Implementation Unit at IBN, NHDP and DFID jointly suggested in a video conference with the World Bank (the Bank) that the Bank should consider repurposing the Kabeli funds to IBN in support of the Tamakoshi 3 HPP. The intention was that the support could be used to prepare the project for a public tender. The Bank received these informal recommendations with interest and signaled its intention to take the matter forward, either at IBN or with GoN. It should be noted that even if the Bank decides to make the repackaging of Tamakoshi 3 an object of its support, there is no way to know whether the GoN will agree to such an arrangement. Resolution of this issue is not expected until at the earliest, when the new government is formed in the New Year.



**Table 5**

### Upper Marsyangdi HPP

Project	Overview	Progress So far (as on 31 December 2017)	Expected Outcomes for Year 3
<b>Upper Marsyangdi (600 MW)</b>	<ul style="list-style-type: none"> <li>This HPP has not yet reached PDA</li> <li>The Equity breakdown initially envisioned is for GMR to take 90% and the IFC 10%</li> <li>This project has lain dormant while GMR focuses on achieving FC on the Upper Karnali Project</li> <li>Successful completion of UK is seen as a pre-condition to moving this project forward</li> <li>This project is not moving owing to a provision in the IBN Rules that applies a two percent levy of the total project cost on the Developer in consideration of negotiating and signing the PDA.</li> </ul>	<ul style="list-style-type: none"> <li>No developments to report</li> </ul>	<ul style="list-style-type: none"> <li>No outcomes expected in Y3</li> <li>NHDP support will be put in abeyance until project movement occurs</li> <li>NHDP will provide the same type of support as provided to the Upper Karnali HPP</li> </ul>

### Project Updates and NHDP Activities in support of Upper Marsyangdi

There was no discernable change in the status of the Upper Marsyangdi HPP during this Quarter. A full description of work to date on this HPP can be found in the previous quarterly report.

Although it is nearly axiomatic that progress on this HPP by the developer, GMR, is pre-conditioned on the Upper Karnali HPP achieving FC, it is not out of the question that sometime in the New Year, the new Nepali government could make other arrangements to move the project forward.

## **(B) DEVELOPMENT OF PROJECT DOCUMENTS**

NHDP and DFID-funded consultants at IBN have long publicized the advantages of developing standard form contracts for all types of HPP projects.<sup>16</sup> By employing a suite of project documents that have been templated according to the type of project concerned,<sup>17</sup> a procuring authority enjoys a number of advantages.<sup>18</sup> Over and above the technical advantages of having “no surprises” each time a new project comes along, the numerous administrative bodies that must approve such contracts will find standardized project documents much easier to administer. NHDP has been working closely with DFID-funded consultants at IBN and with the NEA to develop standard form project templates which will go far to facilitate large Independent Power Projects (IPPs).<sup>19</sup> NHDP activities this Quarter on projects where templating is envisioned include the West Seti JVA, the UT-1 PPA and the merger of the PDA and the PPA on domestic projects.

## **(C) COMPENSATION AND BENEFITS (INCLUDING LOCAL SHARES)**

All Donor Partners active in the sector agree that the subject of benefits and local shares requires a common policy and mechanism. This awareness is directly informed by NHDP and DFID’s work on the Policy and Transactional Risk Matrices. This work has been discussed in detail in NHDP’s previous quarterly report and the Annual Report for Year 2.

Developing HPPs, both large and small, in Nepal is never easy. Private sector developers face huge capital, financing and offtake risks, risks associated with long gestation periods, engineering and construction risks, and the ever present geological and hydrological risks. Development becomes even more challenging where private financing requires bankable contracts and compliance with international health and safety standards. Developers are not the only, or even the most important stakeholders who have to bear the fardels of HPP development in Nepal. Individuals, families, and local communities affected by large infrastructure projects, often referred to as project affected populations (PAPs), will nearly always be required to surrender aspects of their land, possessions, and livelihoods in order for the government to realize its ambitious infrastructure projects.

Historically, Nepal has employed a classical, two-pronged approach to mitigate damage to PAPs, comprised of fair compensation to PAPs and royalty payments to the government. Recently, constitutional requirements have been bolted on to this classical approach. Article 59(5) of the Constitution of 2015 gives local communities the right to make investments in natural resources, including water resources. In so doing, it ensures PAPs’ right to invest in the equity (shares) of HPP companies.<sup>20</sup>

But this direct equity share model has serious disadvantages. First and most obviously, equity ownership is not a risk-free proposition. Thousands of PAPs will be exposed to losses

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<sup>16</sup> Standard form contracts for HPPs often include a concession contract (in Nepal, the PDA), a power purchase agreement (PPA), a Joint Venture Agreement (JVA), a Government Support Agreement (Government Guarantee), various direct agreements between the banks and the developer, and interconnection and use of system agreements with the transmission service provider.

<sup>17</sup> For example, the templates will change depending on whether the project is a run-of-river or a storage project, whether the capacity will be sold for export or domestically, and finally, whether the power purchase agreement will be denominated in US Dollars or Nepalese Rupees (NPR).

<sup>18</sup> First, the costs of procurement are reduced, both for the procuring government entity and for the developer. Second, transparency is increased. Third, the development of, and frequent use of, templates requires government stakeholders to agree on approaches and obligations that are reflected in the standardized contracts.

<sup>19</sup> The process of developing a template requires a significant amount of review by international legal advisors, as well as review and re-reviewing by project lawyers and the GoN administrative body concerned.

<sup>20</sup> To facilitate the allocation of these “local shares”, Nepal’s securities regulator issued regulations allowing PAPs to realize capital gains both through share sales and the receipt of dividends. The regulator now also requires HPP companies to offer ten percent of their paid-up capital for purchase by PAPs.

if an HPP fails to make profits. The PAP equity shares also run the risks associated with all investment bubbles. Equity risks inhere to the shares, not as widely assumed at the moment of project hand back, but from the moment they are created. Second, although domestic IPPs have long appreciated the need to raise additional capital from PAPs, for a number of reasons, foreign investors have little interest in offering local investors an equity stake in their company. The main reason is that foreign investors have no need to list on a local and unexplored exchange. Cumbersome regulatory compliance requirements also reduce foreign investors' optimism, while the prospect of organizing shareholders' meetings for thousands of people having little knowledge of corporate management can be guaranteed to dampen the spirits of the most ardent investor. But now the constitution requires it. For these reasons, foreign investors have asked for a mechanism to make this burden as simple as possible.

One recommendation that has been proposed, the "indirect approach", entails incorporating a special purpose vehicle (SPV) company comprised of PAPs. According to this approach an intermediary company (the PAP Company) would be established by a relatively small number of PAPs as shareholders. Upon incorporation the PAP Company would offer shares to other PAPs who would like to invest. Ultimately, The PAP Company would be listed on the exchange. Employing this approach enables the HPP company to preserve its "private" character and to not dilute its shares with PAP investors. Unfortunately, this approach has a fatal drawback, which lies in the logistics that are necessary merely to establish the intermediary company. To start, it is completely impracticable for any company to have thousands of promoters. Who will be the project promoters of the PAP Company and how will they be selected from among the thousands of possible candidates? Who will be responsible to run the PAP Company? How will the board members be appointed? How will staff be hired? Add to that recurrent expenditures of company operation that will increase costs and diminish the PAP's dividends. Then there are corporate taxes which also eat away at the PAP's benefits. Most crucially, what happens to the PAP Company when the HPP is handed back to the government? After the most superficial analysis, it is clear that the indirect approach is practically unworkable.

Rather than resorting to this indirect approach, NHDP and DFID consultants have recommended solving the problem using a mutual fund model. Unlike the commonly understood mutual fund where the fund operates as a vehicle to diversify investments, this model works in the opposite way, focusing all investments in the shares of the HPP Company. Were this approach to be employed, PAPs would be eligible to subscribe to the units of a mutual fund which would purchase only shares in the HPP Company. The principal advantage of this approach is that it addresses the developer's interest in maintaining its private status, while also attending to the interests of PAPs who seek a liquid market. Its principal advantages are its simplicity, cost effectiveness, tradability, and liquidity.

Nepal has taken the unorthodox step of ensuring that PAPs get a "fair deal"<sup>21</sup> in exchange for their sacrifices. The joint recommendations of NHDP and DFID are intended to make certain that the GoN's steps should not deter investors, especially foreign investors, from investing in Nepal's patrimony. The mutual fund model, while preserving liquidity and tradability, hallmarks of the direct ownership model, can also reduce compliance with stock exchange listing requirements sought by foreign investors.

### **NHDP Activities during the Quarter and Going Forward**

It is rare that an opportunity arises where experts in a given field contemporaneously, yet in relative isolation, apply themselves to derive an acceptable and workable approach to

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<sup>21</sup> Guaranteeing subjective satisfaction is widely recognized as being a high risk-low reward undertaking, particularly when it is enshrined in a nation's alpha law.

precisely the same problem. Yet this is precisely what happened during this Quarter when Development Partners, contractors and local experts converged on the issue of how best to manage local shares. Even as DFID-funded consultants at IBN and NHDP began work to develop a local shares allocation mechanism for IBN, using Nepal as a case study, the International Finance Corporation (IFC), also began a project to develop a “knowledge product” that will inform people throughout the region who are dealing with similar issues.<sup>22</sup> Operating separately, these two “laboratories of democracy”<sup>23</sup> took advantage of their unique opportunity to develop and test mechanisms to resolve a common and pressing problem in a manner verging on the scientific.

While IFC’s work is arguably more wide-ranging and academic in nature, the NHDP/DFID work at IBN is intended to ensure that HPP transactions, specifically the Arun 3 and Upper Karnali HPPs, are swiftly concluded and in a way that is safe for the people of Nepal. This Quarter, the NHDP/DFID-funded team participated as observers in two stakeholder workshops sponsored by the IFC and delivered its report with recommendations to IBN. In mid-December IBN’s ad hoc committee convened to review the report.<sup>24</sup> It is expected that the committee will decide whether to present the report in its current form to the IBN board, or to first circulate it to other stakeholders including the Nepal Rastra Bank, commercial bankers, the Securities Board of Nepal (SEBON), the MoE, and independent power producers for comment. However the committee decides to proceed, eventually, the report will be submitted to the IBN Board for approval, and possibly thereafter to the Prime Minister for consideration as a national policy. Concurrently, NHDP and DFID will use the report as basis for advice to MoE with respect to its transactional support to the developers of the UT-1 HPP. This work will continue into the next quarter and probably beyond.

#### **(D) SOCIAL AND ENVIRONMENTAL ISSUES**

As the above discussion on the Upper Karnali HPP clearly illustrates, as HPP development gains momentum and as the number of projects, both large and small, increases, conflicts arising from the competing interests of hydropower development and the use of water for irrigation and other productive activities are inevitable.<sup>25</sup>

During the Third and Fourth Quarters of Year 2, the Water and Energy Commission Secretariat (WECS), a GoN administrative body, produced a draft National Watershed Resources Policy (Watershed Resources Policy) which was presented by USAID’s Program for Aquatic Natural Resources Improvement (PANI) Project in late April, 2017. That policy underlines the need for comprehensive river basin planning and the development of a complete, workable legal and regulatory framework to govern all aspects of water use management. It also clearly identifies the need to expand the development of environmentally, technically, and economically feasible hydropower. Because comprehensive water resource planning remains the biggest missing element in Nepal’s

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<sup>22</sup> The IFC work will also inform policy makers in Nepal.

<sup>23</sup> The metaphor, “laboratories of democracy”, if not a perfect fit, nevertheless aptly describes the exercises related to the local shares issue undertaken in Nepal during this Quarter. The phrase was coined by U.S. Supreme Court Justice Louis Brandeis in the 1932 decision of New State Ice Co. v. Liebmann and describes how an entity “may [ . . . ] serve as a laboratory; and try novel social and economic experiments [ . . . ]”.

<sup>24</sup> The committee includes members from Ministry of Energy, Ministry of Finance, Ministry of Law and Justice, SEBON and IBN CEO (as Chair).

<sup>25</sup> Following international practices, Nepal’s applicable law, the Water Resources Act, prioritizes the use of water for hydropower first, following drinking, irrigation, livestock, and fisheries.



HPP development framework, NHDP intends to engage in this work, at least in part, through collaboration with the PANI Project.

During this Quarter NHDP's continued collaboration with DFID consultants at IBN to plan specific interventions, including addressing indigenous peoples' issues in areas that will be affected by the Arun 3 and UT-1 HPPs. This work is expected to commence as soon as the work on local shares at IBN concludes and upon the completion of IFC's work on the same subject. During this Quarter NHDP has also held discussions at MoE aimed at supporting the development of financial, social, and environmental policies related to the development of transmission lines. This is discussed in more detail in Part 2 of this Report.

### **(E) SUPPORT TO THE COMMUNICATIONS UNIT AT IBN**

As this report indicates, the development of hydropower, especially storage-based hydropower, inevitably results in the displacement of project affected populations ("PAPs") and social upheaval. The development of sound compensation, mitigation, and benefits sharing policies also shares a transactional nexus with all government institutions dealing with HPP issues, especially IBN. IBN's Communications Unit and NHDP continue to work together to develop and implement HPP communications strategies and plans specifically focused on the regions, districts, and villages most affected by HPP development.

One of the areas where IBN continues to provide essential support is in the development and execution of strategic, focused communications interventions aimed at PAPs. These are often conducted on site, in the most affected regions, districts, and municipalities. During this Quarter NHDP supported the IBN Communications in the following ways:

- Through local experts, NHDP provided guidance to the Communications Unit on the proper planning and structuring of their local and district level interventions
- Continued to provide local communications expertise (informed by international best practices) to assist IBN's Communications Unit to refine and implement a Stakeholder Engagement and Communications Action Plan which can be used as a model for other planning tools related to stakeholder mapping and engagements, resettlement planning, compensation management, and the allocation of local shares.
- Assisted IBN to develop a policy and a mechanism for Compensation and Benefits (Including the allocation of Local Shares) which will form the basis for concerted communications during NHDP Year 3
- Plan and execute media activities (radio programs) in support of large HPPs, specifically Upper Karnali and Arun 3
- Financial, logistical, and some technical support, that will allow the Communications Unit to conduct training and stakeholder interventions out in the regions and districts that will be particularly affected by large HPP development. The specific intervention planned for this Quarter was postponed owing to pre-election and social unrest; it is expected to be rescheduled for the next project quarter early in CY 2018.
- Planning of a Hydropower Study Tour to Bhutan for senior IBN staff and consultants now scheduled for the next project quarter early in CY 2018.

During NHDP's Third Quarter, NHDP and IBN will continue to work closely with the Communications Unit at IBN to:

- Plan and execute a stakeholder engagement in Dailekh, Nepal

- Continue to develop radio programs in support of large HPPs
- Consider new interventions as circumstances dictate

## **(F) BANKING AND INSURANCE SECTOR SUPPORT**

The number of small HPPs in Nepal far exceeds large ones. Naturally, local investors gravitate to the smaller projects. They are more manageable, more financeable domestically, and though the current processes are less than transparent, locals know and are comfortable with the currently obtaining “rules of the game”.<sup>26</sup> It is logical, therefore that the nation’s banking and insurance sectors should play a key role in support of these projects. These commercial sectors should also have significant financial resources to mobilize in support of Nepal hydropower. So far, however, Nepali insurance and banking institutions have failed to realize their potential as supporters and stakeholders of what should be one of Nepal’s most lucrative sectors. This has been to the detriment of the sectors, and to domestic HPP development generally.

During this Quarter, again working with DFID consultants at IBN, NHDP continued to conduct research and hold discussions with local stakeholders which formed the basis for a report, also completed during this Quarter. It is now planned to circulate the report to be the subject of a half-day workshop in Kathmandu early in CY 2018.

## **(G) CAPACITY BUILDING**

Over the course of this project, it has become apparent that many of Nepal’s project and policy risks are directly related to a lack of capacity which can only be mitigated through capacity building. Capacity building will undoubtedly also be required to make the new electricity sector regulator operational, a subject that is covered in detail in Part 2 of this Report.

Throughout NHDP’s Year 2 and continuing unabated through this Quarter, NHDP offered formal training and capacity building on matters related to large HPP development and specific issues as they arose for the



*Participants of NHDP training doing Post-test and Training Evaluation, November 2017*

MoE, DoEd, NEA, IBN and selected students and faculty from the Faculty of Law of Kathmandu University. This training is attended by between fifteen and twenty participants each week and the diversity and number of participants is growing. The goal of the training is to provide new staff members in these institutions (predominantly engineers) with an exposure to some wide ranging issues related to HPP development, including among others, the implementation of major projects, sector restructuring, case studies from the region and

<sup>26</sup> No doubt, all of these reasons figured into the calculus when, in June 2017, an IPPAN stakeholder workshop to discuss the then pending legislation to establish an independent electricity sector regulator, met with near unanimous opposition.



internationally, and identifying and mitigating risks. During this Quarter, modular training continued at DoED during which time the project delivered most of two modules: “Regulation, the Regulator, and Tariffs”; and part of a module on “Regional Electricity Market Development and Cross Border Power Trade”. Currently NHDP is completing the final seven-session Module of this training. The project intends to continue the work for as long as project counterparts find the information beneficial.

Although during this Quarter pre-election political unrest delayed an NHDP/IBN Communications planned stakeholder workshop in Dailekh in support of the Upper Karnali HPP, the long-anticipated Parliamentarian’s Study Tour to Vietnam conducted in the previous quarter catalyzed planning for another HPP related study tour to Bhutan, now scheduled to take place during the first quarter of CY 2018.<sup>27</sup> The Bhutan trip, like the Vietnam study tour will be supported by USAID.

During this Quarter NHDP also prepared for a study tour to New Delhi for GoN officials responsible to draft the Regulation for the ERC Act. That study tour, now scheduled for the second week of the New Year, will include visits to India’s Central Electricity Regulatory Commission (CERC) and the Delhi Electricity Regulatory Commission (DERC). The study tour was planned on the premise that face to face meetings with operational regulators in India will give the drafters of the Nepali Regulation a better sense of how regulation works in India and the kinds of activities that Nepal’s new regulator might be expected to undertake when it commences work early in 2018. This study tour is addressed in more detail in Part 2 of this Report.



*Distributing Certificate for Successful Participants, November 2017*

Unfortunately, plans for NHDP to support a study tour for selected representatives of IBN and perhaps MoE to Tbilisi, Georgia, discussed in previous quarterly reports and the Year 2 Annual Report, have been shelved, owing to USAID funding uncertainties and the project’s need to re-purpose a number of activities to provide all possible support through

the remainder of the project to make Nepal’s new regulator operational.

Finally, during this Quarter, NHDP continued to build upon its relationship with the University of Kathmandu and its Dean, Professor Bipin Adhikari, PhD, Dean of the Faculty of Law at Kathmandu University<sup>28</sup> and his colleagues, some of whom participated in NHDP’s MoE training on Regulation and the subsequent Module on Cross-Border trade issues.

<sup>27</sup> The Bhutan study tour will be comprised of visits to large, operating HPPs and visits with Bhutan’s electricity regulator and briefings on the role of the regulator in both domestic and cross-border activities, and regional power trading mechanisms by, among others, NHDP Team members.

<sup>28</sup> <http://www.ku.edu.np/kusl/>

Owing to the continuing legal support that NHDP is providing to the MoE and at IBN, NHDP's Chief of Party, Rob Taylor, and project legal specialist, Semanta Dahal, have been asked to support the Faculty of Law as advisors and visiting faculty members as it inaugurates its new LL.M. Degree program entitled "Masters by Research in Energy and Infrastructure Law". Going forward, in addition to lectures at Kathmandu University, NHDP will also welcome three legal interns to the project, two of whom will come from the university.

During this Quarter, and with the support of The US Embassy, NHDP assisted with the planning and execution of a presentation by Mr. Richard Kauffman, Energy Czar for the State of New York and former advisor to the Obama Administration on renewable energy. Mr. Kaufman was joined by Rob Taylor who spoke on the evolution of electricity markets over the past century. Mr. Kauffman spoke on the efforts currently being taken in the State of New York to upgrade the state's grid to meet the opportunities offered by emerging technologies.

NHDP's support to Kathmandu University continued as the two participants in the law school's new LL.M. degree in Hydropower Law began their internships at NHDP and participating in the ongoing modular training for GoN administrative bodies described above. NHDP is honored and pleased to support the Kathmandu University Faculty of Law as it develops long-term, sustainable education for the next generation of Nepali legal advisors to the hydropower sector.

#### **NHDP Interacts on Evolution of the Electricity Sector in Nepal with University Students**

On 1 November, 2017 Rob Taylor, NHDP Chief of Party gave a presentation on '**The Evolution of the Electricity Sector in Nepal**' to the students of Schools of Law and Engineering at Kathmandu



University, Dhulikhel. He was joined by Mr. Richard Kauffman, Chairman of Energy and Finance for New York State, also known as the Energy Czar of New York, who also discussed with students the changing scenarios of energy development and their implications, both in New York and Nepal.

Rob emphasized that the electricity sector evolution happens the same way everywhere, that there is an evolutionary timeline and every country in the world has a place on it. He pointed out that the timeline has a number of phases. These

include concession, nationalization and monopoly, decline and fall, search for new investment, opening the sector through restructuring, reforms and regulation, and maturation and adaptation to new technologies. He gave a picture of where Nepal is on that timeline and described how it is moving forward and picking up speed.

Mr. Kauffman and Mr. Taylor also had a brief chat on the occasion with Dr. Ram Kantha Makaju Shrestha, Vice Chancellor, Professor Bhola Thapa, Registrar, Professor Subodh Sharma, Dean of School of Science, and Professor Bhupendra Bimal Chhetri, Dean of School of Engineering.

Source: <http://ku.edu.np/news/index.php?op=ViewArticle&articleId=2084&blogId=1>

**OTHER ACTIVITIES AT IBN DURING THIS QUARTER:**

NHDP's support to IBN is specifically focused on HPP development. To a lesser extent, NHDP has also supported other work streams at IBN, specifically:

- Working with DFID consultants at IBN with a view to:
  - Improve IBN's organizational structure to make it more efficient
  - To move IBN to develop a framework for managing projects in a number of discrete phases rather than on an ad hoc basis
  - Prepare and deliver training to meet the requirements of existing and newly arriving staff

**(a) Work with DFID-Funded Consultants:**

During this Quarter, NHDP supported DFID-funded consultants at IBN on the following activities:

- Working with NEA to finalize the UT-1 PPA
- Working with IBN to finalize the West Seti JVA
- Continuing to keep the Risk Matrices for ongoing HPPs up to date
- Discussions with World Bank representatives to consider possible World Bank Support to re-start and publicly tender the Tamakoshi 3 HPP
- Capacity building at IBN and MoE
- Development and delivery of the IBN Report on Local Shares

## PART 2: SUPPORT TO MoE

In close consultation with Donor Partners, NHDP's support to MoE, both transactional and policy related,<sup>29</sup> is intended to assist the GoN to achieve Nepal's hydropower potential, both domestically and in export markets, and to contribute to electricity sector restructuring. On the transactional side, NHDP is supporting MoE and other GoN instrumentalities with the transactional matters that will bring the Upper Trishuli-1 (UT-1) HPP to FC. On the policy and legislative side, NHDP is assisting the MoE to establish an independent electricity sector regulator and to develop policies and laws that *inter alia*, facilitate regional electricity trading. These two work streams, transactional and policy related, are discussed separately below.



Upper Trishuli-1 Site for Power House and Camp, Melung of Rasuwa District

### (A) HPP TRANSACTIONAL SUPPORT

#### Upper Trishuli-1 HPP (216 MW) – MoE

Table 6

#### Upper Trishuli-1 HPP

Project	Overview	Progress So far (as of 31 December 2017)	Expected Outcomes for Year 3
<b>Upper Trishuli-1 (216 MW)</b>	<ul style="list-style-type: none"> <li>The PDA was concluded by the MoE for the GoN and the Nepal Water and Electricity Development Company (NWEDC) on December 29, 2016</li> <li>UT-1 is expected to generate 1.46 billion units of net electricity per year-(1.15 billion units in the wet season and 306.7 million units in the dry season)</li> <li>NWEDC, is a joint venture between three Korean companies, one of which is the Korea South East Power Co Ltd and the International Finance Corporation (IFC), the private sector lending arm of the World Bank Group, and a Nepali investor</li> <li>Under the PDA, the PPA must be concluded within six months of entry into force of PDA</li> <li>NWEDC has almost re-built the access road between Power House and the Weir</li> <li>NWEDC hoped that FC would be achieved in one year after PPA signing (Dec 29, 2017) but regardless, will commence construction from October, 2018.</li> </ul>	<ul style="list-style-type: none"> <li>PPA negotiations successfully concluded when PPA initialled and signed by the parties. The PPA is now pending approval by the NEA Board.</li> <li>Work begun in conjunction with DFID to use international legal support to template the PPA and to incorporate the PDA and the PPA into a single, standard-form contract for use in connection with large domestic projects going forward</li> </ul>	<ul style="list-style-type: none"> <li>Financial Close during CY 2018</li> <li>Construction commencement expected by mid-CY 2018</li> <li>Continued work with Project Implementation Unit (PIU) support as in Y2</li> <li>Specific focus on compensation, benefits and the plans to allocate local Shares during first half of CY 2018</li> </ul>

<sup>29</sup> To date, the MoE's transactional work has focused on bringing the Upper Trishuli-1 HPP (UT-1) to PDA closure and subsequently, to FC. In the future, the GoN may allocate other medium or large-scale HPPs to the MoE. One of the MoE's affiliated administrative bodies, DoED, is responsible for all of the nation's small HPPs. Though NHDP will also be providing technical support to DoED in Year 3, NHDP's principal role under this contract is to support large and medium HPPs.



### Activities in connection with the Project

During NHDP's second year and continuing throughout this Quarter, NHDP provided direct support to the MoE on the UT-1 HPP on two simultaneous work streams, both of which flow directly from the conclusion of the PDA, approved by the Cabinet on 28 December 2016.

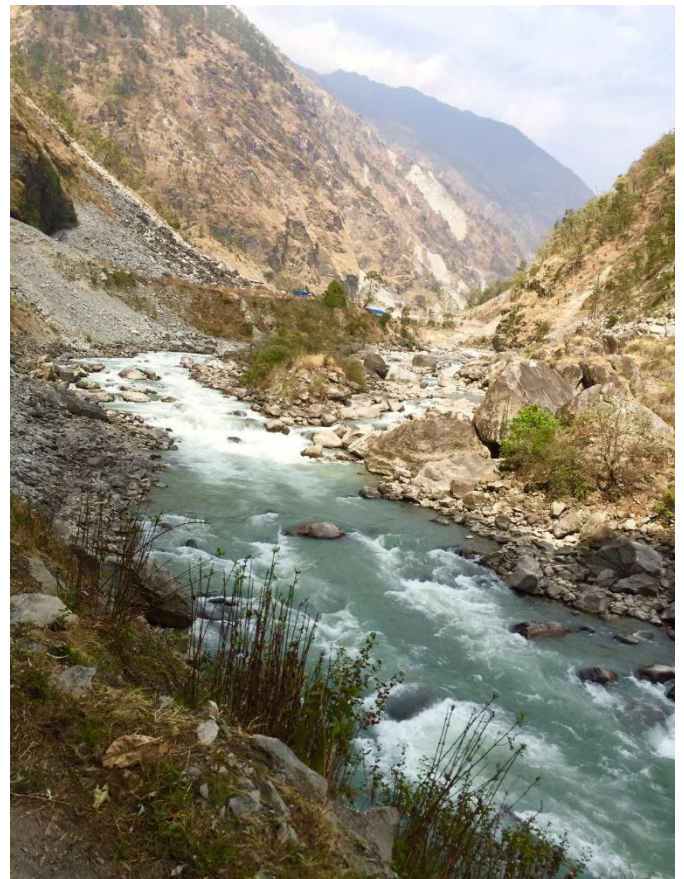
#### Work Stream One – The UT-1 PPA:

PPA negotiations successfully concluded on November 17, 2017 when the project PPA was concluded by the parties, NWEDC and NEA in Kathmandu.

Work Stream Two - Supporting the UT-1 Project Implementation Unit. This work stream was undertaken by NHDP in coordination with DFID-funded consultants at IBN ((Accelerating Private and Public Investment in Infrastructure; APPIIC). Since the signing of the PDA, meetings have followed on a monthly basis to allow the parties to monitor progress and discuss the work. During the previous quarter, MoE transferred the PIU from MoE to the DoED.<sup>30</sup> This Quarter, the first post-PPA signing meeting was held at the project site and attended by NHDP Legal Advisor, Semanta Dahal, who also acts as legal advisor to MoE and NEA in connection with the project.

Going forward:

- NHDP will continue to provide any support that may be required in relation to that project's reaching FC. Subsequently, NHDP will re-direct its support to MoE and NWEDC, the developer, on the basis of NHDP's report to MoE on local shares approaches and policies. NHDP will also support both parties on E&S issues arising from the plans submitted in conjunction with FC.
- Local Shares focus on compensation, benefits, and the plans to allocate local Shares during first half of CY 2018
- Working with DFID and with the assistance of international legal support, templates are being prepared for the PPA and to incorporate the PDA and the PPA into a single, standard-form contract for use in connection with large domestic projects



*Trishuli River*

### (B) GAPS AND DEFECTS IN THE LEGAL AND REGULATORY FRAMEWORK

It is widely acknowledged that Nepal's legal framework is inadequate to address a number of critical electricity sector issues, including the implementation of water resource planning for

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<sup>30</sup> DoED, the implementing arm of the MoE, is much better equipped than the MoE to manage contract implementation than is the ministry.

the benefit of HPPs, sector restructuring, regional trade, and the allocation of HPP-related benefits, including local shares.

The regulatory framework, a critical part of the legal framework, includes the laws and sub-legislation that administrative bodies use to carry out sector regulation. With NHDP's assistance, that portion of the electricity sector's framework has improved significantly during NHDP's Year 3. Beginning with passage of the ERC Act, NHDP has been instrumental in assisting the MoE to prepare the Regulation<sup>31</sup> and to build the capacity of the members of the MoE's *ad hoc* committee charged to draft the Regulation (the Drafting Committee), on the role of economic regulators in electricity sector development.

Under USAID's guidance and in coordination with Millennium Challenge Corporation (MCC), DFID, and other Implementing Partners, NHDP will continue assist the GoN to make the Electricity Regulatory Commission operational, and to train its leadership and staff to be effective regulators.

### **NHDP Activities in connection with the Regulator and Steps Going Forward**

NHDP's efforts in support of electricity sector regulation have been well documented in previous quarterly and annual reports. During this Quarter, in addition to the work described above in respect of the development of the Regulation implementing the ERC Act, NHDP also engaged with MCC, the World Bank, and the Department of State (DoS) to explore avenues for possible support to the Commission during the Stand Up Phase, which may last as long as two years. While MCC has made it clear that the bulk of its support to the Commission will come by way of a large project of support to the Commission, to begin when the MCC-Nepal Compact actually enters into force, the World Bank expressed a desire to have as many details as possible regarding the financial needs of the Commission prior to the commencement of MCC-N's large support contract taking over. For more detail, see Appendix 2, *infra*.

During the previous quarter, NHDP began to prepare the ERC Road Map, a package that can be delivered to the Commissioners upon their appointment containing pertinent information related to the first months of the Commission's work. The package also includes the drafts for the first Directives that the Commission will need to issue to enable the conduct of day-to-day business. That work has been ongoing during this Quarter. NHDP has also prepared a study tour for the members of the Drafting Committee to meet with national and state regulators in Delhi early in the New Year. The purpose of the tour, scheduled for early in the New Year, is to build the capacity of the Drafting Committee on national and state regulatory issues generally, so as to inform their final review of the draft Regulation.

This Quarter, NHDP also conducted initial discussions on a scope of work in support of the Commission's communications strategy.

### **(C) GAPS IN THE CROSS BORDER ELECTRICITY TRADING FRAMEWORK**

All electricity trade from Nepal to the South Asia region must pass through India. In October 2014, India concluded a treaty with Nepal, the Power Trade Agreement (PTA), which formalized the two nation's intentions significantly to expand cross-border trade in electricity. The PTA established a broad outline of the work, identified the responsibility of the parties,

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<sup>31</sup> In Nepal, in the hierarchy of sub-legislation, a Regulation is number one. A Regulation is the legal instrument, endorsed by the Cabinet, which guides the implementation of the Act by way of other sub-legislation.

and finally, identified the procedures that will be necessary to coordinate and operationalize cross-border trade in electricity. However, until the PTA is fully implemented, the benefits of increasing and streamlining regional electricity trade will remain unrealized and export projects will stall.

During the previous quarter, NHDP supported IBN and the MoE on issues arising from the PTA. NHDP also provided comments to IBN on the draft CERC “Guidelines on the Cross-Border Trade of Electricity”. While no additional support on this issue was requested, either by IBN or the MoE, during this Quarter, because a number of the issues remain resolved, NHDP will continue to provide support to both institutions on any issues arising from the PTA or the GoN’s efforts to properly implement it.

## **(D) DEVELOPMENT OF A COMPARISON OF EPC-F AND PROJECT FINANCE MODELS**

### **Background**

During NHDP’s second year, IBN asked NHDP to provide support to develop a briefing note on other financing models outside of the traditional project finance approach. The specific model to be compared, known as EPC-F (where the EPC contractor brings its own financing), had been suggested by interested project developers; it has also attracted the attention of the GoN. The EPC-F model is used by a number of countries including Japan, South Korea, and China, involved in hydro development in developing countries. Under this model, a loan is provided by the development bank of the investing country to the government of the country where the investment will occur, on the condition that the loan is used to employ contractors from the investing country. Under the model, since the bidding contractor is arranging the financing, the Offtake Agreement is generally included in the bid documents and it is on that basis that the contractor ties with project lenders. That work resulted in a report to IBN on the pros and cons of the EPC-F model.

NEA’s newly formed transmission company is currently evaluating various options for constructing the transmission projects and has identified the Build/Transfer (BT) model to be a preferred option. The MoE has expressed an interest in understanding the EPC-F model which has been proposed by some as being an alternative to the conventional EPC model. In that connection, the MoE asked NHDP to review and evaluate various models for procuring transmission projects. This concept note has reviewed a number of different project development models for transmission lines. Broadly, they are classified into three categories:

- The Traditional Model – EPC
- An Innovative Model - EPC with Finance (EPC-F)
- The Public Private Partnership Model (PPP) – JV/ Build, Own, Operate, Transfer (BOOT)/ Design, Build, Finance, Operate, Transfer (DBFOT)/ Build, Own, Operate, Manage (BOOM)

Each of these models has a different level of stakeholder involvement (public and private) and risk sharing requirements for the partners. The following is a snapshot of the pros and cons of each model reviewed:

**EPC:** EPC is a tried and tested model in Nepal. However continuing to use this model will require a high commitment of the GoN and the utility in order to raise financing and manage large projects.

**EPC-F:** Though innovative, the EPC-F model has yet to be tested on the subcontinent. However, as in most cases, if the project's financing is under a G-to-G framework agreement, the utility can be expected to have severely limited flexibility in the selection and award of EPC contractor.

**JV:** In contrast, as a PPP model, the Joint Venture approach provides for equitable risk allocation between the Government and the private sector. This helps to limit the utility's financial and operational exposure. Unfortunately, this model may also prove difficult to adopt, owing to changes in Nepal's legal framework that would be required.

**DBFOT/ BOOM:** Under the DBFOT/ BOOM Model, the GoN (and the service providers) will have a very limited financial risk exposure. Under this approach, construction and post-commissioning risk is borne by the private developer. The drawback to this model is that it requires a strong competitive bidding framework and regulatory approval process.

Separately, the Joint Secretary MoE also requested a briefing paper on a Compensation package for Right of Way land acquisition. This report was also delivered to the MoE in the last week of December.

## **(E) NEW SUPPORT TO NEA**

During the first week of December, the Managing Director of NEA formally requested technical support from NHDP and DFID to assist NEA on a number of issues including transactional matters, NEA operational matters related to initial restructuring activities, properly interfacing with MCC and the new regulator on matters including cross-border trading, tariffs, sector planning, and water resource management. The list is vast and not susceptible to many quick fixes; rather, it will require in-depth discussions, planning, capacity building.

Nevertheless, the request does provide a window of opportunity for NHDP (and DFID) to work directly with NEA on a continuous basis on issues that NHDP is already addressing with each of the other three administrative bodies that are directly involved with electricity sector and hydropower development (MoE, IBN, ERC).

NHDP has developed a proposed scope of work NEA in close cooperation



*Participants of Training Session on Introduction to Local Share, November 2017* at with

DFID, other Development Partners, and the project's local experts that allows the project to focus on its strengths, and to leverage the strengths of all stakeholders and Development Partners to meet the request of the Managing Director. The SOW includes:

- Financial modeling for a number of types of hydro projects
- Operationalizing models to calculate cost of service and tariffs
- Regulatory interface
- Risk Management
- NEA business planning
- Continuing legal support on project negotiations

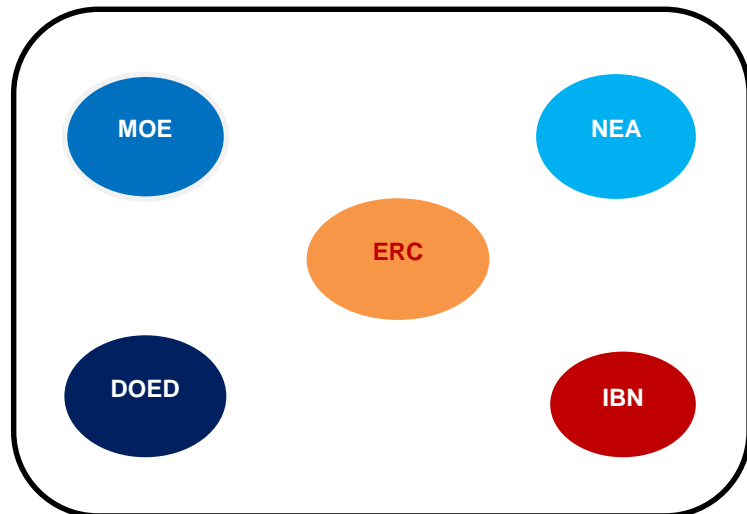


## (F) DONOR COORDINATION

### (i) Work with Development Partners

Diagram 1

NHDP is currently providing nearly daily support to all four of the GoN's principal extant HPP development institutions depicted in Diagram 1, and will work closely to help establish the newest (the ERC). As such, NHDP constantly crosses paths with a number of very important sector supporters, including DFID (the NHDP's closest donor colleague), the World Bank, the IFC, the Asian Development Bank, JICA, GiZ, and the three branches of USG donor support, USAID, DoS, and the Millennium Challenge Corporation (MCC).



During the previous quarter and continuing throughout this Quarter, NHDP met with Development Partners to:

- Identify ways to provide financial support for the Commission during its Stand-Up Phase
- Identify support required by NEA to comply with its new obligations under the ERC Act.
- Support the development of coherent policies and strategies to address the benefits sharing framework, specifically direct equity participation by PAPs
- Support the development of a bankable power purchase agreement (PPA) for UT-1;
- Support capacity building for Nepal's banking sector (specifically with respect to hydropower investment and developing a mechanism for local shares)
- Continue to refine the Road Map to make the ERC operational
- Agree a common approach to the development of local shares mechanisms and policies, and to share scarce expertise in an equitable manner
- Discuss how the World Bank's support of a PIU under the Kabeli HPP could be re-purposed to support preparing Tamakoshi 3 for a public tender during calendar year 2018

### (ii) Work With DFID

NHDP's and DFID's joint collaboration at IBN have been well documented in previous quarterly and annual reports. Current issues of daily collaboration between NHDP and DFID include:

- Continuing to develop and mitigate risks related to Upper Karnali and Arun 3 HPPs reaching FC
- Establishing and training the MoE's implementation unit for the UT-1 HPP
- Supporting the development of a bankable PPA for UT-1 and transforming that document into a bankable standard form template for all subsequent domestic HPPs

- Continuing to develop additional templates for all contracts required for large HPP development
- Addressing issues related to local benefits and investment participation
- Implementing a more rational phasing of NHDP work at IBN

NHDP will continue to work closely with Nepal's principal power sector donors, as depicted in the following table.

**Table 7**

**Donor Partners in Nepal's Hydropower Sector**

Donor Program	Areas of Cooperative Activity	Risk Focus
<b>USAID: South Asian Regional Initiative/Energy Integration (SARI/EI)</b>	<ul style="list-style-type: none"> <li>• Collaboration on training and twinning services, particularly cross-border Nepal-India electricity trading, capacity building for the future Nepal electricity regulator, and additional transaction advisory services to IBN.</li> <li>• Collecting outputs and requirements asked of the GoN from the 3 SARI/EI Joint Committees as potential areas for NHDP to support with technical assistance and capacity building.</li> </ul>	Utility Risk, Trading Risk, and Regulatory Risk
<b>USAID: Water Resources Management NHDP (PANI)</b>	<ul style="list-style-type: none"> <li>• Collaboration on E&amp;S issues to mitigate negative impacts of hydropower projects on rivers, river basins, and communities, particularly those populations most vulnerable such as female-headed households.</li> <li>• Training at the MoE on E&amp;S matters over and above basic EIA issues. Flag major E&amp;S issues that arise out of PDAs or project reviews and communicate with PANI to potentially provide mitigating solutions.</li> </ul>	Environmental, Social and Planning Risks
<b>Millennium Challenge Corporation (MCC) Energy Compact Preparatory Work</b>	<ul style="list-style-type: none"> <li>• MCC signed its Compact with GoN on September 14.</li> <li>• NHDP has collaborated closely with MCC on the drafting of legislation to establish a regulator. The Act to establish the Electricity Regulatory Commission of Nepal was passed by the Parliament in August and signed by the President on September 4, 2017. NHDP will continue to work with MCC and other Donor Partners to make the institution operational during the balance of Project Year 3 and beyond.</li> </ul>	Policy Risk, Country Risk
<b>Department of State Regional Activities</b>	<ul style="list-style-type: none"> <li>• Coordination with the Department of State on energy sector regulatory reform in Nepal to enable synergies particularly as it relates to establishing the Transco.</li> </ul>	Policy Risk Restructuring Risk Utility Risk
<b>World Bank</b>	<ul style="list-style-type: none"> <li>• Support to Kabeli-A HPP.</li> <li>• Nepal: Power Sector Reform and Sustainable Hydropower Development (PSRSHD).</li> <li>• Additional Financing for Nepal-India Electricity Transmission and Trade NHDP.</li> <li>• Kali Gandaki-A HPP Rehabilitation Project (KGAHPRP).</li> <li>• Nepal-India Electricity Transmission and Trade</li> <li>• During Year three NHDP has collaborated closely with the World Bank on repurposing Kabeli-A HPP funding to IBN; developing an effective legal framework for the ERC, funding the ERC during its Roll-Out Phase</li> </ul>	Policy Risk NHDP Completion Risk Trading Risk
<b>DFID</b>	<ul style="list-style-type: none"> <li>• At IBN, monitoring and mitigating various project risks for the Upper Karnali HPP and the Arun 3 HPP.</li> <li>• At IBN, supporting the Communications Unit.</li> <li>• At IBN, implementing a more rational phasing of project work.</li> <li>• At IBN, addressing issues related to local benefits and investment participation.</li> <li>• Continuing to develop other template contracts that can be used on all large HPPs.</li> <li>• At the MoE, supporting the establishment and training the Ministry's implementation unit for the UT-1 HPP.</li> <li>• At the MoE, supporting the development of a workable PPA for UT-1 and transforming that document into a bankable standard form template for all subsequent domestic HPPs.</li> </ul>	Policy Risk NHDP Completion Risk
<b>Asian Development Bank</b>	<ul style="list-style-type: none"> <li>• Nepal: Hydroelectricity Financing Project</li> <li>• Nepal: Power Transmission and Distribution Efficiency Enhancement Project</li> <li>• Nepal: South Asia Sub-regional Economic Cooperation (SASEC) Power System Expansion Project.</li> <li>• Nepal: Electricity Transmission Expansion and Supply Improvement Project.</li> <li>• Nepal: Energy Access and Efficiency Improvement Project.</li> </ul>	Policy Risk Restructuring Risk Utility Risk
<b>GiZ</b>	<ul style="list-style-type: none"> <li>• Energizing Development (EnDev) Nepal.</li> </ul>	Policy Risk and Energy Savings

# PROGRESS MADE TOWARDS PROJECT RESULTS

## PROJECT MANAGEMENT AND ADMINISTRATION

NHDP completed the following activities related to the management and administration of NHDP over the course of the quarter:

- Submitted timely quarterly accruals, quarterly reports, weekly reports, invoices and other required deliverables
- Worked closely with the COR to appropriately and carefully manage the project's budget, and to prioritize certain activities taking into account funding uncertainties
- Engaged closely with COR and CO's office to plan for mid-project budget realignment, anticipated to be submitted formally in USG FY18 Q03
- Re-assessed level of effort and skill set requirements in light of new regulator
- Continued ongoing activity related to procurement, international travel, financial management, compliance, and monitoring and evaluation
- Successfully organized and supported capacity building events for counterparts (including MoE Training Modules and Journalist Training in HPP-affected areas)
- Continued work with IBN and subcontractors as appropriate to refine and implement Communications Unit Annual Activities Plan
- Coordinated closely with subcontractors (and future subcontractors) to plan for future funding and implementation
- Met with counterparts to discuss execution of Year 3 work plan
- Obtained gate pass for select NHDP team members to enter Singh Durbar
- Participated in USAID meetings such as M&E Reflections workshop
- Submitted third round VAT refund with USAID support
- Renewed and funded annual contracts as appropriate
- Continued to meet financial obligations, reporting deadlines and daily activities
- Supported planning of study tours and other capacity building activities



## FORECAST FOR NEXT QUARTER

This section contains a summary of how NHDP intends to concentrate project efforts during the next quarter.

### **Component 1: Advisory support to facilitate the development and financial closure of large and medium hydroelectricity projects**

The following activities will be actively undertaken in IBN during the Second Quarter of Project Year 3. Many will carry over into the Third Quarter and beyond.

- Finalize the JVA for West Seti HPP and proceed to PDA negotiations
- Continue to support templating project documents
- Continue to work with GoN (specifically, IBN, MoE and NEA) to fulfill governmental obligations to achieve financial close for the Arun 3 and UT-1
- Continue to support development of a plan to re-launch Tamakoshi 3 HPP
- Continue to support the IBN Communications Unit with targeted interventions to support projects approaching FC
- Continue to support DFID, IBN, and MoE in the development of a comprehensive local compensation and benefits plan and support the development of plans into policies
- Support IBN on research and a workshop for the benefit of Nepal's Banking and Insurance Sectors
- Provide capacity building training for IBN, MoE and DoED, IBN, and selected representatives of the Kathmandu University, Faculty of Law, on principal issues related to major project financing in general

### **Component 2: Advisory support to the MoE, the NEA, other key sector stakeholders with designing and implementing targeted electricity sector reforms**

NHDP will undertake or continue to support the following activities during the Second Quarter of Project Year 3. Many will carry over into the Third Quarter and beyond.

- Support NEA and MoE on the UT-1 HPP
- Continue to support MoE on PPP options for power line procurement, including the EPC-F Model and if necessary, hold a workshop for relevant stakeholders on the subject
- Conduct a study tour for the Regulation drafting committee to Delhi to visit CERC and DERC.
- Continue to support the MoE as required during the ERC Roll-Out Phase
- Support the ERC during the Stand-Up Phase of making the regulator operational
- Continue to support the MoE, as required, to implement the PTA
- As opportunities arise, support USAID's PANI Project on legislation related to water resource management and planning
- Provide support to MoE as requested in respect of any other aspect of market restructuring
- Continue to work with DFID to support MoE and IBN in the development of a comprehensive local compensation and benefits plan and support the development of plans into policies

# IMPLEMENTATION ISSUES, OBSTACLES, AND DELAYS

## MoE

NHDP work under Joint Secretary Dinesh Ghimire has flourished. During NHDP's Second Year and continuing through this Quarter, the MoE has been an island of stability in a sea of troubles. Mr. Ghimire's strong support has resulted in a number of successes in NHDP's second year, notably, initialing the UT-1 PPA with a view to closure and FC in 2018, and the establishment of Nepal's electricity regulatory commission. This has opened the door to NHDP for additional work, both at DoED and NEA, each of which are fertile ground for NHDP's technical assistance and counsel.

At DoED, modular training continues and the participants are growing in number. This Quarter, the basic hydropower training offered weekly at DoED's facilities continues to draw participants from DoED, MoE, IBN and NEA. Starting this Quarter, it also includes law professors and graduate students from the Kathmandu University School of Law, and three NHDP's interns.

Over the course of the past year NHDP has provided legal and negotiating support to NEA on the UT-1 PPA. During this Quarter and on the strength of that success, NEA formally requested NHDP's support on specific tasks, including financial modeling, advice on hedging and Foreign Exchange (FX) exposure, as well as on broader areas of concern, including assisting NEA to efficiently and effectively interface with new electricity sector regulator. This last item is extremely important, for NEA, as the vertically integrated state-owned monopoly, poses by far the greatest potential threat to the viability and success of the new regulator. Anything that NHDP can do to quiet NEA's concerns about life under independent regulation, most of which is borne of fear of the unknown, will go far to ensure a smoother start up for the new commission. NHDP welcomes all opportunities to engage with NEA decision makers on all of these issues, in NHDP's Second Quarter of Year 3 and beyond.

## IBN

The continuing litany of the conditions at IBN as of September 30 is included in the prior quarterly report. A number of events occurred during this Quarter, which place the ability of NHDP to meaningfully support ongoing HPP projects at IBN into question.

The first event was triggered when the MoE indicated, on the basis of the survey license issued by its operational arm, DoED, that it would take control of the Tamakoshi 3 HPP, a project which hitherto had been managed by IBN. This in turn provoked the filing, by a public interest law firm, of a writ with the Supreme Court of Nepal to enjoin the MoE from doing so. While not acknowledged directly, it is widely believed that the public interest law firm acted as a straw man for IBN. As has become the custom, a hearing on the matter was docketed and postponed until just before the election, at which point the presiding judge recused himself on the basis of a conflict of interest. In late December however, IBN's motion for an injunction was quashed, doing significant damages to IBN's plans to revivify its dormant hydropower projects. Despite the fact that the MoE prevailed, the entire matter has further riven delicate relationships between MoE and IBN.

A second event occurred in mid-November when IBN's CEO disclosed that IBN had been directed to quit its current accommodations after the December elections. Going forward, parliamentarians will be occupying IBN's longstanding office space. It seems clear that at least for a while, until other space can be secured, IBN will share office space in the Prime Minister's facilities. While, under the Contract, NHDP is intended to embed one or more of its



consultants at IBN, due to the fact that NHDP's work is now being conducted in numerous locations across the GoN, a relocation from IBN to NHDP project offices will in no way encumber project work. This is to be distinguished from the DFID situation, where, if all "staff" at IBN will have to work remotely, the continuing uncertainty at IBN will linger.

The third event occurred on November 27 when the CEO announced that IBN would terminate all existing consultants at as of first January 2018. This announcement was precipitated at least in part by the ongoing contretemps between the bureaucracy at IBN and DFID over the role of DFID's consultants at IBN. This matter has been extensively documented in previous NHDP reports. In brief, DFID, after a year of indecision, determined to regularize its relationship with its IBN team at IBN, treating them as consultants and deploying them elsewhere in government as relevant work arises, rather than to continue to allow IBN to use them as employees. Going forward, DFID intended that they would work on the basis of specific SOWs agreed by IBN leadership and DFID. IBN asserted that such an arrangement would be unacceptable and a violation with its agreement with DFID. Going forward, the CEO indicated that IBN, rather than employ DFID funded consulting services, will procure consultants by way of a line item in the budget. While NHDP was broadly included in the CEO's announcement to terminate technical assistance, it is widely acknowledged that IBN's dispute is with DFID, not NHDP.<sup>32</sup>

The last event occurred during the second week of December when the leader of the DFID-funded consultants at IBN resigned. While consultant turnover is not unusual, this, together with prior events puts into question the future of DFID support at IBN as well as its support to other administrative bodies associated with electricity sector development in Nepal.

While the full import of these events cannot immediately be identified, NHDP will continue to offer its support to IBN on its existing and future hydropower projects. At the moment, the list of active HPPs is extremely brief. Two IBN projects, Arun 3 and Upper Karnali have concluded PPAs. While Arun 3 will begin construction in the New Year, Upper Karnali is facing an existential environmental compliance threat. Although IBN continues to represent GoN on the West Seti HPP, Tamakoshi 3, and Upper Marsyangdi, these are also in limbo, pending decisions from the new government, a government whose intentions with respect to the need to attract FDI in general, and more specifically the need for large hydro for regional as well as local development, remains to be known.

## PROPOSED CHANGES TO THE WORKPLAN

No additional formal changes to the Work plan have been identified, though it remains a living document and any adjustments will be submitted with the pending budget realignment request to USAID next quarter.

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<sup>32</sup> If there is any dissatisfaction at IBN with NHDP, it is owing to the fact that under its remit, NHDP is not permitted to provide support to IBN projects that are not hydropower projects.

# APPENDIX 1

## MONITORING AND EVALUATION

### 1. NHDP Training Evaluation

During this quarter, the NHDP team was heavily involved in training for MoE identified trainees (from DoED, NEA, IBN and MoE). Module 6 ended on 15<sup>th</sup> November 2017, Module 7 started on 30<sup>th</sup> of November and continues through 11 January 2018. Each MoE module has six or seven sessions (two hours for each) once a week. NHDP will continue this training for as long as counterparts consider it appropriate, and may continue to expand the opportunity to other counterparts as appropriate. The training module topics for MoE training were;

- Module 6: Regional Electricity Market Development and Cross Border Power Trade
- Module 7: Miscellaneous Matters of Hydropower Project Implementation in Nepal

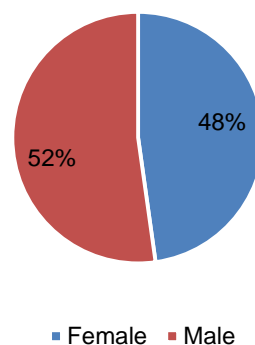
#### 1.1 Training Participants

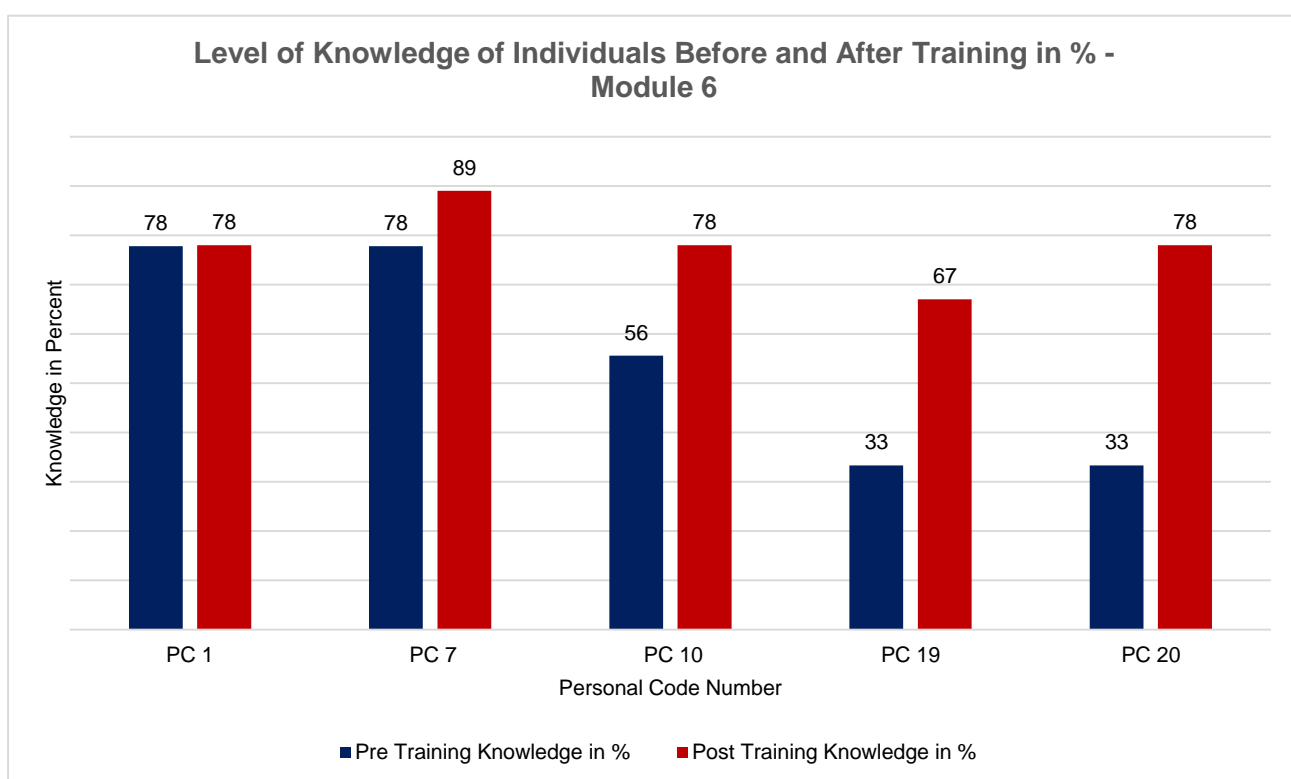
The training participants were employees of the Government of Nepal especially from the Ministry of Energy, Department of Electricity Development, Nepal Electricity Authority, Kathmandu University School of Law (KUSL), Investment Board of Nepal and other relevant government offices. We noted a marked improvement in the gender balance of training participants this past quarter, with more female attendees.

#### 1.2 Measuring the Learning of MoE training Module Participants

To observe the knowledge of participants before and after each training module, NHDP has conducted pre-test and post-test knowledge checks with the participants, wherein they are asked to answer the same questions before going through the course content, and then after completing the course content. NHDP analyzed the pre-and post-test responses from the participants. The following charts show the change in level of knowledge obtained for the training modules conducted by NHDP. The results were overall positive, indicating an uptick in learning during most sessions. During this quarter, due to the festive and holiday season and the elections, some of the participants missed last sessions of the module. Though, there were 9 participants in the last session, only 5 had attended the first session of this module. Hence, the comparative study for pre and post-test seems nominal.

Percentage of Beneficiaries of NHDP Training, October-December 2017 (FY18Q1)





As per the chart above, altogether 5 participants<sup>33</sup> completed both rounds of testing for Module 6. Based on the “pre”-test and “post”-test responses, one participant measured the same knowledge on the training topics before and after the training. The remaining four participants improved their level of knowledge after the training.

### 1.3 Training Evaluation by Participants

#### Module 6

##### 1. Ranking of the topics in terms of learning

During the evaluation of training, participants were asked to rank the training topics in terms of their learning.

**Table 1.1**

Rank in terms of Learning	Rank
Commercial Considerations for Cross Border Power Trade	1
Technical Considerations for Cross Border Power Trade	2
Policy and Regulatory Framework for Cross Border Power Trade	3
Evolution of the Model of Cross Border Power Trade	4
Institutional Framework for Cross Border Power Trade	5
Overview of Cross Border Power Trade	6

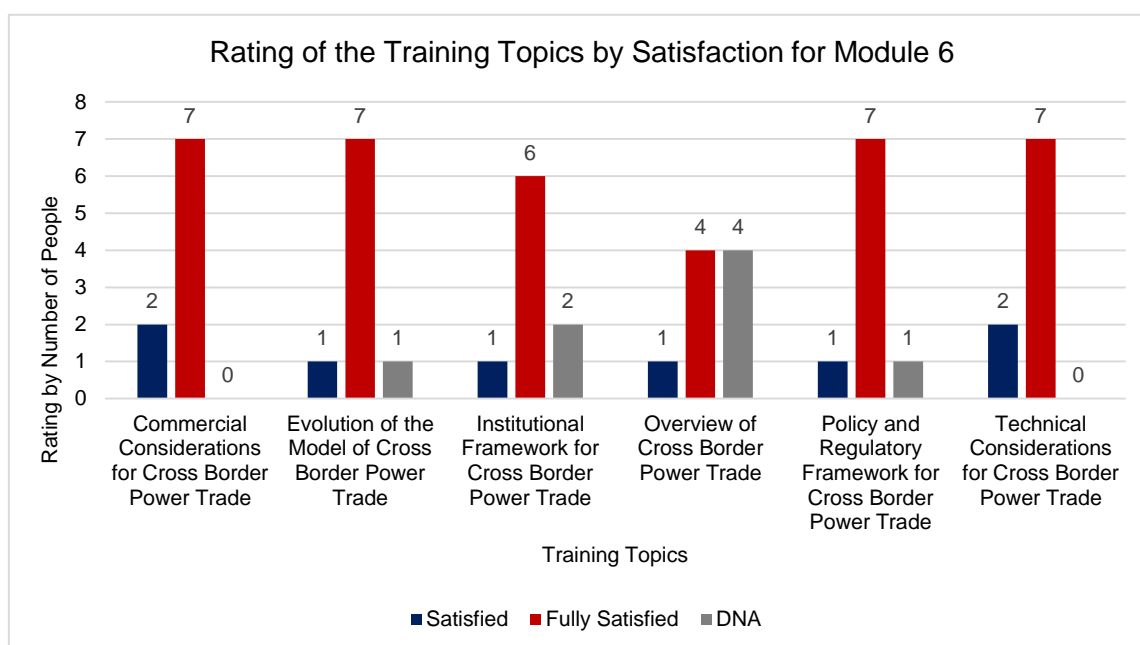
<sup>33</sup> On average 11 participants attended in all 6 sessions but in the last session only 5 were eligible (those who had attended the first session) for post-test. So the results and analysis are based on the final session attendance.



In terms of learning on the training topics, “Commercial Consideration for Cross Border Power Trade” got the top ranking comparing to others. Similarly, “Technical Considerations for Cross Border Power Trade” got the second highest ranking and the lowest ranking went to the training topic “Overview of Cross Border Power Trade”. (*Table 1.1*)

## 2. Rating of the topics in terms of Satisfaction/Effectiveness

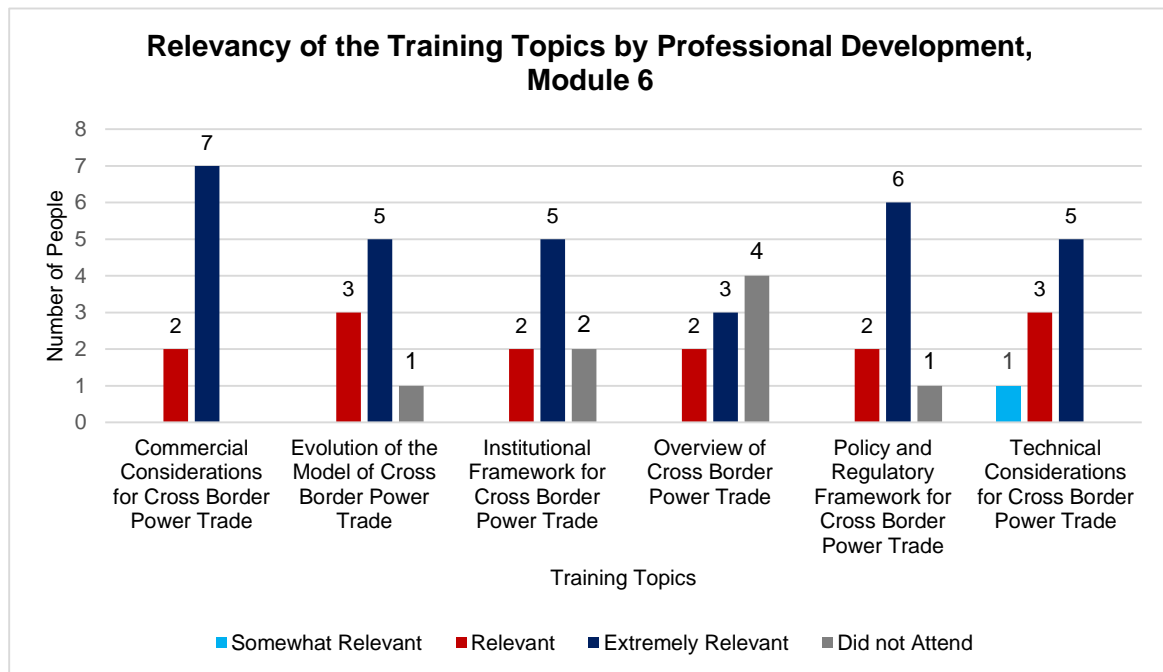
During the evaluation of training, participants were asked to rate the training topics in terms of their satisfaction/effectiveness.



In terms of satisfaction and effectiveness of the training topics, the vast majority of participants (almost all) rated “satisfied” and “fully satisfied” for all topics of Module 6. Based on the responses, we can say that the training was found to be overall effective and satisfied the participants. A few participants said that they did not attend (DNA) in some of the training topics, and nobody chose the options of not satisfied nor somewhat satisfied. (*See chart above*)

### 3. Relevancy of the topics for professional development

During the evaluation, participants were asked how relevant the training topics were to their professional development. There were altogether seven topics in Module 6.



In terms of relevancy of the training topics for their professional development, the vast majority of participants said that the training topics are extremely relevant and relevant for their professional development, which also gives us confidence that the right attendees have been nominated for this training module. Only one participant said that one training topic was somewhat relevant for their professional development and nobody selected not relevant. A few participants did not attend certain sessions and they did not say anything about their learning. (See chart above)

## APPENDIX 2

### ACTIVITY MATRIX TO SUPPORT THE ELECTRICITY REGULATORY COMMISSION OF NEPAL

	Roll Out Phase Now - Jan 2018	Stand Up Phase Feb 2018 – July 2019	Long-Term Phase Aug 2019 onwards
<b>Electricity Regulatory Commission of Nepal – Goals</b>			
<b>Administrative</b>	<ul style="list-style-type: none"> <li>Commissioners appointed</li> <li>Develop and issue bylaws for ERC's internal administration</li> <li>Deputed staff assigned for initial period</li> <li>Provide ERC with initial office and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Make first staff appointments</li> <li>Issue Code of Conduct for ERC (Commissioners and staff)</li> <li>Prepare annual budget and annual report</li> <li>Prepare 5-year business plan and budget, including staffing plan</li> <li>Develop organizational assessment tool (e.g., balanced scorecard)</li> </ul>	<ul style="list-style-type: none"> <li>Recruit staff additional staff for the Commission (as needed)</li> <li>Phase out and return deputed staff from GoN</li> <li>Handover the work to permanent staff of the Commission</li> <li>Prepare annual budgets and annual reports</li> <li>Develop internal training materials and programs</li> <li>Monitor organizational development (balanced scorecard)</li> <li>Establish funding base through levies, licensing fees, etc.</li> </ul>
<b>Substantive</b>	<ul style="list-style-type: none"> <li>ERC Authorizing Regulations developed and approved</li> <li>Commissioner's study tour to other South Asian regulators</li> </ul>	<ul style="list-style-type: none"> <li>Identify ERC training requirements &amp; develop training plan</li> <li>Develop strategic plan for regulation of electricity industry in Nepal</li> <li>Commence Stand-Up phase of capacity building for Commissioners and staff</li> <li>Conduct listening/outreach tour in Nepal</li> <li>Issue the Commission's initial Directives</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing intensive training for Commissioners and staff</li> <li>Issue additional Directives and approve codes as required</li> <li>Review tariff applications and issue tariff orders</li> <li>Conduct the business of the Regulator               <ul style="list-style-type: none"> <li>✓ Issue of Certificates of Operation</li> <li>✓ Monitor compliance with technical codes</li> <li>✓ Monitor compliance with performance standards and other conditions</li> <li>✓ Develop chart of accounts and monitor compliance</li> <li>✓ Report of key economic and technical information</li> <li>✓ Review sector plans as prepared by the regulated entities and/or the GoN</li> </ul> </li> <li>Report key economic and technical information to GoN and the Public</li> <li>Issue other orders, as required</li> </ul>

	Roll Out Phase Now - Jan 2018	Stand Up Phase Feb 2018 – July 2019	Long-Term Phase Aug 2019 onwards
<b>Support to the Electricity Regulatory Commission of Nepal</b>			
<b>Ministry of Energy and DOED, Government of Nepal</b>	<ul style="list-style-type: none"> <li>Develop ERC Authorizing Regulations;</li> <li>Indian Regulatory study tour (NHDP funded)</li> <li>Appoint the Commissioners (Chairperson and other Members)</li> <li>Depute staff for Commission from other Government bodies</li> <li>Commission to appoint a Secretary</li> <li>Acquire/allocate basic initial infrastructure – Office space, furniture and vehicles</li> <li>Pay salaries of the Commissioners and staff</li> <li>Determine planned disposition of ETFC staff and other resources</li> <li>Time Line for formal rate case submissions to the Commission</li> </ul>	<ul style="list-style-type: none"> <li>Include ERC in the development of GoN policy and provide policy guidance to the Commission as required</li> <li>Provide expanded office space</li> <li>Make the Fund<sup>34</sup> operational, as per the Act</li> <li>Review the Commission's annual report</li> <li>Pay salaries of Commissioners and Commission staff</li> <li>Dissolve ETFC</li> </ul>	<ul style="list-style-type: none"> <li>Include ERC in the development of GoN policy and provide policy guidance to the Commission Review the annual reports of Commission</li> <li>Pay salaries of Commissioners and staff of the Commission until the Fund is operational</li> </ul>
<b>USAID - Nepal Hydropower Development Project</b>	<ul style="list-style-type: none"> <li>Provide assistance to GoN in the drafting of ERC Directives</li> <li>Conduct study tour for ERC's Authorizing Regulations drafting committee, to visit the central and state ERCs in India (CERC and DERC)</li> <li>Facilitate study tours between the newly-appointed Commissioners and other electricity regulatory commissions in South Asia</li> <li>Prepare drafts of the Commission's initial Directives</li> <li>Provide any other technical assistance requested by the Commission</li> </ul>	<ul style="list-style-type: none"> <li>Provide training on the legal and regulatory framework for Commissioners and staff</li> <li>Facilitate first stakeholder interactions regarding the role of Commission in the power sector</li> <li>With the Commissioners, develop strategic plan for the regulation of Nepal's electricity sector</li> <li>Assist the Commission to finalize and issue Initial Directives and supplemental Directives on such things as Conduct of Business, on the implementation of the Fund, and on tariff methodologies and procedures.</li> <li>Assist the Commission to develop and issue a Code of Conduct</li> <li>Assist the Commission to review tariff applications and develop tariff orders</li> <li>Provide any other technical assistance requested by</li> </ul>	<ul style="list-style-type: none"> <li>Phased withdrawal of NHDP technical assistance</li> </ul>

<sup>34</sup> The Fund comprising regulatory levies, and administrative fees, as per the ERC Act.

	Roll Out Phase Now - Jan 2018	Stand Up Phase Feb 2018 – July 2019	Long-Term Phase Aug 2019 onwards
		the Commission, including assistance in the development of -legislation and the conduct of business	
<b>The World Bank (or other Donor support)</b>	<ul style="list-style-type: none"> <li>Procure office and IT infrastructure over and above that provided by GoN for the Commission, as required</li> </ul>	<ul style="list-style-type: none"> <li>Procure additional office and IT infrastructure</li> <li>Procure technical support to set up website for the Commission</li> <li>In coordination with NHDP, arrange advanced training (see next bullet)</li> <li>Procure and fund advanced training for the newly appointed Commissioners and key staff in US universities (<i>Camp NARUC at Michigan State or PURC/WB international training program on utility regulation at University of Florida</i>)</li> <li>Procure and fund study tours for the Commissioners and key staff with other electricity regulatory commissions in South Asia and South East Asia, on a quarterly basis</li> </ul>	<ul style="list-style-type: none"> <li>Arrange and fund annual training for the new Commissioners and key staff in US universities (<i>Camp NARUC at Michigan State or PURC/WB international training program on utility regulation at University of Florida</i>)</li> <li>Fund study tours for the Commissioners and key staff with other electricity regulatory commissions in South Asia and South East Asia, on a bi-annual basis</li> <li>Upgrade the IT infrastructure and information management systems as required</li> </ul>
<b>Millennium Challenge Corporation</b>		<ul style="list-style-type: none"> <li>Conduct strategic plan review and transition planning with ERC and NHDP</li> <li>Procure and fund technical assistance for ERC and MOE (long-term advisors) to start after compact entry into force (estimated at August 2019)</li> </ul>	<ul style="list-style-type: none"> <li>TA support for ERC objectives <ul style="list-style-type: none"> <li>✓ Tariff methodology consultation, development &amp; issuance</li> <li>✓ Development of technical standards &amp; code and licenses where required</li> <li>✓ Tariff determination (Retail), PPA approvals and capex plan approval</li> <li>✓ Drafting conditions &amp; procedures for issuing Certificate of Operations</li> <li>✓ Drafting of standards for performance improvement, quality of supply</li> <li>✓ Dispute resolution regulation</li> <li>✓ Resolution of disputes &amp; issuance of order</li> <li>✓ Procedure for public consultation</li> <li>✓ Conducting public hearings</li> <li>✓ Electricity Trading</li> <li>✓ System and Market Operations</li> </ul> </li> <li>Additional areas of support, including: <ul style="list-style-type: none"> <li>✓ Sector survey/analysis</li> <li>✓ Renewables/off-grid</li> <li>✓ Energy efficiency</li> <li>✓ International specialized training in specific skill areas</li> </ul> </li> </ul>

