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Hydroelectricity Investment and Development Company Ltd.

HYDROPOWER PROJECT MONITORING GUIDELINES

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Acronyms

E&S	Environmental and Social
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
ESMP	Environmental and Social Management Plan
FIs	Financial Institutions
HIDCL	Hydroelectricity Investment and Development Company Limited
IAT	Investment Appraisal Template
IEE	Initial Environmental Examination
O&M	Operation and Maintenance
RAP	Resettlement Action Plan

1. Introduction

Hydroelectricity Investment and Development Company Limited (HIDCL), a government of Nepal owned public company, was established to finance the middle to mega sized hydropower projects in Nepal. The company finances hydropower and renewable energy generation, transmission and distribution projects. After its establishment in 2011, it has been financing debt and equity in government & public company projects, Independent Power Producers' (IPPs) projects and projects being developed by its subsidiary companies.

Relating to the risk of hydropower project financing, HIDCL, has implemented Investment Appraisal Template (IAT) as a form of due-diligence of the hydropower project financing proposal in order to enable it to make systematic investment decision. Additionally, in order to reduce the risk associated with its investment, proper monitoring of the project implementation activities needs to be done. This guideline has been prepared to assist HIDCL in monitoring of the hydropower projects financed by it in as systematic manner in order to assure prompt intervention to improve the project execution and minimize the risks.

This guideline has been prepared based on the suggestions and recommendations from various experts working in different sectors of hydropower planning, development and engineering through the platform of various workshops.

2. Objectives

The key objective of this guideline is to assist HIDCL in monitoring the projects that it finances regarding technical, financial, managerial, environmental and social aspects in order to assure timely intervention to improve the project execution and minimize the risks and ensure timely payback.

The specific objectives of this guideline are;

- To ensure compliance with covenants of investment agreement.
- To ensure proper utilization of disbursed/available funds.
- To ensure quality of works as per approved design, criteria, guideline, and standards/specification.
- To monitor the time and cost component of the project and recommend measures to minimize any time and cost overruns.
- To ensure that no surprises come up with project implementation & financing.
- To ensure environmental and social implications of the projects are duly considered.

- To forecast the unforeseen consequences and find the remedies in advance.
- To provide consultation in order to complete the works within time & budget.
- To ensure loans disbursed are being repaid within stipulated time frames.
- To find any gaps and provide suggestions/feedbacks to overcome such gaps.

3. Approach

The following are the approaches envisioned for preparing this Monitoring Guideline;

- Regular meetings with borrowers/lenders/co-partner and share the monitoring findings to recommend and suggest for further improvement if gaps are identified.
- Interaction & Discussion with different stakeholders-developers, contractors, supervision consultants, lenders, regulatory authorities, government agencies i.e., to minimize the risk encountered in hydropower development.
- Review of progress reports, project documents, financing documents, technical and financial reports, environmental and social reports published by lender's consultant etc.
- Periodic site visits
- Monitoring reports

4. Monitoring on Different Project Phases

Monitoring of the hydropower projects will be carried out in three different stages of project development process. Monitoring will begin with the signing of the loan agreement between the developer and the lenders. To standardize the monitoring process, the three successive phases in hydropower development have been defined as follows:

- Pre-construction Phase
- Construction Phase
- Operation Phase

Proper monitoring will ensure that all the phases follow these guidelines to ensure timely execution of the projects with acceptable quality and within the pre-defined cost. Use of the guidelines will also bring uniformity in monitoring of all projects that HIDCL has financed.

4.1 Pre-construction Phase

As soon as the loan agreement is signed, HIDCL will start monitoring the project. During this phase monitoring will be done to confirm that the preparatory works have been done appropriately and sufficiently by the project developer to proceed for successful project

construction ensuring consistency in planning with required documentation, approvals and agreements that will guarantee uninterrupted project construction and minimize/mitigate several risks in the project. Monitoring in this phase will cover the following elements:

- Conformity of the approvals and permits
- Regular follow up for regulatory requirements that have not been met
- Execution of security documents in the name of the lenders
- Clarify and confirm all the project milestone dates
- Project organization structure and staffing
- Project Work Plan and identify priority issues in the project implementation
- Local issues related to construction works
- Issues related to land acquisition and regular follow up for remaining land acquisition
- Issues related to other environmental and social aspects of the project
- Regular information regarding development of the necessary transmission line and related infrastructure
- Ensure the covenants and the pre-requisite terms and conditions to be fulfilled by the project developer are met as and when required as mentioned in the loan agreement. In general covenants spelled in the typical loan agreement are:
- ✓ Verification and approval of the final project layout design of the major structures
- ✓ Verification of the hydrological and sedimentology data
- ✓ Geological and geotechnical investigations
- ✓ Construction of access road
- ✓ Construction of Project infrastructures including transmission facilities
- ✓ Receive Commitment from the developer to follow the recommendation and Covenants mentioned
- Project Contract

4.2 Construction Phase

During construction of project, HIDCL will conduct monitoring with respect to procurement schedule, construction schedule and cash flow. This will be performed through regular site visits by HIDCL team and also issue based site visit will be made as and when required. The visit will have objectives of verifying work progress according to the design and schedule with standard quality, monitor project management activities, project financing situation, environmental and social impact situation and any shortfall regarding work execution.

The project developer will submit the monthly progress report to HIDCL. Monthly progress report shall be prepared by the project construction supervision consultant during the construction stage. The report shall describe in detail all the construction progress including social and environmental issues at site for the reporting period including any variation claims, potential claims and their impacts on the initial Project Implementation Plan. Financial status of the project shall also be included in the progress report.

4.2.1 Monthly/Quarterly Progress Reports from the Developer

The monitoring team shall review a monthly progress reports submitted by the Developer on the project activities during construction period. A brief report/ comments on the progress report shall be made which shall include physical and financial status if any of different construction activities of contracts, construction materials available at the site and required quantity, information on contractor's equipment and their condition and their production rate and adequacy, contractor's manpower, contract variation order details etc.

Monitoring unit/ team of HIDCL will review the progress reports on the project activities and provide feedback / recommendations based on the findings of the monthly progress report. For the uniformity and consistency, the developer will submit the peroidic progress report in the HIDCL format as per Annexes of the monitoring guideline.

4.2.2 Monitoring by the Independent Technical Consultant

An independent technical consultant has to be employed on behalf of the project consortium of the FIs. The technical consultant will be responsible for verification of the Interim payment certificates and to carry out the following activities:

I. Review of the project related contract documents

Review of the project contract documents is to make a clear vision to understand the scope of the various Project Contracts. This is the pre-requisite task to be performed before carrying the verification of the Payment Certificates where following studies will be carried out by the Contract engineer, Hydropower engineer, Civil Engineer and Electromechanical Engineer.

II. Verification of Payment Certificate

It is the responsibility of the Supervising consultant/Engineer to prepare payment certificates. The certificates act as the payment justification. Payments recommended by the Supervising Consultant will be only paid after the verification by the independent technical consultant. With but not limited to the following work activities, the verification of Payment Certificates will be conducted

- Verify that the Payment Certificate is prepared by the Consultant after the works for which the contractor claims have been inspected on site and found in good order, conforms to prescribed quality, and have actually been carried out and such payment certificate are only prepared upon the receipt of a claim from the contractor.
- Verify that the Payment Certificate is in line and satisfactory conforming the contract documents and standard practices.
- Verify that the Payment Certificate is prepared as per the work progress and price quoted are as per the approved Bills of Quantity/Contract Agreement.
- Verify that the Payment Certificate includes the minimum information required as per the standard practice to proceed for the payment
- Verification shall be done on the basis of reports, drawings, topographic maps, calculation sheets, photographs, monthly progress report prepared by the Consultant/Developer and other documents requested by interim certificate and a site visit as required.
- Independent technical consultant will make site visit as and when required to verify the Payment Certificate. Though one site visit per Payment Certificate Verification has been envisioned, this might not be the case for every Interim Payment Certificate verification.

Based on the review and recommendation of the independent consultant and its review by the monitoring team of HIDCL will recommend the consortium/lead bank to take immediate action on the IPC submitted.

4.2.3 Monitoring by HIDCL's Monitoring Section

During construction of project, HIDCL will also conduct monitoring with respect to procurement schedule, construction schedule and cashflow. This will be performed through regular site visits by HIDCL team and also issue based site visit will be made as and when required. The visit will have objectives of verifying work progress according to the design and schedule with standard quality, monitor project management activities,

project financing situation, environmental and social activities conducted by the project and regarding work execution. The monitoring visit will be guided by the following outline but not be limited to;

I. Technical

- ensure that works are executed on schedule,
- ensure that Contractors and Consultant are executing assigned works with technical and financial professional manner,
- ensure that the physical work progress and financial work progress are tied up,
- check and monitor contractors' site establishment works, temporary works, facilities for storage and handling, equipment and tools,
- check key tests of materials and workmanship to ensure and recommend actions to be taken for any correction,
- evaluate Contractors' quality assurance/control program,
- arrange meeting with the senior personnel of project company/consultant/contractor to verify the progress.

II. Environment, Social, Health and Safety

- check whether all required valid permits, licenses and approvals are obtained or not,
- check all E&S covenants of loan facilities agreement/shareholder agreement are complied or not,
- check whether monitoring reports as provisioned in EIA/IEE, RAP/SAP reports are prepared or not,
- review of monitoring reports prepared by developer as envisaged in EIA/IEE,
- check whether mitigation measures proposed in ESMP are implemented or not,
- check whether resettlement activities are conducted as specified in EIA/IEE, RAP etc.
- check implementation of occupational health and safety plans.
- number of any incidence of accidents, injuries, deaths,
- number of incidences of spills and leakages of hazardous materials, accidental explosion etc.,
- check whether Grievance redress mechanism established or not,
- number of grievances reported, resolved and yet to be resolved,
- stakeholder's engagement and CSR activities conducted by the project.
- Identify the key environmental and social issues resulting from the project implementation activities,

- inspect and suggest preventive safety and environmental control measures.
- arrange meeting with the project manager, EHS and Social officer to verify E&S activities conducted by the project.

4.2.4 Manufacturer's Factory Inspection

Critical factory tests and acceptance tests shall be identified by the project developer during project planning. A schedule for Factory inspection will be agreed with the Contractors. A monitoring team, along with members from the project developer, will conduct a visit to the manufacturing facility/ factory of supplier/ manufacturer, especially of the electromechanical components to;

- monitor costs, budget performance, rates of progress and adequate staffing levels
- check supervisory and other resources are adequate for site activities
- convene project meetings with project developer with detailed meeting minutes
- In addition to scheduled meetings, special meetings may be required on specific issues at short notice to quickly resolve a potential problem.
- insist project developer in acquiring Taking-Over Certificate, As-Built drawings and Project Completion Report

4.2.5 Operation Phase

Operation phase refers to all of the activities needed to run a HPP scheme. Cost associated with maintenance work during operation represent a significant share of total operational costs. Hence, proper O&M planning is needed for long-term economic HPP operation.

The monitoring on will be guided by the following outline but not be limited to;

- Conduct project monitoring once every year throughout the repayment period,
- Make sure to have the O&M manuals and drawings for all plant and installations,
- Produce a monitoring report indicating the operation status and cash flow patterns issues,
- Ensure environmental and social mitigation are implemented as specified in ESMP,
- Make sure the use of safety equipment and placement of warning signs,
- Confirm the compliance of expense of budget allocated for mitigation & monitoring works

5. Risk Matrix

During the monitoring process, the observation and findings will be recorded and reported as follows.

Risk Category	Issues	Descriptions	Status	Mitigation Adopted	Outcomes	Remarks
I. Construction Phase						
Technical Risk						
Hydrological Risk						
Geological Risk						
Regulatory Risk						
Constructional Risk						
Delay Risk						
Cost overrun Risk						
Environmental and Social Risk						
Climate and Disaster Risk						
Political Risk						
Legal Risk						
Financial Risk						
Liquidity Risk						
Hedging risk						
Project Management Risk						
II. Operational Phase						
Cash Flow of the project						
Hydrological Risk						
Disaster Risk						
Operation and Management Risk						

6. Reporting

On completion of each site monitoring visit, a consolidated project Monitoring Report covering whole of the works will be prepared and submitted. The report will be submitted with all the findings and records with appropriate comments and suggestions. The report

will include comments and recommendation on changes, if any, to the applied methodology for implementing future works, financial plan and status of Contract, Consultant's recommendation and other relevant project information. Project Monitoring Report will be prepared and submitted to HIDCL management for necessary action and findings will also be shared with project developer recommending necessary actions for risk remedies.

ANNEXURES

Annex 1 : Format of Compliance with the Schedule for Pre- Construction Phase

Major Deliverable/Milestone & Description	Planned Start Date**	Actual Start Date	Planned Completion Date**	Revised Completion Date	Percentage Complete	Actual Completion Date	Cost to Date (NPR)	Status/Variance Explanation
Survey License								
Generation License								
Transmission Survey License								
Transmission line Route Survey								
Transmission line Design								
EIA/IEE of the Project								
EIA / IEE of the transmission line								
Connection Agreement								
PPA								
Land Acquisition								
Financial Closure								
Appointment of Project Manager								
E&S consultant Appointment								
Bidding/Tendering								
Contract Award for								
Infrastructure/Access Road								
Civil Works								
Electromechanical Works								

Hydro-mechanical Works								
Transmission line Works								

Annex 2: Physical and Financial Work Progress

SN	Project Component	Duration as per Schedule	Start Date	Finish Date	Remaining days	Physical Progress %	Financial Progress %	Total Progress	Remarks
Overall Progress									

Annex 3: Sample Template for Construction Phase

Major Deliverable/Milestone & Description	Planned Start Date**	Actual Start Date	Planned Completion Date**	Revised Completion Date	Percentage Complete	Actual Completion Date	Cost to Date (NPR)	Status/Variance Explanation
Delivery (split to several sub-head)								
Installation (can be made to sub-head)								
Electromechanical Works								
EM Works Contract Award								
Design and Drawings								
Manufacturing of Equipment's								
Generator								
Automation and control equipment								
Switchyard equipment, e.g. transformers								
Shipment								
Delivery of equipment								
Turbine								
Generator								
Automation and control equipment								
Switchyard equipment, e.g. transformers Installation								

Testing and Commissioning								
Transmission Line								
TL works Contract Award								
Purchase of equipment								
Delivery to site								
Installation								
Works to be completed by NEA								
RCOD								

Annex 4: Sample Template for Environment and Social Monitoring

S.N.	Questions/ Issues to check	Response
Project Summary Information		
1.	Reporting period covered by this Monitoring report	
2.	Specification of project stage (Design, construction, operation or closure stage.	
3.	Key developments and any from the time of loan disbursement or from the last supervision periods.	
General Information		
4.	Status of implementation of covenants / corrective action plan. Is it In line with the agreed time frame? (i.e., if all covenants are implemented or partially Implemented or not Implemented or delayed Implementation). If partially Implemented or not implemented or delayed implementation, environmental expert to please mention the reason in the response column along with a timeline for completion implementation as committed by the client during supervision.	
EHS Management		
5.	If there was any incidence of accidents, spills leakages, explosion etc. during the reporting period. If yes, what was the scale of damage (e.g., If there was fatality monetary loss etc.)? What was the action taken in response to the incident.	
6.	If there was any recent fines and penalties issued by the regulatory body. If yes, Environmental expert have to mention the mention the nature violation, amount of fine/penalty in future.	
7.	If there was any health &safety incident, If yes, what was the extent of injury – minor, major or fatal? What was the action taken in response to the incident?	
8.	If there are any new E&S risks or adverse Impacts observed due to client's operation. Environmental expert to please mention the types of new E&S risks, the reason for such new E&S Risks, mitigation measures undertaken by the client to address the E&S risks.	
Permits and Compliance Certificates		

9.	All the required permits, licenses and clearances in place. Environmental expert to please mention the issuance dated and duration of validity of all such permits, licenses and clearances.	
10.	Other international management systems (for e.g., ISO 14000, ohsas 18001, SA8000) followed by the client and if they have valid certifications for those management systems.	
	Grievance Redressal	
11.	If there have been any recent complaints, grievance or protest received from local communities. If yes, please specify the nature of grievances; actions taken by the clients to resolve grievances and if there any outstanding issues and measures proposed by the client to resolve them.	
12.	If there were concerns raised during the stakeholders' consultations carried out by clients during the reporting period. If yes, what was the approach undertaken by the clients to address those concerns?	
13	If there was climate change related risks (flash flood, draught, GloF etc.) encountered by the project. If yes, what were the approach undertaken by the clients/developer to address those concerns?	
	Other Information	
13.	Any other information pertaining to environmental matters management approach community media or NGO coverage that need to be mentioned. If there are any information friendly initiatives, energy saving equipment etc. promoted by the project company.	

Annex 5: Format of Monitoring Report

1. **Table of Content of monitoring Report**

11. EXPENDITURE STATUS IN VARIOUS ITEMISED BUDGET
12. COVENANTS COMPLIANCE
13. MAJOR CONCERNS