Royal Government of Bhutan

GUIDELINES FOR BIDDING DOCUMENTS FOR HYDROPOWER PROJECTS - 2020

Department of Hydropower and Power Systems
Ministry of Economic Affairs
Royal Government of Bhutan

DISCLAIMER:

This Guideline provides practical suggestions and best practices for the preparation of the bidding document for hydropower projects in the country. The Guideline provides a general framework which projects could use to make contracting decisions that are in the best interest of projects and the provisions of the Guideline should be used in a flexible manner. It supplements but does not replace any existing statutory requirements in vogue. Therefore, each project should seek legal advice concerning the contracts.

While it is recommended to use this Guideline in a uniform manner, the projects must exercise their judgement and wisdom on the implementability of various provisions of the Guideline. As such, the Department shall not be held accountable for any implications in future that might arise.

ACKNOWLEDGEMENT

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Abbreviations

BEA	Bhutan Electricity Authority
BOQ	Bills of Quantities
DGPC	Druk Green Power Corporation Limited
DHPS	Department of Hydropower and Power Systems
DPR	Detailed Project Report
FIDIC	International Federation of Consulting Engineers
FY	Financial Year
GOI	Government of the Republic of India
ICB	Internationally Competitive Bidding
MDB	Multilateral Development Bank
MHPA	Mangdechhu Hydroelectric Project Authority
PHPA-I	Punatsangchhu-I Hydroelectric Project Authority
PHPA-II	Punatsangchhu-II Hydroelectric Project Authority
RAA	Royal Audit Authority
RGOB	Royal Government of Bhutan
SPV	Special Purpose Vehicle

Preface

Bhutan is endowed with hydropower resources. In Bhutan, 100% of electricity is generated from hydropower. To date 2,335MW has been harnessed and over 2,930MW is under development, with more than 10,000MW in various stages of planning. The Government of Bhutan has identified that hydro-electric power development has two important roles to play in the socio-economic development of Bhutan:

i) to provide safe, reliable, affordable and abundant electricity to improve the lives of all Bhutanese and drive industrial growth, and
ii) for exporting surplus power to enhance Government revenue and achieve positive balance of payments.

To date hydropower projects in Bhutan have been developed by the Special Purpose Vehicles (SPV) or Project Authority engaging international contractors through a range of bidding processes and using a range of contract forms. Common issues have arisen during hydropower projects in Bhutan which have impacted on project quality, delivery time and cost. Many of these issues could be mitigated at various stages of the project, including the project preparation phase and the construction phase. Some can be mitigated in the Contractor selection (bid) process and others through prudent use of contract conditions.

FIDIC (Fédération Internationale Des Ingénieurs-Conseils or the International Federation of Consulting Engineers) provides an appropriate form of standard conditions of contract (the "Red Book") for engaging a contractor for a hydropower project designed by a consultant for the project Developer. The General Conditions of Contract in the Red Book are supported by Particular Conditions that apply for the specific project.

This "Guideline for Bidding Documents for Hydropower Projects" describes the steps necessary to **mitigate issues arising at hydropower projects.** The Guidelines describe how time, cost and quality issues that impact hydropower development can be addressed at each stage of project development, namely project preparation, bidding and management of construction. The Guidelines then have three Annexes

1 **Annex A: Recommended Particular Conditions of Contract:** Provides recommended particular conditions that should be included in a contract using the FIDIC 2017 Red Book Contract. This part also includes Schedules within FIDIC Red Book that need to be issued with the Bidding Documents.
2 **Annex B: Forms to be included in Bidding Documents** for the Bidder to submit.
3 **Annex C: Contract forms to be used during the award of the contract.**

1.0 Mitigating Issues Arising at Hydropower Projects

This Guidance document for Bidding Documents identifies the main issues that impact effective delivery of hydropower projects in Bhutan. When issues outlined in this document arise, there can be major impact on the delivery time for the project and the final out-turn cost. However, the impact of the main issues can be mitigated to reduce the likelihood of delays and cost overruns at several stages of the project, namely:

i. during the project preparation phase (i.e. Detailed Project Report (DPR)),
ii. in preparation of bidding documents when designing contractual mechanisms, and
iii. undertaking effective risk management during construction.

Responsibility for achieving mitigation of the identified issues changes through the project as accountability for the project moves from project preparation to construction phase.

1.1 The Main Parties

Hydropower projects require several parties (in particular the Developer, the Designer, the Owner's Engineer, and the Contractor) to work together to successfully deliver the completed hydropower project.

Identification of risk and apportionment to the project parties are key factors in successful projects. Correct application of contract models is central to the management of risk during construction.

1.1.1 Hydropower Project Developer and Owner

In Bhutan the following key entities are involved in the development of hydropower projects:

- Department of Hydropower and Power Systems (of the Ministry of Economic Affairs): DHPS is the policy advisor for development of new hydropower projects. DHPS is the nodal agency for according approval of the Detailed Project Report (DPR) on behalf of the Royal Government of Bhutan.

- Special Purpose Vehicle (SPV)/Project Authority is typically the Developer of the project responsible for design, construction and first reservoir filling of the project. It is sometimes a joint venture between a developer/financier and the Royal Government of Bhutan. The SPV/Project Authority will appoint a Contractor and Designer for the development phase of the project. The SPV/Project Authority becomes the "Employer" in the terminology of FIDIC contracts.

- Druk Green Power Corporation (DGPC): DGPC is the Government owned power utility. Ownership of the newly developed power project usually transfers to DGPC within 2 years following completion of first reservoir filling. DGPC has internal engineering resource for operations and maintenance or uses consultants as technical advisors.

- Bhutan Electricity Authority (BEA) is the Electricity Regulator approving licences, setting domestic tariffs, setting standards and requirements for dam safety etc.

1.1.2 Contractors

Contractors need to have experience in construction works including experience and expertise in hydropower projects.

Contractors also need to have the financial strength to manage risk allocated to it for the project. The Contractor needs to provide evidence and assurance that they have the financial strength to complete the project without going out of business. If the Contractor goes out of business then the project site will be frozen until debts are paid, resulting in significant time delays for the project.

The Contractor's project team should include engineers who have constructed the same type of hydropower projects and wherever possible, in similar geological conditions.

1.1.3 Designers and other Experts

For hydropower projects in Bhutan, the preparation phase will include preparation of DPR. The SPV/Project Authority will typically then employ the design consultant separately from the Contractor.

Designers need to have experience on the hydropower project. The level of experience and expertise of those involved should relate to the hazard of the completed projects and complexity and geotechnical risk relating to the specific project. For high hazard dams, dams on complex foundations or with high seismic hazard, the lead Designer should have more than 20 years' experience in hydropower engineering, including the type of dam being developed.

Hydropower construction is a specialised activity that involves knowledge of many different disciplines from geology, hydrology, geotechnical engineering, structural engineering, and other professions. Having a multi-disciplinary team with a wide variety of experience and knowledge will be essential for the successful outcome for the project.

To ensure design advice is not compromised by commercial links, the Designer must not have a commercial link to the Contractor.

Independent experts are recommended for some activities, such as review of design. Independence ensures that external perspective is applied to the safety of the dam. Independent experts should also have 15 to 20 years' experience in their field of expertise or should have served as an independent Expert for atleast three hydropower projects.

An independent Panel of Experts (PoE) is strongly recommended for design and construction of high hazard dams on complex foundations or high seismic zones. A PoE should include experts with more than 20 years' experience in design or construction of the project, especially complex dam projects. Each PoE member would be expected to contribute a different speciality of expertise relating to the risks involved with the project.

1.1.4 Owner's Engineer

The Employer is required to have an Engineer to the Contract. This role is required to assess matters identified in the Technical Specification for approval.

The Owner's Engineer may be within the SPV/Project Authority staff, or a consultant with experience in managing hydropower construction.

1.2 Issues Arising at Previous Hydropower Projects

With several hydropower projects developed, or under development, several issues have been identified which have impacted project financial outcomes in Bhutan. The Royal Audit Authority has confirmed a number of these in audits of some hydropower projects.

Issues relating to deficiencies in the site investigation, design, contract management, and construction management components of the projects could be avoided or improved with a strengthening of the approach to project preparation and contracting as set out in the bidding documents.

Identified issues are summarised below. This list provides a reference from which improvements can be made to subsequent projects and associated contractual mechanisms.

Table 1.1: Main Issues Occurring in Hydropower Projects

	Issue	Impact on Project
1	Inadequate site investigation prior to construction failing to identify geological conditions accurately, and unsatisfactory design not accurately considering site conditions.	Re-design during construction and extra works resulting in time delays and cost increase, which is falling on Employer since risk not contractually shared with Contractor
2	Insufficient understanding of hydrology and lack of clarity on responsibility for design of temporary works affected by construction floods (e.g. cofferdam).	Temporary works overwhelmed because design based on poor hydrology understanding resulting in dispute over responsibility for damage costs
3	Poor planning of disposal areas resulting in insufficient or inadequate disposal areas during construction	Increased cost to make new disposal areas and possible environmental impacts (e.g. sediment in rivers)
4	Provisional works underestimated during project preparation compared to reality found during implementation	Cost increases during construction when actual need and cost is realised
5	Inadequate evaluation of contractors and subcontractors	Contractors not able to conduct quality works resulting in re-work delaying the project (and cost overruns if Employer fails to claim Contractor's responsibility)
6	Contractors methods or equipment accepted during bid evaluation but later found unsuitable for site conditions	Cost and time delay implications if unsuitable methods require design change, extra ground support etc.

	Issue	Impact on Project
7	Inadequate supervision of contractors and subcontractors	Unsatisfactory quality of works, and cost overruns as claims are not sufficiently challenged
8	Delays in the delivery of design drawings and failure of the Designer to make timely decisions regarding needed design variations	Delays in works with consequent claims by Contractor for extra costs
9	Contractors progress slowed or put at risk by contractors running into liquidity problems during the project	Employer must pay subcontractors and labour to maintain progress of the project
10	Frequent occurrence of introducing processes/ works which were not included in the Contract documents	Cost overruns due to claims for extra costs not in BoQ.
11	Items during construction exceeding 130% of the BoQ-estimated quantities, leading to large cost increases for parts of the works. Employer has insufficient information to adequately negotiate revised rates	Cost overruns

Mitigation to reduce the likelihood or severity of issues impacting hydropower projects could be at the DPR preparation phase, in preparation of the bidding documents, or management actions during construction. Table 1.2 gives an indication of the project stages when mitigation should be possible. From this it is apparent that the first steps to mitigate or avoid the effects of an issue in a number of cases can often start during the DPR preparation phase. Also, not every issue mentioned can be mitigated effectively within the bidding documents to select the Contractor.

Table 1.2: Mitigations that can be applied to Reduce Impact of Issues on Hydropower Projects

Issue		Stage of Project to Apply Mitigation		
		Preparation/DPR	Bidding docs	Management
1	Inadequate site investigation prior to construction failing to identify geological conditions accurately, and unsatisfactory design not accurately considering site conditions.	• More thorough site investigation • Panel of Engineers	• Include GBR in bidding docs	• Record all site conditions • Design change before design issue delays Works.
2	Insufficient understanding of hydrology and lack of clarity on responsibility for design of temporary works affected by construction floods (e.g. cofferdam).	• Clarity of construction floods in DPR.	• Clear risk allocation in bidding docs.	• Data records during Works. • Flood management during Works.
3	Poor planning of disposal areas resulting in insufficient or inadequate disposal areas during construction	• Proper site surveys	• Clearly include in specification and drawings	-
4	Provisional works underestimated during project preparation compared to reality found during implementation	• Reduce number of unknowns in design phase	• Define provisional items with detailed rates in BoQ	• Pricing review of Provisional Sums • Rate data to support valuation of Provisional Works
5	Inadequate evaluation of contractors and subcontractors.	-	• Appropriate Pre-qualification and Tender evaluation criteria • Owner's Engineer's QA/QC approvals in specification	• Capacity of SPV/Project Authority and Owner's Engineer for supervision
6	Contractors methods or equipment accepted during bid evaluation but later found unsuitable for site conditions	-	• Exclude methods in Technical Specification • Tender evaluation	• Owner's engineer assessment of methods
7	Inadequate supervision of contractors and subcontractors	-	• State Quality Assurance requirements and approvals in Specification	• Appointment of experienced Owner's Engineer to supervise Contractor

Issue		Stage of Project to Apply Mitigation		
		Preparation/DPR	Bidding docs	Management
8	Delays in the delivery of design drawings and failure of the Designer to make timely decisions regarding needed design variations	• Consider designer track record and capacity during DPR consultant selection. • Review and strengthen contract with DPR consultant	-	• Designer capacity and resources during construction
9	Contractors progress slowed or put at risk by contractors running into liquidity problems during the project	-	• Appropriate Pre-qualification and Tender evaluation criteria • Securities in contract	-
10	Frequent occurrence of introducing processes/ works which were not included in the Contract documents	• Ensure complete DPRs	• Valuation process in Particular conditions • Require submission of detailed rates	• Scope control to minimize non-project-related works. • Rate data to support variation negotiation
11	Items during construction exceeding 130% of the BoQ-estimated quantities, leading to large cost increases for parts of the works. Employer has insufficient information to adequately negotiate revised rates	• Accurate calculation of quantities	• Valuation process in Particular conditions • Require submission of detailed rates	• Use rate data to support variation negotiation

1.3 Risk Management During the Project

Large hydropower projects encounter many risks during implementation. Risks are those events that could lead to adverse consequences (including time delays and cost increases). In a hydropower project this could be any of the issues listed in Table 1.1.

The overall objective of good project risk management is to minimise the consequence of adverse events while at the same time maximising the potential to secure opportunities. Risks impact on projects in many ways however the consequence of these impacts is almost always reflected in terms of time delays and/or increased costs.

Risks need to be allocated between the Owner/Developer and the Contractor in accordance with the party best able to manage the risk. This needs to be set out clearly in the contract.

Risk management for projects involves several interrelated aspects. All these aspects are likely to require periodic re-assessment and refinement as the project advances through its many development stages. As indicated in Table 1.2, some risks may be able to be fully addressed in the investigation and design (preparation) phases of the project and therefore largely removed from further consideration. Many risks however will remain with the project throughout its evolution and hence the focus is on understanding, controlling and mitigating these risks. Furthermore, additional risks will almost certainly be identified as the project progresses.

The main aspects of project risk management are shown in Table 1.3:

Table 1.3: Aspects of Risk Management

Identification.
• Potential and actual risks for the project need to be identified. This process should be initiated early in project development staging as it helps guide subsequent project stages plus ensures issues are not overlooked as development progresses.
Analysis
• Assess the nature of the risk. How likely it is to impact on the project and the consequence of that impact. This assessment is frequently revised at various stages of the development as new information becomes available.
Uncertainty
• Determine what level of certainty exists around this risk. Particularly at early stages in a project quantifying risks is dominated by uncertainty. This does not make a particular risk more severe, rather it highlights where future investigations can refine certainty.
Response
• What options might exist to manage and mitigate each risk. These are likely to be very generic at early stages but become more refined and specific as risks are more accurately quantified.
Ownership
• Who is best to placed to control or “own” each risk? This should be based on who is best placed to respond to risks if and when they occur. Ultimately this is usually a balance between contractor and employer (owner) and is reflected in contractual mechanisms.
Monitor
• The risk needs to be measures and monitored particularly during construction and commissioning. This is both for reasons of verifying project performance but also for contractual purposes.

1.3.1 Project Risk Register

A Project Risk Register (PRR) is a simple but highly effective tool for facilitating the identification and management of project risks. These need to be made transparent to all project parties (e.g. Employer, Contractor, Financer). Depending on the nature and complexity of the project, the exact nature of the PRR will vary. Table 1.4 is an example of a simple PRR.

Table 1.4: Example of Simple Project Risk Register

Risk (ID & Name)	Details	Risk Owner	Likelihood (L) of occurrence	Consequence (C) (physical, time, cost)	Severity (L*C)	Controls & Mitigation (C&M)	Post C&M risk
1 Cofferdam flood	Flood breaches cofferdam	C	Medium 20% each year	High Time & Cost	High	Demobilisation. Flood warning	Medium
2 Grout	Increased grouting needed	C < 30% E > 30%	High	Medium Time delays	High	Allowance made in project plan	Low
3							
4							
Key		C, Contractor E, Employer					

The PRR can be extended to include opportunities (PORR). This is where each risk might be partially mitigated through including an allowance for the risk to occur to some level during project delivery. If the risk does not occur, then there should be a saving in time and/or costs. However, if the risk occurs to a greater amount than allowed for, then it is accepted that it will induce additional time and or cost.

If this approach is adopted, the project parties will seek ways (or opportunities) for reducing risks and benefits will be achieved by the parties. For example using new methods of technology, adding additional resource to manage time on high risk areas, or refining project sequencing to move sensitive components of work outside high risk periods (e.g. flood seasons) will reduce the risk of time delays which impact the Owner, meanwhile the Contractor may be able to save costs.

1.3.2 Project Risk Management

The documents and systems discussed above all contribute to good project risk management (PRM). This is primarily about informed decision making and includes selecting appropriate project technologies, construction methodologies and procurement strategies. This in turn needs to inform contract document preparation including the clear allocations of risk, risk control and mitigation mechanisms and provision of contingency funds.

Aspects such as health and safety, environmental controls and management and community and cultural safety should also be included within PRM.

A transparent and unambiguous mechanism for managing design variations and associate claims is also a fundamental component of PRM.

2.0 The Preparation Phase

Important stages of the preparation phase are described in this Section.

i. DPR will be vetted and approved by DHPS.
ii. The SPV/Project Authority takes over the project to prepare bidding documents.

2.1.1 Investigation

When investigation prior to construction is inadequate, there is an increased risk that design will not adequately account for site conditions. Areas potentially impacted include geometric layout design, geotechnical, design, hydraulic design and structural design.

1. Lack of accurate topographic survey impacts the layout of the structure. Inaccurate topographic data could result in increased quantities of dam material being assumed before construction starts.

2. Geological conditions may not be identified accurately, resulting in design not accounting for geologic hazards, for example unsuitable foundations, unstable abutments or active faults. This can result in significant cost overruns on projects.

3. Insufficient understanding of hydrology poses a risk that discharge facilities are not designed to pass inflow design floods. Furthermore, poor understanding of hydrology has the potential to impact sizing of temporary river diversion works during construction (e.g. cofferdams). Therefore, responsibility for design of temporary works will not be clear. If the diversion facilities are overwhelmed during construction, responsibility for damage will be disputed unless the risks are allocated based on agreed data.

Investigations cover a wide range of disciplines and methods. They all have one primary purpose which is to reduce uncertainty. Investigations provide the framework within which; design can be refined, construction programmes and costs developed, and project economics determined.

Table 2.1: Scope of Investigations

Investigation Scope	Relevance to Construction and Contract Management
Topographic Survey & Mapping.	Provides core baseline data relevant to site layout, construction logistics (access etc.) and schedule of quantities.
Geological and Geotechnical	Key to identifying and understanding risks associated with dam foundations & abutments, site and slope stability and material suitability.
Hydrology	Provides details of risk from floods during construction as well as weather related impacts and constraints on construction programmes.
Seismic Hazards	Provides details of risk to construction activities from seismic events at the site but also associated infrastructure such as access roads.

For more details on the scope and purpose of investigations, refer to Independent Dam Safety Guidelines for Dam Safety in Bhutan [1] and Guidelines for Development of Hydropower Projects Part II [2]

Undertaking investigations does not necessarily mean investigations always reduce risk. In fact, many risks are identified from investigations when uncertainty is translated to understanding. Rather the investigations allow risks to be more accurately defined and quantified. During early project stages, particularly up to project feasibility, investigations seek to identify risks and broadly quantify them. At later stages (final design and preparation of bidding documents) specific investigations may be necessary to target individual risks to better understand their likely impact on the project (particularly time, cost and quality impacts) and how they can be managed through construction and beyond.

Investigations need to be sufficient to provide the most complete bidding documents possible and thereby reduce the likelihood of time delays and cost increases after construction commences. It can be tempting to not invest in investigations in the preparation phase to save cost, but experience shows this is short-sighted and the end result is invariably a greater number of unexpected conditions arising during construction, resulting in time delays and significant cost increases. Nevertheless, investigations may still be required once construction is underway if unexpected ground conditions arise or materials are found to be unsuitable or insufficient to complete the project. The objective is to minimise the need for investigations during construction when the financial impacts will be greatest.

These targeted investigations may still be undertaken directly by the design team (for the Employer), or by contractors seeking to develop well informed bids. Targeted investigations can be shared by all entities involved in the project where all parties benefit from the increased certainty provided.

When designing investigation programmes, some key considerations should include;

i. Achieving adequate definition of baseline information such as the geological setting, underground conditions and hydrological data.

ii. How the investment, and associated cost, made in investigations leads to increased understanding of project risks and hence improved control of costs and project delivery time.

iii. Data on natural hazards, (e.g. river flows, intensity of rains, monsoon period, frequency and magnitude of earthquakes) should be collated and made available with the bidding documents to contractors to allow them to assess project risks. This is particularly important for periods of increased risk exposure during construction such as flood risk.

iv. Proper provision and use of this data is also essential for the definition of thresholds for causes of force majeure events and consequently in the risk management of the Contract.

v. Clear identification of material sources (e.g. quarries) and associated data on material properties and variability. This is to ensure availability of suitable

construction material in adequate quantities including allowance for material that may be required to address identified risks.

vi. Locations for, and suitability of, disposal areas, and satisfactory capacity of the disposal areas.

vii. Identification of environmental effects that require mitigation so that controls associated with environmental requirements can be identified within which construction must occur, and

viii. The preparation of accurate and realistic documentation of investigation findings is important to manage major geological surprises during construction including the most effective construction methodology.

2.1.2 Geotechnical Risk

Geotechnical risks deserve specific mention in the context of hydropower projects. That is because they dominate many aspects of design, construction and performance including;

- selection of dam type,
- material suitability and availability,
- dam, abutment and reservoir performance and safety, and
- leakage losses and yield efficiency of the reservoir

All of these have significant impacts on project costs including; construction, operational and future enhancement and rehabilitation related costs. The challenge with geotechnical aspects is that they are largely hidden, being below the ground surface and vegetation cover. Investigations by their very nature can only sample very small percentages of the area relevant to the design, construction and operation. From these samples geologists and geotechnical specialists form a model of the foundation and abutment conditions on site.

Geotechnical uncertainties and risks are almost always amongst the dominant project risks. These in turn will need to be managed through project planning, management and contractual mechanisms.

In the context of successful project contracts, geotechnical investigations and risk assessment seek to;

I. ***Facilitate contractual understanding*** of the site conditions, referred to as the geotechnical / geological baseline.

II. Inform the parties about risks arising from geotechnical conditions and provide the basis for how these ***risks are assigned between Contractor and Employer***. For example, the contract should clearly state when the Contractor bears risk (e.g. at or below baseline) and when the Employer accepts risk (e.g. above baseline). The boundaries need to be clear to minimise contractual disputes.

III. Establish the baseline setting in order to determine risk allocation and therefore influence risk acceptance, ***bid prices, quantity of change orders and the final cost*** of the project.

To facilitate the clear transfer of geotechnical and geological information to allow contractors to make risk informed decisions the following documents are recommended:

Table 2.1: Key Geotechnical Information Documents

Geotechnical Data Reports (GDR)
• A factual report prepared by geologists to contain all the raw data from investigation, such as borehole logs and laboratory results. Also, geotechnical hazards if known. The GDR documents transfer factual information to the Contractor assisting them to make informed decisions.
Geotechnical Baseline Reports (GBR):
• Prepared by geologists to provide a summary of anticipated ground and groundwater conditions for the purpose of understanding the risks directly applicable to the project. Assists in the proposal and bid preparation process for projects and during contract pricing. These reports seek to provide common understanding to manage risks, potentially reduce construction costs and minimize disputes over unforeseen ground conditions. **The GBR should clearly state respective risks for the Employer and the Contractor.**
A Geotechnical Interpretative Report (GIR):
• Prepared by qualified engineers and geologists to translate the factual report information for geotechnical analysis, e.g. carrying out rock mechanics analysis to estimate foundation strength properties. Expert judgement is necessary in developing conclusions in these reports

For more details on geological and geotechnical documentation;

Dam Safety Guidelines. [1]

ASCE 2007, Geotechnical Baseline Report for Construction – *Suggested Guidelines"* [3]

ICOLD Bulletin 129. Dam Foundations Geologic considerations, Investigation methods, Treatment, Monitoring [4]

2.1.3 Design Risk

Inadequate design or a lack of time to complete the design will become evident during construction, resulting in delays while re-design takes place and cost implications to pay for the changes compared to the bid price.

Inadequate design may be due to lack of investment in investigation (discussed above under geotechnical risk) when design has not accounted for ground conditions that are then encountered.

Other reasons for inadequate design may be a consequence of inexperience within the design consultant or lack of capacity to carry out design tasks in the time required. Appointment of a design consultant with experience in the hydropower projects and has qualified staff available is a key step in reducing the risk of design delays or errors and omissions in the design.

A Panel of Experts (PoE) acting as peer reviewers can also reduce the risk of inadequate design.

Otherwise these problems can cause significant time delays and increases in the project's cost through delaying the Contractor and introducing unscheduled construction works.

Appointing the Design Consultant

An experienced designer should be selected to carry out the design from pre-feasibility stage (i.e. DPR consultant) onwards. The process to select the Designer should be based on the following essential attributes:

i. track record of the design consultancy company,
ii. leadership of the design team by designer experienced in the hydropower projects,
iii. experience of the key design team members in the hydropower projects, and
iv. the methodology and design standards that the Designer proposes to use to carry out design.

Panel of Experts

A Panel of Experts (PoE) independent of the Designer should be engaged for high value and technically complex projects. The PoE brings independent expert advice to the Employer and Owner during both the preparation phase and throughout construction and first filling, Members of the PoE should cover the key expertise areas relating to the likely risks that may be encountered, for example; engineering geology and rock mechanics, hydrology, dam design (in this type of dam) and gate engineering.

Avoid Under-estimation of Quantities

One of the most significant impacts on project cost occurs when items in the Bill of Quantities exceed estimated quantities by 30% or more. The risk of cost overruns due to underestimation of quantities will be reduced if:

i. accurate topographical data is available,

ii. adequate investigations are carried out in the preparation phase to identify excavation quantities, and
iii. if the design is sufficiently detailed to accurately estimate quantities.

Therefore, where possible the investigation and design phase in preparing the DPR needs to be detailed enough to provide a reasonable assessment to remove the need for provisional sums in the bidding documents.

Provisional Items

If the cost of Provisional Items is not estimated with some level of accuracy, then the contract is highly likely to experience cost overruns when the true cost is known (during construction). Therefore, where possible the investigation and design phase in preparing the DPR needs to be detailed enough to provide a reasonable assessment of remove the need for provisional sums in the bidding documents.

2.1.4 Transfer of Information Through the Course of the Project

Geological Baseline Report

The GDR and GBR are essential documents to be included in the bidding documents.

Design Information

The DPR should be supplied with the tender documents to inform the Contractor during the formulation of their bid documents. In particular the following design information should be included in the bidding documents:

- Hydrological information and responsibility for temporary works such as cofferdam design.
- Construction drawings
- Technical specification to support the construction drawings.
- Quantities for the Bill of Quantities

Potential Failure Modes Workshop

Potential Failure Modes describe the way that the dam could fail and also capture operational failures that could lead to large and unplanned releases from the reservoir that could harm people and property downstream.

During the design process, the design consultant needs to be identifying potential failure modes and then reducing their likelihood or mitigating their effect. Mitigation of the Potential Failure Mode will occur through:

i. engineering measures to reduce likelihood,
ii. instrumentation and surveillance measures to identify if they are occurring, and
iii. emergency action plans to reduce the consequences if a failure occurs.

An important step in the project is to transfer knowledge of Potential Failure Modes from the preparation phase all the way through construction to the final phase of long-term operation. Hence a workshop shall be held before the DPR is completed and handed over to the SPV/Project Authority. The workshop should be attended by the design consultant, DHPS, the SPV/Project Authority and Owner's Engineer. The eventual operator (e.g. DGPC) should also be invited to attend. The workshop findings should be summarised in the DPR.

3.0 Tendering and Awarding Construction Contracts

The Department of Hydropower and Power Systems (DHPS) has published Hydropower Guidelines for "Tendering and Awarding Construction Contracts" as Part III Section C of its 2018 Guidelines for Development of Hydropower Projects [5].

This Guidance document recommends the use of FIDIC Conditions of Contract for Bhutan's hydropower development projects because it is an internationally recognised form of contract that has been used successfully on many projects world-wide. A standardised contract form provides the Government of Bhutan with confidence that the risks affecting the national interest are being supported by a well tried and recognised contract, regardless of the nationality of the Contractor. Furthermore, international contractors have most likely been involved with a project that uses FIDIC. The DHPS Hydropower Guidelines discuss contract options. FIDIC forms of contract meet the requirements in the Hydropower Guidelines.

3.1 Tender Documents for Bidders

The Hydropower Guidelines require the tender documents to include:

- Instructions to bidders.
- Proposed General and Particular (Special) Conditions of Contract. Annex A has advice on Particular Conditions that are recommended for hydropower projects in Bhutan.
- Owner's requirements (including Construction Schedule and Technical Specifications).
- Tender drawings
- Bill of Quantities and price schedule (for equipment supply contracts)
- Equipment data sheet for equipment-supply contracts, including performance data requirements.
- Tender and Contract Forms. Annex A includes tender data forms and Annex B provides proforma documents that Bidders will need to submit.

The quality of tender documents will influence the contract outcome. Poor quality documents, ambiguity, errors and omissions are likely to be identified in claims by the Contractor for extra time or cost impacts. The drawings and technical specification need to support each other. Copying technical specification clauses from previous projects should be avoided. This can lead to incorrect or inappropriate technical standards being used.

The Project Board or equivalent governance group shall review the Tender Documents and provide final approval before the documents are distributed to bidders.

3.1.1 Preparing a Bill of Quantities

These Notes for Preparing a Bill of Quantities are intended only as information for the Employer or the person drafting the bidding documents. They should not be included in the final documents. Annex B contains the proforma for a Bill of Quantities.

Objectives

The objectives of the Bill of Quantities are:

(a) to provide sufficient information on the quantities of Works to be performed to enable bids to be prepared efficiently and accurately; and

(b) when a contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Content

The Bill of Quantities should be divided generally into the following sections:

(a) Preamble;

(b) Work Items (grouped into parts);

(c) Daywork Schedule; and

(d) Summary.

Preamble

The Preamble should indicate the inclusiveness of the unit prices, and should state the methods of measurement that have been adopted in the preparation of the Bill of Quantities and that are to be used for the measurement of any part of the Works.

Rock

Where excavation, boring, or driving is included in the Works, a comprehensive definition of rock (always a contentious topic in contract administration), should be provided in the Technical Specification and this definition should be used for the purposes of measurement and payment.

Work Items

The items in the Bill of Quantities should be grouped into sections to distinguish between those parts of the Works that by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, phasing of the Works, or considerations of cost. General items common to all parts of the Works may be grouped as a separate section

in the Bill of Quantities. When a family of Price Adjustment Formulae is used, they should relate to appropriate sections in the Bill of Quantities.

Quantities

Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage, or waste. Quantities should be rounded up or down where appropriate and spurious accuracy should be avoided.

The Bill of Quantities must provide as accurate as possible estimate of quantities for each schedule item. The "130% rule" (refer Section 1.2 above and Annex A, Section 1.2) means that the Contractor is entitled to renegotiate the rate when quantities are more than 130% of the Bill of Quantities item. This has been an issue on several hydropower projects in Bhutan. Improved quantity estimation will reduce this risk.

Units of Measurement

Table 3.1 lists units of measurement and abbreviations recommended for use.

Table 3.1: Units to be used in Bill of Quantities

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m^3 *or* cu m	millimeter	mm
hectare	ha	month	mon
hour	h	number	nr
kilogram	kg	square meter	m^2 *or* sq m
lump sum	sum	square millimeter	mm^2 *or* sq mm
meter	m	week	wk
metric ton (1,000 kg)	t		

Ground and Excavation Levels

The commencing surface should be identified in the description of each item for work involving excavation, boring, or driving, for which the commencing surface is not also the original surface. The excavated surface should be identified in the description of each item for work involving excavation for which the excavated surface is not also the final surface. The depths of work should be measured from the commencing surface to the excavated surface, as defined.

Daywork Schedule

A Daywork Schedule should be included if the probability of unforeseen work, outside the items included in the Bill of Quantities, is relatively high. To facilitate checking by the Employer of the realism of rates quoted by the bidders, the Daywork Schedule should normally comprise:

(a) a list of the various classes of labour, materials, and Contractor's Equipment for which basic Daywork rates or prices are to be inserted by the bidder, together with a

statement of the conditions under which the Contractor will be paid for work executed on a Daywork basis; and

(b) a percentage to be entered by the bidder against each basic Daywork Subtotal amount for labour, materials, and Plant representing the Contractor's profit, overheads, supervision, and other charges.

Provisional Quantities and Sums

Provision for quantity contingencies in any particular item or class of work with a high expectation of quantity overrun should be made by entering specific "Provisional Quantities" or "Provisional Items" in the Bill of Quantities, and not by increasing the quantities for that item or class of work beyond those of the work normally expected to be required. To the extent not covered above, a general provision for physical contingencies (quantity overruns) should be made by including a "Provisional Sum" in the Summary of the Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a "Provisional Sum" in the Summary of the Bill of Quantities. The inclusion of such Provisional Sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by a Nominated Subcontractor should be specified in the relevant part of the Bill of Quantities as a particular Provisional Sum with an appropriate brief description. A separate bidding procedure may be undertaken by the Employer to select the specialists, who are then nominated as subcontractors to the main or prime Contractor. To provide an element of competition among the main bidders (prime Contractors) in respect of any facilities, amenities, attendance, etc., to be provided by the successful bidder as prime Contractor for the use and convenience of the specialist or nominated subcontractor, each related Provisional Sum should be following by an item in the Bill of Quantities inviting a percentage (to be quoted by the main bidder) payable on the actual expenditure from the Provisional Sum.

The provisional sums shall also include an estimated amount to cover the Employer's portion of DAAB's fees and expenses.

As for the estimation of quantities for the Bill of Quantities, it is important to be as realistic as possible about the value of a provisional sum. Contractual claims have been made during construction when a provisional sum is significantly different from the actual cost.

Summary

The Summary should contain a tabulation of the separate parts of the Bill of Quantities carried forward, with provisional sums for Daywork, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable, including DAAB fees and expenses.

Sample Bill of Quantities

A. Preamble

1. *The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, and Drawings.*

2. *The quantities given in the Bill of Quantities are estimated and provisional and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.*

3. *The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.*

4. *A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.*

5. *The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.*

6. *General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.*

7. *Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 13.4 and 13.5 of the General Conditions (refer: 2017 FIDIC Red Book) except with respect to DAAB Fees and Expenses for which no instruction will be required from the Engineer.*

8. *Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clause 13.4 and Clause 13.5 of the General Conditions (refer: 2017 FIDIC Red Book).*

9. *The method of measurement of completed work for payment shall be in accordance with [insert the name of a standard reference guide, or full details of the methods to be used].*[1]

B. Work Items

1. The Bill of Quantities usually contains the following part Bills, which have been grouped according to the nature or timing of the work:

   Bill No. 1—General Items;
   Bill No. 2—Earthworks;
   Bill No. 3—Culverts and Bridges;
   Bill No. 4—etc., as required;
   Daywork Schedule; and
   Summary Bill of Quantities.

2. If the ITB requires currency of Bid and payment to be the same (a) applies, Bidders shall price the Bill of Quantities in local currency only and shall indicate in the Appendix to Bid the percentage expected for payment in foreign currency or currencies. Otherwise ITB foreign currency requirements apply, Bidders shall price the Bill of Quantities in the applicable currency or currencies.

Note that the tables in the Bill of Quantities must be prepared in accordance with the currency alternative nominated in the Information to Tenderers.

[1] The method of measurement should be spelled out precisely in the Preamble to the Bill of Quantities, describing for example the allowances (if any) for timbering in excavation, etc. Many national standard reference guides have been prepared on the subject, and one such guide is the *Standard Method of Measurement* of the U.K. Institution of Civil Engineers.

3.1.2 Dayworks

A "Daywork Schedule" is commonly found in contracts where the likely incidence of unforeseen work cannot be covered by definitive descriptions and approximate quantities in the Bill of Quantities. The preferred alternative is to value the additional work in accordance with the Conditions of Contract. A Daywork Schedule normally has the disadvantage of not being competitive among bidders, who may therefore load the rates assigned to some or all the items. If a Daywork Schedule is to be included at all in the bidding documents, it is preferable to include nominal quantities against the items most likely to be used, and to carry the sum of the extended amounts forward into the Bid Summary in order to make the basic Schedule of Daywork Rates competitive.

The total amount assigned to such competitive daywork is normally 3–5 percent of the estimated base Contract Price and is regarded as a Provisional Sum for contingencies to be expended under the direction and at the discretion of the Engineer.

General

Work should not be executed on a daywork basis except by written order of the Engineer. Bidders will therefore be required to enter basic rates for daywork items in the Schedules, which rates shall apply to any quantity of daywork ordered by the Engineer. Nominal quantities will be entered in the Bill of Quantities against each item of daywork and the extended total for Daywork shall be carried forward as a Provisional Sum to the Summary Total Bid Price. Unless otherwise adjusted, payments for daywork will be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

Daywork Labour

In calculating payments due to the Contractor for the execution of daywork, assume the hours for labour will be reckoned from the time of arrival of the labour at the job site to execute the particular item of daywork to the time of return to the original place of departure, but excluding meal breaks and rest periods. Only the time of classes of labour directly doing work ordered by the Engineer and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing work with the gangs will also be measured but not the time of foremen or other supervisory personnel.

The Contractor will be entitled to payment in respect of the total time that labour is employed on daywork, calculated at the basic rates entered by the Contractor in the Schedule of Daywork Rates, together with an additional percentage payment on basic rates representing the Contractor's profit, overheads, etc., as described below:

(a) The basic rates for labour shall cover all direct costs to the Contractor, including (but not limited to) the amount of wages paid to such labour, transportation time, overtime, subsistence allowances, and any sums paid to or on behalf of such labour for social benefits in accordance with *[country of Borrower]* law. The basic rates will be payable in local currency only.

(b) The additional percentage payment to be quoted by the bidder and applied to costs incurred under (a) above shall be deemed to cover the Contractor's profit, overheads, superintendence, liabilities, and insurances and allowances to labour, timekeeping, and clerical and office work, the use of consumable stores, water, lighting, and power; the use and repair of stagings, scaffolding, workshops, and stores, portable power tools, manual plant, and tools; supervision by the Contractor's staff, foremen, and other supervisory personnel; and charges incidental to the foregoing. Payments under this item shall be made in the following currency proportions:

(i) foreign: ___ percent (to be stated by bidder).[2]

(ii) local: _____ percent (to be stated by bidder).

This method of indicating profit and overheads separately facilitates the addition of further items of daywork, if needed, the basic costs of which can then be checked more easily. An alternative is to make Daywork rates all-inclusive of the Contractor's overhead and profit, etc., in which case this paragraph and the relevant Daywork Schedule should be modified accordingly.

Daywork Materials

The Contractor will be entitled to payment in respect of materials used for daywork (except for materials for which the cost is included in the percentage addition to labour costs), at the basic rates entered by the Contractor in the Schedule of Daywork Rates, together with an additional percentage payment on the basic rates to cover overhead charges and profit, as follows:

(a) the basic rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc., and shall provide for delivery to store for stockpiling at the Site. The basic rates shall be stated in local currency, but payment will be made in the currency or currencies expended upon presentation of supporting documentation.

(b) the additional percentage payment shall be quoted by the bidder and applied to the equivalent local currency payments made under (a) above. Payments under this item will be made in the following currency proportions:

(i) foreign: ___ percent (to be stated by the bidder);[3]
(ii) local: _____ percent (to be stated by the bidder);

(c) the cost of hauling materials for use on work ordered to be carried out as daywork from the store or stockpile on the Site to the place where it is to be used will be paid in accordance with the terms for Labour and Construction in this schedule.

[2] The bidder shall state the percentage in a common foreign currency equivalent required for payment and the exchange rates and official sources used.

[3] The bidder shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.

Daywork Contractor's Equipment

The Contractor shall be entitled to payments in respect of Contractor's Equipment already on Site and employed on daywork at the basic rental rates entered by the Contractor in the Schedule of Daywork Rates. These rates shall be deemed to include allowance for depreciation, interest, indemnity, and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, and all overhead, profit, and administrative costs related to the use of such equipment. The cost of drivers, operators, and assistants will be paid for separately as described under the section on Daywork Labour. An alternative, sometimes adopted for administrative convenience, is to include the cost of drivers, operators, and assistants in the basic rates for Contractor's Equipment.

In calculating the payment due to the Contractor for Contractor's Equipment employed on daywork, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the travelling time from the part of the Site where the Contractor's Equipment was located when ordered by the Engineer to be employed on daywork and the time for return journey thereto shall be included for payment.

The basic rental rates for Contractor's Equipment employed on daywork shall be stated in local currency, but payments to the Contractor will be made in currency proportions, as follows:

(a) foreign: _____ percent (to be stated by the bidder).[4]

(b) local: _____percent (to be stated by the bidder).

3.2 Pre-qualification of Bidders

The Hydropower Guidelines discuss the merits of pre-qualification of tenderers versus post-qualification of tenderers. This Guideline recommends use of pre-qualification processes. Pre-qualification Criteria for final selection of the Contractor should be included in the tender document.

The Developer needs to consider the recommendations in Section 1.1 of this Guideline when selecting both the Designer and the Contractor. If the necessary expertise is not present, then the Developer should re-consider the preferred selection or add suitably qualified and experienced advisors to the project.

As noted in Section 1.1.2, the Developer needs to determine if the Contractor has sufficient financial strength to complete the contract. The Government of Bhutan has found it necessary to intervene in previous projects to support the Contractor (e.g. advance payments or taking over the works). None of these are satisfactory, so trying to ascertain the financial strength of the Contractor in the bid stage is important to prevent future occurences.The Pre-qualification process is the time to determine if a Contractor is at risk of liquidity problems during the project. This is difficult when the Contractor is part of a larger multi-layered conglomerate, and some

[4] The bidder shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.

expert consulting advice may be needed to provide satisfaction that the Contractor is able to complete the project. Penalties, performance bonds and other financial instruments that provide some recourse for the Developer should be investigated during preparation of the Tender Documents.

As noted in Section 1.1.3, to be assured that the Employer is receiving independent advice, the Contractor must not have any commercial links to the Designer or to the Owner's Engineer (and certainly not to the Engineer to the Contract).

Several of the forms for Bidders to submit in Annex B can be used for the pre-qualification stage.

3.3 Design Documents to be Provided to Bidders

The Hydropower Guidelines describe the information that should be prepared to provide the Tender Design for the tendering Contractors. In accordance with the Hydropower Guidelines, the Tender Design should aim to *"fully define all technical characteristics of the project".* The DPR (or a Design Report to similar level of detail) is to be provided in the Request for Bid documents, which includes:

- a summary of field investigations,
- design criteria applied,
- results of geotechnical, stability and structural analyses,
- the full GBR,
- design criteria for hydro-mechanical and electro-mechanical equipment, and
- main characteristics of equipment.

The Panel of Experts shall review the design documents and provide final approval before the documents are distributed to bidders.

3.4 Introduction to FIDIC

The FIDIC form of contract is internationally recognised and suitable for hydropower projects. Some specific additions and adjustments need to be included with the FIDIC standardised conditions of contract to align with local practises and requirements of Bhutan, and this approach is typical throughout the world. The following guidance material is provided on the basis that FIDIC contract forms are adopted.

FIDIC is a French language acronym for Fédération Internationale Des Ingénieurs-Conseils, which means the international federation of consulting engineers. Over time concerted effort has been placed on gaining broad consultation and acceptance of standard contract forms resulting in them being ratified by many international contracting and financing institutions. Because of the broad support for FIDIC contracts, they are the foremost contracts in international construction, with representative associations in over 100 countries.

A range of contracts forms are available within the FIDIC document library. The one most typically relevant to hydropower construction in Bhutan is "The (new) **Red Book**" [6] which is most suited to contracts where the majority of design rests with the Employer. This can be compared to "The (new) **Yellow Book**" [7] where the Contractor holds most of the design responsibility, and "The **Silver Book**" [8] which is used for turn-key projects.

A derivative of the Red Book is the Multilateral Development Bank (MDB) Pink Book that represents a formalisation of the amendments to the Red Book that had been developed by the MDBs for use in aid-funded projects. The purpose was to 'simplify the use of the FIDIC Conditions of Contract not only for the MDBs and their borrowers but also for others involved with project procurement including engineers, contractors, and contract specialists. The "**Pink Book**" was intended for use on MDB financed projects only.

Essentially, the Pink Book should be regarded as a version of the Red Book, though the amendments should not be underestimated. Many of the amendments are additional provisions aimed at achieving financial probity and transparency. The intention of many of the Pink Book amendments to the Red Book is to avoid fraudulent and corrupt practices, and the Employer is given additional explicit powers of termination on such grounds.

A brief introduction to each of these is provided in Table 3.2 below.

Table 3.2: Main FIDIC Contracts

FIDIC Contract	Relevant design and construction situation
Red Book	The design, prepared by the Employer's staff or by consultants acting on its behalf, is provided to the Contractor in the form of Specifications and Drawings (and any Schedules). The payment mechanism is traditional measurement and valuation. However, it is open to the Parties to vary this position.
Yellow Book	The design is prepared by the Contractor in accordance with the Employer's Requirements, which specify 'the purpose, scope and/or design and/or other technical criteria for the Works. The Contractor accepts a fitness-for-purpose obligation for the Works, including the design. The payment mechanism for the Yellow Book is lump sum fixed price, with provision for progress payments on the basis of Engineer certification. Like the Red Book, the Yellow Book contract is administered by the Engineer (see above)
Silver Book	Is a lump sum EPC turnkey contract. As with the Yellow Book, the design is prepared by the Contractor in accordance with the Employer's Requirements. The Contractor assumes full responsibility for the engineering, procurement and construction of the Works and undertakes a fitness for purpose obligation for the Works, including the design.
Pink Book	A version of the Red Book with Conditions of Contract for Construction MDB (Multilateral Development Bank - Harmonised Edition) for Building and Engineering Works Designed by the Employer, Third Edition 2010.

The DHPS Hydropower Guidelines recommend the FIDIC Red Book for Civil Works Contracts using a traditional Bill of Quantities approach. Note the DHPS Guidelines assume the 1999 (first) edition of the Red Book. These Guidelines recommend the up to date 2017 edition of the Red Book as outlined below.

The Hydropower Guidelines recommend the FIDIC Silver Book for EPC (Engineering, Procurement and Construction) contracts and provide advice on some clause amendments to the General and Particular Conditions.

The Hydropower Guidelines recommend the FIDIC Yellow Book for equipment supply contracts.

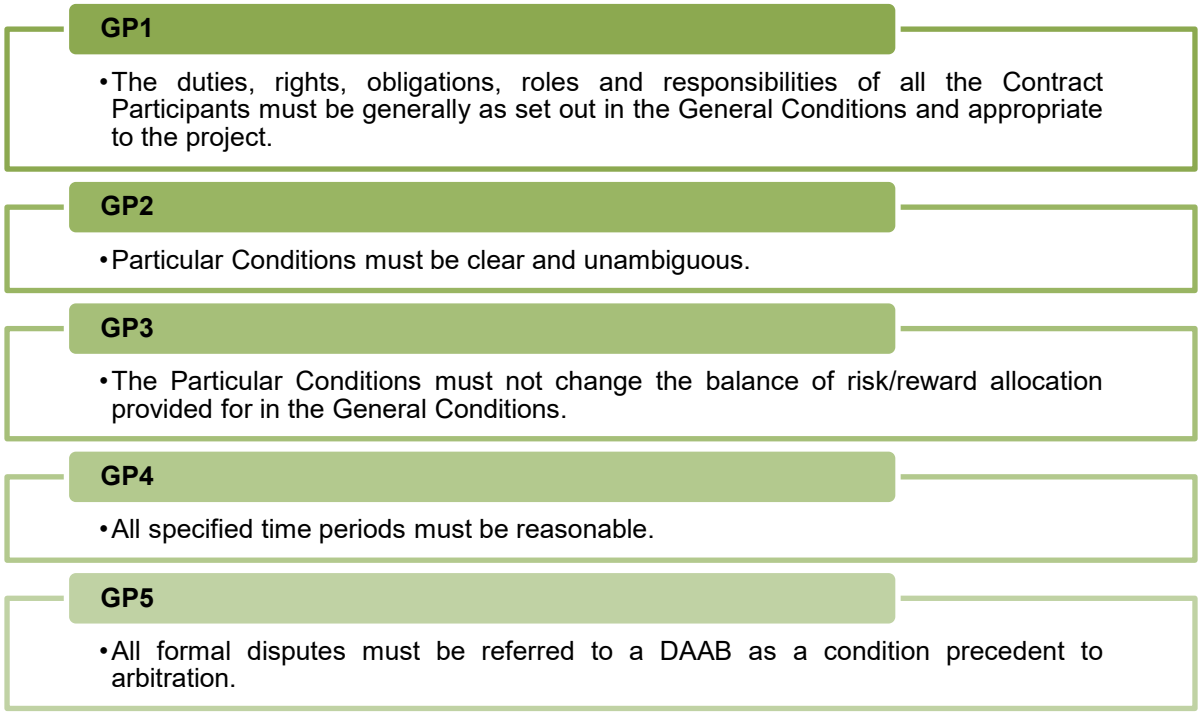
Contract Version (FIDIC 2017)

With the exclusion of the Pink Book, all of the contract types discussed above were all revised in 1999 so that they share a common format and sequence clauses. This assists users to move between contracts as required. Various updates to individual contracts have occurred since 1999; however, the full set (Red, Yellow and Silver) was revised and re-released in 2017.

This new suite of FIDIC contracts is described by FIDIC as second editions of the Red, Yellow and Silver Books. While similar to their 1999 predecessors, these new versions are a substantial revision and represent a significantly different proposition for an intending user to consider.

The contracts have been expanded with the historic 20-clause structure replaced by 21 clauses in all three Books. A new feature of the 2017 forms is the inclusion of a set of criteria known as the Golden Principles (GPs). Their purpose is to act as a benchmark which must be met if a contract is to be regarded as a FIDIC contract. For example, if the Employer has undertaken heavy amendment of key provisions, this may result in the contract not being deemed a FIDIC contract. The GPs provide guidance on how to modify the General Conditions (GCs) in the Particular Conditions (PCs). By definition, the provisions of a Contract that are based on unamended GCs will comply with the GPs. However, if such provisions are administered incorrectly, the intent of the GPs will not be achieved. The GPs are shown in Figure 3.1.

Figure 3.1: Golden Principles within FIDIC Contract Documents.



While these are not of legal effect, they will guide parties in negotiation to support their contention that a contract is, or is not, to be regarded as a 'real' FIDIC contract.

FIDIC provides a helpful discussion document on the main changes included in the 2017 versions of the Books.

http://fidic.org/sites/default/files/press%20release_rainbow%20suite_2018_03_1.pdf

3.4.1 Structure of Contract

FIDIC is usually divided in two parts:

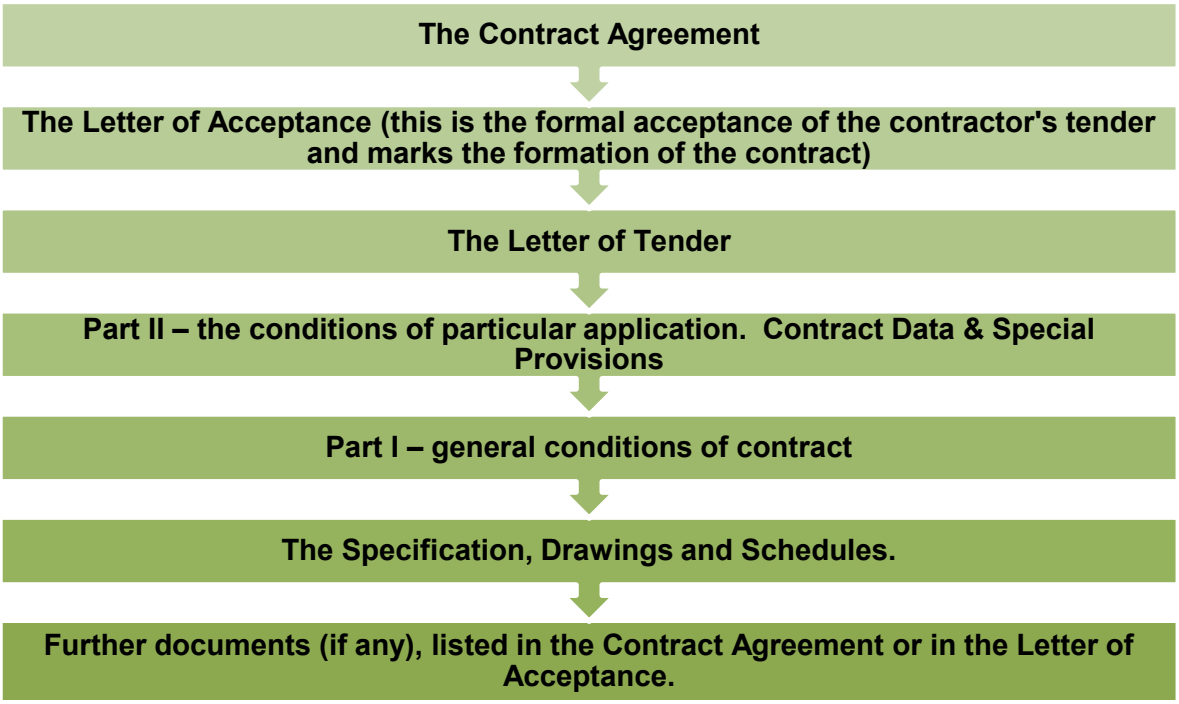
- Part I consisting of the General Conditions, and
- Part II concerning the conditions of particular application (including guidelines for the preparation of Part II clauses).

Part I contains the general terms of the contract, covering such issues as rights and obligations of each party, procedure for payment, variation, certification and dispute resolution.

Part II of the contract is the conditions of particular application and is to be used to introduce project specific clauses, such as language of the contract, choice of law, the name of the person or company appointed to act as Engineer or Employer's Representative for the project among other terms. The Appendix contains a sample of documents to be used for the procurement process.

In most FIDIC forms there is a default hierarchy for the documents forming the contract as shown in Figure 3.2. The order of priority is as stated below and in the event of inconsistency the first on the list takes precedence. The parties can rearrange the priority of documents or stipulate that no priority or order of hierarchy will apply to the contract. This can be done in Part II of the contract.

Figure 3.2: Hierarchy of Contract Documents.



3.4.2 Role of Engineer

The Employer administers the contract through the services of a person, firm or company, termed the Engineer. While appointed and paid for by the Employer, the position in respect of Employer and Contractor spans from agency to complete independence. It is important that the Engineer has no contractual link with the Contractor, but the duties in respect of both parties are defined in the Contract. The consultancy contract between the Engineer and the Employer will also provide important task definitions.

For the Contractor, the Engineer is a third party that is acting either on behalf of the Employer, or impartially between the parties in certain positions, e.g. when fulfilling judicial tasks, expressions of satisfaction with the works, and issuance of payment certificates.

A typical arrangement of the main relationships between parties is shown on Figure 3.3:

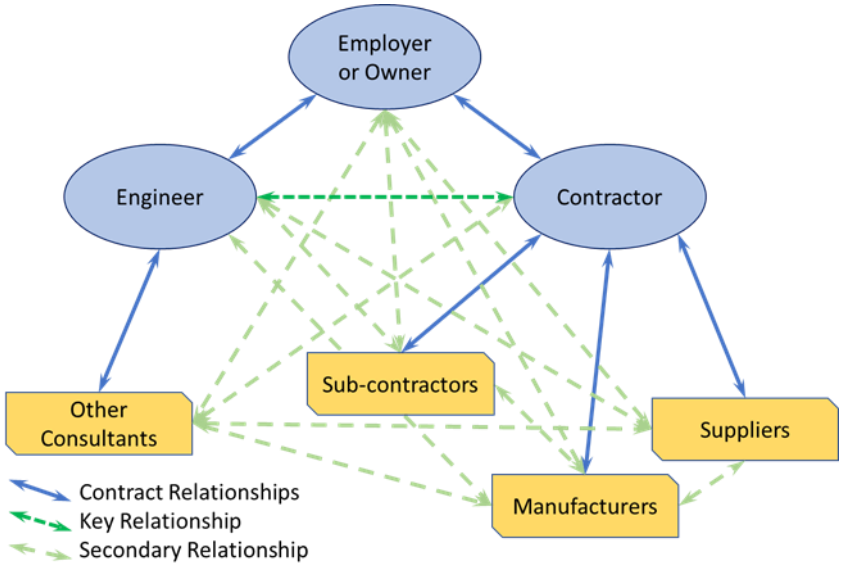


Figure 3.3: Relationship of Parties involved in a Contract

This dual duty has been recognised by international courts as not being inconsistent with one another and as a result both should be observed and executed by the Engineer depending on what the circumstances called for in any given situation. (Refer. Sutcliffe Appellant v Thackrah and Others [1974] A.C. 727)

The Engineer has a duty of exercising due skill and care while carrying out his/her duties, as may be expected by the standards of his/her professional position. This duty is due to the Employer, with whom he has a contractual link, but there is a caveat as to the Engineer owing such duty to the Contractor in tort, since the Contract interposes the Employer between Contractor and Engineer and in law.

The role of the Engineer under FIDIC has been more clearly defined in the 2017 version. Table 3.3 summarises the role of the Engineer:

Table 3.3: The Role of the Engineer

Aspect	Commentary	Clauses (FIDIC 2017)
Definition	The engineer is defined as part of the "Employer's Personnel" that is appointed by the Employer.	1.1.33 1.1.35 3.1
Qualification	The Engineer is required to be *a professional engineer having suitable qualification, experience and competence at act as the Engineer under the Contract*.	3.1 3.2
Duty	Except for otherwise stated in subsequent conditions the "*Engineer shall act as a skilled professional and shall be deemed to act for the Employer*".	3.2
Contract	The Engineer has "*no authority to amend the Contract*". Nor can he/she "*relieve either Party of any duty, obligation ore responsibility under or in connection with the Contract*" except as provided for "*in these Conditions*".	3.2
Determinations	When seeking agreement between the parties or making determinations the Engineer "shall not be deemed to act for the Employer", but "neutrally between the Parties" and "shall make a fair determination".	3.7 3.7.2
Consultation	Obligations are placed on the Engineer to undertaken and facilitate meaningful consultation.	3.7.1

In summary, in the FIDIC 2017 form of contract the importance of the Engineer increases through a stronger administrative role, with prescriptive and well-defined procedural steps which specify the time limits and seek to remove ambiguity. Clarity and time limits are an advantage to both Employer and Contractor. Further the dual role of the Engineer is clarified by taking a clear position for his/her neutrality when making determinations that are unfettered by influence of the Employer. To reflect common practice, the Engineer can now also be a legal entity, rather than an individual.

3.4.3 Risk Management using the Contract

Proper risk allocations in construction contracts can help reduce adverse impacts on delivery programme and costs and achieve management efficiency. FIDIC contracts, like other standard forms of construction contract, seek to pre-allocate responsibilities for risks which may transpire during the project delivery phase between the Employer and the Contractor.

Where the Employer assumes responsibility for a particular risk the Contractor is contractually entitled to an extension to the Time for Completion and/or an addition to the Contract Price. Where a responsibility for a particular risk is allocated to the Contractor, the occurrence of the risk would not generate an entitlement to additional time or money to complete the Work.

Previous versions of FIDIC induced some confusion between;

- "risk" being the combination of likelihood and consequence, and
- the impact parties in terms of costs or time.

The FIDIC contract documents of 2017 seek to remove this confusion, but retain the well-established general approach to risk being;

i. the **Contractor is best suited to deal with risks associated with works planning and execution, provision of labour, materials and construction equipment, and safety of site operations**;

ii. the **Employer assumes the risk of providing the Site** (and any information he has collected about the Site) **and ensuring it is available for the Contractor to carry out his work, and the extra cost incurred by the Contractor due to the occurrence of unforeseeable risks**; and

iii. **design risks are borne by the party responsible for providing the design**.

Further, the Contractor remains responsible for any loss or damage to the Works until the Employer formally takes over the site unless the loss or damage was caused by risks for which the Employer is responsible and for which the Contractor has no liability (FIDIC 2017 Cl 17.1).

Risks that can induce significant time delays, where possible need early warning of such events (FIDIC 2017, Cl 8.4) and mechanisms for assessing extensions of time (FIDIC 2017, Cl 8.5). Such risks include those arising from aspects listed in Table 3.4;

Table 3.4: Type and Management of Risks

Aspect	Commentary	Clause
Natural Risks	Typically risks concerning climatic conditions such as rainy or cold days, moderate floods and land instability.	17.2
Political and Social Risks	Most political and social risks are allocated to the Employer, e.g. war, civil commotions, disorders and strikes.	
Economic	Economic risks occur frequently during construction period, particularly the fluctuation of prices of materials, labour and equipment. (Cl 13.8).	13.8
Law Change	The Contractor is entitled to an Extension of Time and additional cost caused as a result of the changes in the laws that occur after the Base Date in the Contract. Therefore, under FIDIC Form, such legal change risks are basically retained by the Employer.	13.6
Labour / Material Shortages	The Contractor typically bears all the consequences of the risks of unavailability of the required personnel, materials and equipment, except for allowable Extensions of Time (EOT) in case of unforeseeable shortage.	4.1 6.1
Design Error	The risk of faults, errors or omissions from the design as supplied by the Employer that could not be readily identified by the Contractor, largely lie with the Employer.	17.2
Behavioural	These are caused by one party's action or inaction that adversely impacts the project or other party. The Employer is responsible for his own behavioural risks, including the risks of Engineer who acts on the Employer's behalf, and the Contractor is responsible for his own risks, including those of the Sub-Contractor.	Multiple

Force Majeure

Force Majeure provisions are common in construction contracts. In FIDIC 2017 these have been re-labelled “Exceptional Events” (FIDIC 2017, Cl 18). The definition and intent is however largely unchanged;

Exceptional Event means an event or circumstance which;

i. is beyond a Party’s control;
ii. the party could not reasonably have provided against before entering the Contract;
iii. having arisen, such Party could not reasonably have avoided or overcome; and
iv. is not substantially attributable to the other Party.

4.0 Management During Construction

The DHPS Hydropower Guidelines for "Construction Phase – Technical Aspects" as Part III Section D of its 2018 Guidelines for Development of Hydropower Projects [9] apply in the construction phase.

The Hydropower Guidelines discuss the many aspects of construction management including: design, quality assurance and quality control programmes, cost monitoring, time-schedule monitoring, risk management, commissioning, and project completion. The SPV/Project Authority is required to consider the recommendations in the Hydropower Guidelines, where implementing these strategies to improve construction management.

Effective management during construction is essential for minimising the impacts of various issues as they arise during construction. Utilising the guidelines and bidding documents will mitigate many issues identified in hydropower projects in Bhutan (refer Section 1.2). The intention is to ensure the bidding documents and contract clearly:

- allocate risk during the contract works,
- set the performance requirements for the completed works and provide mechanisms to validate (or reject) construction quality,
- set the time frame for completion,
- provide processes for payment,
- provide a process for dispute resolution, and
- if necessary, termination of the contract.

4.1 Roles

During the construction phase the three main parties are Employer, Engineer, and Contractor. The Hydropower Guidelines detail the typical responsibilities for each party during the construction phase. The core responsibilities typically associated with each party are summarised below. Particular responsibilities can be defined in the contract, if required.

During construction **the Employer's responsibilities** are typically:

- Cost and schedule changes
- Approval of design
- Approval of equipment when cost changes are involved
- Decisions on variations
- Decision on construction schedule adjustments
- Claim management decisions
- Approval of environmental, social, and health & safety compliance
- Decisions on risk management and approval of emergency plans
- Approve and submit reports to RGoB

The Employer shall appoint **the Owner's Engineer**, who has the capacity and resources to carry out the tasks. The typical duties of the Owner's Engineer during construction are:

- Routine project management and documentation.
- Prepare design or approve design if no cost changes are involved.
- Approve temporary works.
- Approval of equipment when no cost changes are involved.
- Supervise the quality assurance and quality control.
- Advise on technical specification matters.
- Approval of equipment when no cost changes are involved.
- Approve or reject components, stages or milestones of the Works as required in the Specification.
- Evaluate variation claims.
- Review contract interface issues.
- Monitor Contractor's environmental, social, and health & safety compliance.
- Regularly update the Project Risk Register, propose risk mitigation measures, review emergency plans, monitor implementation.
- Prepare reports on behalf of Employer and review contractor reports.

The Employer shall appoint **the Engineer to the Contract.** As noted in Section 1.1.4, the Engineer to the Contract has the specific independent duties (set out in the FIDIC Red Book) during construction, namely:

- Formal approvals required by the Contract
- Approve or reject completed works, equipment or components,
- Approve payment claims.
- Decide claims for cost extension or time.
- Determine contract interface issues.

The Contractor responsibilities are defined in the contract documents and typical responsibilities during construction include:

- Preparation of temporary works.
- Preparation of equipment.
- Quality assurance and quality control programmes.
- Requests for payments and quotes for variations.
- Progress reports, construction schedules, progressing the works.
- Identify issues with contract interfaces.
- Issue claims
- Implement environmental, social, and health & safety measures.
- Prepare and implement emergency plans.

For more detailed information, the DHPS Hydropower Guidelines discuss strategies for each party to successfully fulfil their responsibility. An extensive list of international references is

provided in the Hydropower Guidelines and all parties can benefit from implementing the recommendations in these documents.

4.2 Risk Management

Even with robust guidelines and bidding documents, not all risk is eliminated and there is still a need to manage risks during construction. The risk management process can be divided into three components:

i. identification of risks,
ii. developing mitigation plans, and
iii. actively managing risks by implementing mitigation plans.

Risk management should involve all parties in order to create a comprehensive plan that benefits everyone.

Identification of risks must start before construction begins. Information provided in the DPR and tender documents forms the basis for creating an initial Project Risk Register, which should be updated as new information becomes available. Project Risk Register (PRR) is a simple and highly effective tool for facilitating the identification and management of project risk. For a sample Risk Register refer to Table 1.4: Example of Simple Risk Register.

Developing mitigation plans for the identified risk is essential for avoiding or minimising the potential impacts. Risks during construction can include hydrological, geological, construction management, environmental, cultural and social, and health and safety. For a more detailed list of risks, refer to DHPS Hydropower Guidelines Part III Section D [9].

Many issues previously experienced during hydropower projects in Bhutan can be mitigated with appropriate planning and effective management during construction. Section 1.2 discusses issues that have arisen. Potential construction management actions that will avoid future problems (or at least mitigate their effects) are listed below:

- Record all site conditions.
- Record all site exposures due to variable geology.
- Design changes before design issue causes delay of Works.
- Flood management during Works.
- Design resources for making changes.
- Capacity of SPV/Project Authority and Owner's Engineer to supervise the Contractor and subcontractors.
- Designer capacity and resources during construction to make timely decisions
- Scope control to minimise non-project-related work.
- Pricing review of Provisional Sums.
- Rate data to support variation negotiation.

To summarise, thorough investigation and good design combined with strong bidding documents will reduce risks, but not entirely eliminate them. Using tools, such as a Project Risk Register, and developing mitigation plans will help identify and manage risks during construction.

References

[1] World Bank and RGOB, “Bhutan Dam Safety Guidelines (Draft),” 2019.

[2] DHPS, DHPS, “Guidelines for Development of Hydropower Projects Part II,” Department of Hydropower and Power Systems, Ministry of Economic Affairs, Bhutan, 2018.

[3] ASCE, “Geotechnical Baseline Reports for Construction: Suggested Guidelines,” American Society of Civil Engineering, 2007.

[4] ICOLD, “Bulletin 129. Dam Foundations - Geologic Considerations, Investigation Methods, Treatment, Monitoring,” International Commission on Large Dams, 2005.

[5] DHPS, “Guidelines for Development of Hydropower Projects, Part III Section C: Pre-Construction Phase - Tendering & Awarding of Construction Contracts,” Royal Government of Bhutan, Ministry of Economic Affairs, Department of Hydropower & Power Systems, 2018.

[6] FIDIC, “Conditions of Contract for Construction, For Building and Engineering Works Designed By The Employer,” International Federation of Consulting Engineers, 2017.

[7] FIDIC, “Conditions of Contract for Plant and Design-Build,” International Federation of Consulting Engineers, 2017.

[8] FIDIC, “Conditions of Contract for EPC Turnkey Projects,” International Federation of Consulting Engineers, 2017.

[9] DHPS, “Guidelines for Development of Hydropower Project, Part III Section D: Construction Phase - Technical Aspects,” Royal Government of Bhutan, Ministry of Economic Affairs, Department of Hydropower & Power Systems, 2018.

[10] Royal Audit Authority, “Audit Report of PHPA I, PHPA II, and MHPA,” RGOB, 2018.

Annex A: Recommended Particular Conditions of Contract

1.0 Particular Conditions of Contract:

The following are the recommended changes to Particular Conditions of the 2017 Red Book FIDIC Contract to be applied to hydropower projects in Bhutan.

In several Sub-Clauses of the Particular Conditions the number of days has been modified with respect to the "Information and Instructions for Bidders" and "General Conditions of Contract" (hereinafter called GCC) used in previous contracts for hydropower projects in Bhutan. It is essential to carefully select the proposed figures.

1.1 Clause 2: The Employer

Clause 2 provides clauses relevant to the Employer. There are no additions or changes necessary for these clauses.

Note that under Sub-clause 2.4 (FIDIC 2017) "*Employer's Financial Arrangements*" has been further developed with the Employer required to describe financial arrangements in the Contract Data. The Employer must notify the Contractor if there is a material change, and (at the request of the Contractor) provide evidence that financial arrangements are in place to enable payment.

1.2 Clause 3: The Engineer

Clause 3 provides clauses relevant to the Engineer. There are no additions or changes necessary for these clauses.

The enhanced provisions provided in FIDIC 2017 and relevant to the Engineer are discussed in Section 3.3.2 of the main document above.

1.3 Clause 4: The Contractor

Clause 4 provides clauses relevant to the Contractor.

The Sub-clause 4.2 deals with Performance Security. Paragraph 1.32 of the Information and Instruction to Bidders states within 30 days hence this Sub-clause has been adjusted for consistency. The second paragraph in this Sub-clause, immediately under the sub heading 4.2.1 Contractor Obligations, is worded in a generic form with respect to the country controlling the project. This needs to be made specific to Bhutan by replacing the first paragraph under 4.2.1 with;

> *The Contractor shall deliver the Performance Security to the Employer, with a copy to the Engineer, within **30** days after receiving the Letter of Acceptance. The Performance Security shall be issued by any Banks in Bhutan or any international Banking Institutions with endorsement/counter guarantee by any Bank in Bhutan, approved by the Employer, and shall be in the form annexed to the Particular Conditions, or in another form approved by the Employer. The Performance Security shall be*

denominated in the currency in which the Contract Price is payable, or in a freely convertible currency acceptable to the Employer.

Sub-Clause 4.15 Access Route defines the Contractor's responsibility around access routes. Included in Sub-clause 4.15 is an alphabetical list ((a) to (e)) that includes for example; the suitability of access routes, repairs, maintenance and signage and third-party claims.

The existing list is to be augmented by the inclusion of the following Clauses taken from Clause 30 ii) and iii) of the GCC to provide additional specificity around access route responsibilities;

(f) ***Special Loads.*** *Should it be found necessary for the Contractor to move one or more loads of Constructional Plant, machinery or pre-constructed units or parts of units of work over part of a highway or bridge, the moving whereof is likely to damage any highway or bridge unless special protection or strengthening is carried out, then the Contractor shall, before moving the load on to such highway or bridge, give notice to the Engineer of the weight and other particulars of the load to be moved and his proposals for protecting or strengthening the said highway or bridge. Unless within fourteen days of the receipt of such notice, the Engineer shall, by counter-notice, direct that such protection or strengthening is unnecessary, then the Contractor will carry out such proposals or any modification thereof that the Engineer shall require and, unless there is an item or are items in the Bill of Quantities for pricing by the Contractor of the necessary works for the protection or strengthening aforesaid, the costs thereof shall be paid by the Employer to the Contractor.*

(g) ***Settlement of Extraordinary Traffic Claims****. If during the execution of the Works or at any time thereafter the Contractor shall receive any claim arising out of the execution of the Works in respect of damage or injury to highways or bridges, he shall immediately report the same to the Engineer and thereafter the Employer shall negotiate the settlement of and pay all sums due in respect of such claim and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings, damages, costs, charges and expenses in relation thereto. Provided always that if and so far as any such claims or part thereof shall, in the opinion of the Engineer, be due to any failure on the part of the Contractor to observe and perform his obligations, then the amount certified by the Engineer to be due to such failure shall be paid by the Contractor to the Employer.*

1.4 Clause 5: Sub-contracting

Clause 5 provides clauses relevant to the responsibilities of the Contractor in relation to sub-contracts. There are no additions or changes required to these clauses.

1.5 Clause 6: Staff and Labour

Clause 6 provides clauses relevant to Staff and Labour particularly in terms of Contractor responsibilities.

An addition shall be added at the end of Sub-clause 6.4 Labour Laws to make the overall clause directly relevant to the laws of Bhutan.

The Contractor shall, in respect of labour employed by him, comply with the provision of the various labour laws of the country and shall indemnify the Employer in respect

of all claims that may be made against the Employer for non-compliance thereof by the Contractor.
Notwithstanding anything contained herein, the Engineer may take such actions as may be necessary for compliance of the various labour laws and recover the costs thereof from the Contractor.

Sub-clause 6.9 Contractor's Personnel specifies the responsibility of the Contractor in terms of their personnel. Further it indicates where the Engineer may intervene on matters of personnel. This clause needs to be enhanced to provide specificity when considering the Contractor's use of foreign personnel on projects in Bhutan as follows

Sub-Clause 6.9.1 Foreign Personnel

The Contractor shall submit to the Employer, the details and bio-data of all foreign personnel he proposes to bring into Bhutan for the performance of the Works under the Contract. Such data for each person shall, besides the proof of his citizenship, contain the name, his present address, his assignment and responsibility in connection with the Works, and a short resume of his qualifications, experience etc. in relation to the Works to be performed by him.

Any person unsuitable and unacceptable to the Employer shall not be brought to Bhutan. Any person, if found unsuitable or unacceptable to the Employer on a later date, shall within a reasonable time, be repatriated by the Contractor, who shall make alternative arrangements for providing a suitable replacement

No person brought to Bhutan for the purposes of the Works shall be repatriated without the consent of the Employer in writing, which shall be based on a written request from the Contractor for such repatriation giving reasons for such an action to the Engineer. The Employer may give permission for such repatriation provided it is satisfied that the progress of Works shall not suffer due to such repatriation/replacement.

The Contractor and his expatriate personnel shall observe/respect all Bhutanese Acts, Laws, Rules and Regulations and shall not in any way interfere with Bhutanese political and religious affairs and shall meticulously follow any other Rules and Regulations which the RGoB, the Employer and the Engineer may impose on them from time to time. The Contractor's expatriate personnel shall work and live in close co-operation with their co-workers and the community and shall not engage themselves in any other employment either part time or full time nor shall they take part in any local politics.

The Employer will assist the Contractor, to the extent possible, in obtaining necessary permits to travel to Bhutan and back by issue of necessary certificates and other information needed by the RGoB and other agencies.

The Contractor shall, deliver to the Engineer, a return in detail in such form and at such intervals as the Engineer may prescribe showing the supervisory staff and the number of the several classes of labour from time to time employed by the Contractor on the site and such information in respect of constructional plant as the Engineer may require.
The Contractor shall be responsible for observance by his Sub-Contractors of the foregoing provisions.

1.6 Clause 7: Plant, Materials and Workmanship

Sub-clause 7.1 Manner of Execution defines the Contractors responsibility associated with matters including but not limited to; the supply, and testing of Plant, and the production and testing of Material. The clause includes alphabetical list ((a) to (c)) that provides specifics on this clause. To provide greater certainty around achieving timely progress under the contract the following additions are required to this list.

(d) The Contractor shall initiate timely action to procure the materials well in advance so as to ensure that the progress of Works does not suffer for want of the materials on the site at least thirty days before these are intended to be used on Works. Any setback to the progress of the Works and consequent delay in completion of the Works on account of non-availability of materials on Site shall be the sole responsibility of the Contractor.

(e) Within thirty days after the issue of the Letter of Acceptance, the Contractor shall submit a Schedule of the mobilization of the Constructional Plant conforming with the plant list submitted with his bid. He shall also indicate whether he owns the Constructional Plant or he proposes to purchase or hire the same and shall furnish proof that he shall be able to arrange this Constructional Plant whether from his own resources or on hire. He shall also submit a list of the Constructional Plant required during the first year along with a list of the orders for purchase/hire of this Constructional Plan.

Sub-clause 7.8 Royalties defines the Contractors responsibility to pay all royalties, rents and other payments. To provide greater clarity, the following additions are required.

The Accepted Contract Amount shall be deemed to include royalty charges, rents and other payments, and taxes, duties, levies etc. as applicable. The Contractor shall abide by the applicable regulations on royalties and rents and applicable acts of Kingdom of Bhutan and amendments thereof. A separate Tax Guidelines for hydropower projects, issued by the Royal Government of Bhutan, shall also be applicable.

Each party hereby agrees to indemnify and keep indemnified and saved harmless at all the times the other party against any claims, action, proceedings, loss, cost, expenses or damage suffered or incurred by it by reason of the party which has failed to pay taxes, duties, levies etc. which it is obliged to pay pursuant to the provisions of this clause and/or applicable laws and/or arising out of its failure to comply with its obligations under such provisions and/or applicable laws.

1.7 Clause 8: Commencement, Delays and Suspension

The management of the contract programme and potential extensions of time (EOT) is a major aspect of any construction contract and is dealt with in Clause 8 (FIDIC 2017). The importance of the Contractor's programme, for execution of the Works, has been further recognised in FIDIC 2017 with the addition of greater requirements around initial and revised programmes.

Sub-clause 8.1 Commencement of Works defines the process for initiating the execution of the works. To ensure that this is done with expediency, the Commencement Date as defined in reference to the Letter of Acceptance needs to be reduced from "…within 42 days…" to "…within 30 days…" such that the clause reads (with recommended change in bold).

*The Engineer shall give Notice to the Contractor stating the Commencement Date, not less than 14 days before the Commencement Date. Unless otherwise stated in the Particular Conditions, the Commencement Date shall be within **30** days after the Contractor receives the Letter of Acceptance.*

Sub-clause 8.3 Programme details the requirements around the submission of initial and revised programme for the execution of the Works. For consistency the time defined in the first sentence of Sub-clause 8.3 should be increased from 28 days to 30 days so that the first sentence reads (with recommended change in bold).

*The Contractor shall submit an initial programme for the execution of the Works to the Engineer within **30** days after receiving the Notice under Sub-clause 8.1 [Commencement of Works]. The programme shall be prepared using an acceptable scheduling software, latest version of Primavera or its equivalent softwares.*

Further, Sub-clause 8.3, while dealing with revised programmes only requires that these be submitted "whenever the programme ceases to reflect or is otherwise inconsistent with the Contractors obligations". To provide greater certainty that the programme is a true reflection of anticipated progress the following shall be added to the end of Sub-clause 8.3.

The construction programme shall be revised at three monthly intervals or as necessary, as the work progresses to meet this requirement and should include a chart of the principal quantities of Work forecast for execution monthly, and a schedule of payments expected to be made to the Contractor by the Employer.

The construction programme shall be of the critical path method, or equivalent, in the form of a network diagram and activity listing. The network diagram shall show in detail and in orderly sequence all activities, their descriptions, durations, and dependencies or precedencies, necessary to the completion of the Works. The activity listing shall show the following information for each activity on the network diagram:

a) Identification by activity number and description
b) Duration
c) Earliest start and finish dates
d) Latest start and finish dates
e) Total float time

Code numbers for critical path method type schedules shall consist of not more than four digits.

The submission to and approval by the Engineer of such programmes or the furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the Contract

The Contractor shall, whenever required by the Engineer also provide in writing, for his information a general description of the arrangements such as deployment of modern and efficient machinery, skilled and unskilled labour and methods, which the Contractor proposes to adopt for the execution of Works.

Sub-clause 8.7 Rate of Progress details a process by which the Engineer can instruct the Contractor to produce a revised programme that demonstrates how progress will be expedited to achieve completion of the Works within the relevant Time of Completion. To provide additional specificity in this clause the following is to be added at the end of Sub-clause 8.7. It is noted that this clause is re-numbered from Sub-clause 8.6 in the previous version of FIDIC.

To achieve the required progress, the Work may be required to be carried out round the clock. The period of completion and number of working days shall not be affected by the number of shifts each day. No extra amount on account of any shift work is payable to the Contractor.

Sub-clause 8.8 Delay Damages defines the payment of Delay Damages by the Contractor. For consistency the following addition to the end of Sub-clause 8.8 is necessary. It is noted that this clause is re-numbered from Sub-clause 8.7 in the previous version of FIDIC.

Payment of delay damages by the Contractor will be valued in accordance with the appropriate Schedule

1.8 Clause 9: Testing on Completion

Clause 9 details the obligations placed on the Contractor associated with testing on completion of the works. No additions or changes are required for this clause. It is worth noting however that FIDIC 2017 places additional requirements on the Contractor, particularly around the provision to the Engineer of a detailed test programme.

1.9 Clause 10: Employer's Taking Over

Clause 10 defines the conditions and process for the Employer to take over the Works. No additions or changes are required for this clause.

1.10 Clause 11: Defects after Taking Over

Clause 11 provides conditions relevant to addressing defects up until the expiry date of the relevant Defects Notification Period. No additions or changes are required for this clause.

FIDIC 2017 has expanded Clause 11 in the area of;

- the removal of Plant off-site to facilitate the remedy of defects Sub-clause 11.5;
- undertaking further tests after remediating defects Sub-clause 11.6; and
- the Contractors rights of access after the Employer has taken over Sub-clause 11.7.

1.11 Clause 12: Measure and Evaluation

Clause 12 defines how the Works will be measured and valued and contains specific linkages to handle disputes under Sub-clause 3.7 Agreement and Determination.

The following adjustments to the thresholds provided in Sub-clause 12.3 are required.

The threshold pertaining to the measured quantity of an item in 12.3 (b) (i) shall be increased from 10% to 30% and 12.3 (b) (iii) increased from 1% to 10% such that the full text reads, with the changes highlighted in bold.

(b) (i) The measured quantity of an item is changed by more than 30% from the quantity of this item in the Bill of Quantities or other Schedules,
(b) (ii) [unchanged]
(b) (iii) This change in quantity directly changes the Cost per unit quantity of this item by more than 10%, and
(b) (iv) [unchanged].

1.12 Clause 14: Contract Price and Payment

Clause 14 provides details of the payment process and details associated on costs.

Sub-clause 14.1 The Contract Price provides an alphabetical list of conditions ((a) to (d)). The last condition (d) needs to be enhanced through the following additions shown in bold.

(d) the Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price ***and every item*** *in the Schedules* ***which has a total amount exceeding 0.1% of the Accepted Contract Amount****. The Engineer may take the breakdown into account when preparing Payment Certificates but shall not be bound by it."*

Sub-clause 14.2 Advanced Payments defines how payments made in advance of the Commencement of Works will be progressed. For completeness the second paragraph should be adjusted to include "Constructional Plant" as follows and shown in bold;

After receiving the Advanced Payment Certificate, the Engineer shall make an advanced payment, as an interest-free loan for mobilisation and for ***Constructional Plants*** *(and design, if any). The amount of the advance payment and the currencies in which it is to be paid shall be stated in the Contract Data*

Further the following addition is required to provide increased specificity.

Advances for execution of the Works, if required by the Contractor, will be granted in the following cases provided that the advances given or taken for particular Work are spent only for that Work.

Advance for Mobilisation.

Advance, to the percentage stated in the Contract Data, of the Contract Price can be granted for the following preliminary and enabling Works;

a) *Construction of colonies, store and workshops etc. including camps, labour sheds and stores etc. provided to the Contractor by the Employer on cost recoverable basis.*
b) *Mobilisation of labour*
c) *Overhaul, dismantling and transportation of Contractor's Constructional Plant to the Site including procurement of spare parts.*
d) *Construction of enabling Works and foundations for the Constructional Plant etc.*

The advance to the extent of half of total value admissible will be released within one month of the date of signing of Agreement. The rest of the advance will be released in two equal instalments commensurate with the progress of above cited preliminary and enabling Works on the certificate of the Engineer.

The advance will be disbursed on production of the irrevocable Bank Guarantee on the Proforma from any Banks in Bhutan or any international Banking Institutions.

The advance is recoverable, and the deduction of the advance shall be made on prorate percentage basis from the interim payments certified by the Engineer under the Contract. The deduction shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached 10% (ten percent) of the Contract Price until such time as the advance has been fully repaid, provided always that the entire amount of advance shall be completely deducted by the time the total of all payments to the Contractor has reached 80% (eighty percent) of the Contract Price.

Advance for Constructional Plant.

Advance to the extent of 90% (ninety percent) of the cost of new Constructional Plant paid by the Contractor for which the Contractor shall produce satisfactory evidence, subject to the maximum percentage stated in the Contract Data, will be granted on the following Conditions;

a) *The Constructional Plant for which advance is required shall be approved by the Engineer.*

b) *The advance against new indigenous Constructional Plant will be released after the equipment has reached the Site and is duly hypothecated in favour of the Employer.*

c) *The advance against imported Constructional Plant will be released on production of documents as a proof thereof, provided the Constructional Plant is fully insured from the port to the Site and hypothecated in favour of the Employer.*

d) *The advance to the extent of 90% against the new Constructional Plant can also be released to the Contractor against invoice, at his request, on production of Bank Guarantee for an amount equal to the amount of advance. This bank guarantee shall be released after the equipment reaches the site, is duly*

hypothecated in favour of the Employer and such plant and equipment is insured for its full value against all risks at the Contractor's cost.

The advance is recoverable, and the deduction of the advance shall be made on prorate percentage basis from the interim payments certified by the Engineer under the Contract. The deduction shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached 10 (ten) percent of the Contract Price until such time as the advance has been fully repaid, provided always that the entire amount of advance shall be completely deducted by the time the total of all payments to the Contractor has reached 80% (eighty percent) of the Contract Price.

The first paragraph under Sub-heading 14.2.1 Advance Payment Guarantee is generic in terms of country and jurisdiction. This needs to be replaced with the following specific to Bhutan. Note, the first sentence is unchanged

The Contractor shall obtain (at the Contractor's cost) an Advance Payment Guarantee in amounts and currencies equal to the advance payment, and shall submit it to the Employer with a copy to the Engineer. This guarantee shall be issued by the Banks in Bhutan or any international Banking Institutions approved by the Employer, and shall be in the form annexed to the Particular Conditions or in another form approved by the Employer.

Sub-clause 14.3 Application for Interim Payments provides the process for the Contractor to submit a Statement to the Engineer following each payment period as stated in the Contract Data. The following additional condition, specific to Bhutan, is to be included at the end of Sub-clause 14.3.

If the Contractor expressly requests in writing, he will be permitted to convert the Retention Money recovered from his Interim Payment Certificates into interest bearing Government Securities of interest-bearing deposits with a Scheduled banks in Bhutan or any international banking institutions taken out in the name of Engineer or into Bank Guarantee in instalments of Ngultrum one million in favour of the Employer issued by the Banks in Bhutan or international banking institutions or any Scheduled banks in Bhutan or any international banking institutions.

Sub-clause 14.5 Plant and Material intended for the Works details how allowance for Plant and Material is made under Sub-clause 14.3 Application for Interim Payment. In the last paragraph of Sub-clause 14.5 the specified percentage can be reduced from 80% to 75% as shown in full below with change in bold.

The amount so agreed or determined shall take account of the evidence and documents required under this Sub-clause and of the contract value of the Plant and Materials. If sub-paragraph (b) above applies, the Engineer shall have no obligation to certify any payment under this Sub-clause until the Employer has received the bank

*guarantee in accordance with sub-paragraph (b)(iii) above. The sum to be certified by the Engineer in an IPC shall be the equivalent of **seventy five percent (75%)** of the agreed or determined amount.*

Sub-clause 14.7 Payment defines the requirement on the Employer to pay the Contractor. The 56 day periods stated in Sub-clause 14.7 is to be replaced with 60 days as shown in full and highlighted in bold. IPC refers to Interim Payment Certificate and FPC refers to Final Payment Certificate.

(b) the amount certified in each IPC issued under;
*(i) Sub-clause 14.6 [Issue of IPC], within the periods stated in the Contract Data (if not stated, **60 days**) after the Engineer receives the Statement and supporting documents; or*
(ii) [unchanged]
*(c) The amount certified in the FPC within the period stated in the Contract Data (if not stated, **60 days**) after the Employer receives the FPC.*

*All payments to be made by the Employer to the Contractor (advance, Interim Certificate Payments and Final Bill) shall be released and credited into a designated **Escrow Account** with the following conditions:*

*a) A designated **Escrow Account** shall be opened by the Contractor after Notification of Award with Nationalized/Scheduled Commercial Bank in Bhutan. Particulars of the Escrow Account shall be submitted by the Contractor to the Employer before submitting request for mobilization advance. Any charges for Escrow Account must be borne by the Contractor.*
b) The Employer shall release payments into the Escrow Accounts only.
c) In case of financial crunch or other exigency, the Employer may make direct payment to the vendor in the interest of the project with the consent of the Contractor.

Sub-clause 14.8 Delayed Payment provides details of the Contractors rights if they do not receive payment in accordance with Sub-clause 14.7 Payment. To provide certainty to both parties, condition (c) in the alphabetical list ((a) to (c)) in Sub-clause 14.8 needs to be modified as follows with the chance indicated in bold;

(a) [unchanged]
(b) [unchanged]
*(c) In the absence of such rate at either place **interest shall accrue to the Contractor on a daily basis at a simple rate of ten percent per annum (365 days) commencing ninety days after the date on which the Contractor submitted the application for payment.***

Sub-clause 14.9 Release of Retention Money defines the process for the release of retention money. A consequential addition arising from the recommended addition to Sub-clause 14.3 is the following addition.

If the Contractor, according to the Sub-Clause 14.3 of the Particular Conditions, has converted the Retention Money into Government Securities or into Bank Guarantee the guarantee mentioned in the fifth paragraph of the Sub-Clause is not required.

1.13 Clause 15: Termination by Employer

Clause 15 defines the process to follow should the Contractor fail to carry out any obligation under the Contract. No additions or changes are necessary for Clause 15. It is noted that FIDIC 2017 has been enhanced from previous versions with more detail to improve process clarity and transparency.

1.14 Clause 16: Suspension and Termination by Contractor

Clause 16 defines the process to follow should the Engineer or Employer fail to carry out their obligations under the Contract. No additions or changes are necessary for Clause 15. As with Clause 15, Clause 16 has also been enhanced in FIDIC 2017.

1.15 Clause 17: Care of the Works and Indemnities

Clause 17 defines responsibility and liability for the works. No additions or changes are necessary for Clause 17. It is noted that Clause 17 has been renamed from Risk and Responsibility in previous versions and re-ordered to address difficulties experienced by users.

1.16 Clause 18: Exceptional Events

Clause 18 covers circumstances that are beyond a Party's control. No additions or changes are necessary for Clause 18. Note that Clause 18 replaces Clause 19 Force Majeure in previous versions. The change in title and sequence in the Contract is to achieve consistency between the updated versions and other FIDIC documents.

1.17 Clause 19: Insurance

Clause 19 defines responsibilities associated with insurance cover. It is noted that Clause 19 by way of sequence was Clause 18 in previous versions of FIDIC.

Sub-clause 19.2 Insurance to be Provided by the Contractor specifies the various insurance covers the Contractor shall provide. Within the Sub-clause, sub-heading 19.2.5 Injury to Employees needs to include the following additional condition;

> *It shall be mandatory for the Contractor to place the insurance for 'Accident or Injury to Workmen' with any Insurance Company in Bhutan.*

1.18 Clause 20: Employers and Contractors Claims

Clause 20 deals with claims. No additions or changes are necessary for Clause 20. It is noted however that previous versions of FIDIC also included Disputes in Clause 20. Disputes are now provided for in the subsequent Clause 21. This has been done to remove the perception that Claims automatically progress to Disputes. Further the process for Contractor and Employers Claims are now dealt with in the same way.

1.19 Clause 21: Disputes and Arbitration

Clause 21 deals the process for addressing disputes. As noted above this is a new Clause having been separated from Clause 20 in previous versions

For consistency there are a couple of incidences where time allowances need to be adjusted. Firstly, in the first paragraph Sub-clause 21.1 Constitution of the DAAB from 28 days to 30 days as follows with change highlighted in bold.

> *Disputes shall be decided by a DAAB (Disputes Avoidance/Adjudication Board) in accordance with Sub-clause 21.1 [Obtaining DAAB's Decision]. The Parties shall jointly appoint the member(s) of the DAAB within the time stated in the Contract Data (if not stated **30 days**) after the date the Contractor received the Letter of Acceptance.*

Then, in the first paragraph Sub-clause 21.2 Failure to Appoint DAAB Members change sub-point (c) from 42 days to 30 days as follows with change highlighted in bold

(a) [unchanged]
(b) [unchanged]
*(c) the Parties fail to agree the appointment of a replacement within **30 days** after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, illness, resignation or termination of appointment; or.*
(d) [unchanged]

Sub-clause 21.6 Arbitration deals with situation where there is dissatisfaction or non-compliance with a DAAB decision and matters proceed to arbitration. The first paragraph of Sub-clause 21.6 needs to be amended by replacing the reference to "international arbitration" as follows with change highlighted in bold.

*Unless settled amicably, and subject to Sub-Clause 3.7.5 [Dissatisfaction with Engineers Determination], Sub-Clause 21.4.4 [Dissatisfaction with DAAB's Decision], Sub-Clause 21.7 [Failure to Comply with DAAB's Decision] and Sub-Clause 21.8 [No DAAB in Place], any Dispute in respect of which the DAAB's decision (if any) has not become final and binding shall be finally settled by **the Arbitral Tribunal of Bhutan under the Alternate Dispute Resolution Act of Bhutan**.*

1.20 Particular Conditions - Part A: Contract Data

Contract Data

[*All italicized text and any enclosing square brackets is for use in preparing the form and should be deleted from the final product.]*
[Note: bold figures reflect Usual International practice]

Conditions	**Sub-clause**	**Data**
Employer's name and address	1.1.31 & 1.3	_____ _____ _____
Engineers name and address	1.1.35 & 1.3	_____ _____ _____
Bank's name		_____
Borrowers name		_____
Time for Completion	1.1.84	_____days
Defects Notification Period (DNP)	1.1.27	365 days
Electronic transmission systems	1.3	_____
Governing Law	1.4	_____
Ruling language	1.4	English
Language for communications	1.4	English
Time for access to the Site	2.1	_____ days after Commencement Date
Engineer's Duties and Authority	3.2	Variations resulting in an increase of the Accepted Contract Amount in excess of ____% shall require approval of the Employer.
Performance Security	4.2	The performance security will be in the form of a _____ in the amount of ____% **5-10%** of the Accepted Contract Amount. *[Insert either one of "demand guarantee" or "performance bond" and percentage of Accepted Contract Amount]*
Normal working hours	6.5	_____

Conditions	**Sub-clause**	**Data**
Delay damages for the Works	8.8 & 14.15(c)	_____ % of the Contract Price per day.
Maximum amount of delay damages	8.8	_____ % of the final Contract Price ***[10%]***
Adjustments for Changes in Cost	13.7	Period "n" applicable to the adjustment multiplier "Pn": __3__ *[Insert the period if different from one (1) month]*
Advance for Mobilization	14.2	_____ %, Percentage of the Accepted Contract Amount ***[0-5%]***
Advance for Constructional Plant	14.2	_____ %, Percentage of the Accepted Contract Amount ***[0-10%]***
Repayment amortization rate of advance payment	14.2.3	_____ %
Percentage of Retention	14.3 (iii)	_____ %
Limit of Retention Money	14.3 (iii)	____ % of the Accepted Contract Amount ***[5%]***
Plant and Materials	14.5(b)(i) 14.5(c)(i)	Plant and Materials for payment when shipped en route to the Site Plant and Materials for payment when delivered to the Site
Minimum Amount of Interim Payment Certificates (IPCs)	14.6.2	1% of the Accepted Contract Amount
Maximum total liability of the Contractor to the Employer	17	*[Select one of the two options below as appropriate*] The product of _____ *[insert a multiplier less or greater than one]* times the Accepted Contract *[or]* ____ *[Insert amount of the maximum total liability]*
Periods for submission of insurance		*[Insert period for submission of evidence of insurance and policy. Period may be from 14 days to 28 days]*
evidence of insurance	19.1	_____days
relevant policies	19.1	_____days
Maximum amount of deductibles for insurance of the Employer's risks	19.1	*[Insert maximum amount of deductibles]*
Minimum amount of third party insurance	19.2.4	*[Insert amount of third party insurance]*

Conditions	Sub-clause	Data
Date by which the DAAB shall be appointed	21.1	28 days after the Commencement Date
The DAAB shall be comprised of	21.1	*Three (3) members*
Failure to Appoint DAAB Members	21.2	Appointment (if not agreed) to be made by Chief Justice, Thimphu High Court

1.21 Schedules relating to Particular Conditions to be used in Tender Documents

SCHEDULE 1: Table of adjustment data

SCHEDULE 2: Liquidated Damages for Delay

SCHEDULE 1

Table of adjustment data

Coefficients to be used in the Sub-Clause 13.8 “Adjustments for Changes in Cost”

Coefficient	Value	Index
A	……	Non-adjustable portion
B	……	Labour
C	……	Cement
D	……	Steel
E	……	All commodities
F	……	Fuel and lubricants

SCHEDULE 2

Liquidated Damages for Delay

Should the Contractor fail to complete the separable portions of the Work identified below or to complete the whole of the Work within the periods and dates specified under the Contract, the Contractor shall pay to the Employer as fixed liquidated damages the sums shown below for any calendar day or a part of a calendar day of delay under the Contract.

If the liquidated damages are levied on any items of work on account of delay in some Milestone and if, the Contractor achieves the next Milestone within specified time, the liquidated damages already levied for that item of work shall be refunded.

Milestone No.	Description	Time for completion (days)	Amount of Liquidated damages per day
1	……	xx	Ngultrum …. per day subject to a maximum of. …
2	……	yy	
3	……	zz	
…	……	…	
…	Completion of the Works as a whole	---	

Annex B: Documents to be submitted by Bidders

1 Letter of Tender
2 Schedule of Cost Indexation
3 Table of Adjustment Data
4 Bill of Quantities
5 Daywork Schedule
6 Summary of Specified Provisions
7 Grand Summary
8 Technical Proposal
9 Site Organisation
10 Method Statements
11 Mobilization Schedule
12 Construction Schedule
13 ES Management Strategies
14 H&S Management Strategies
15 Code of Conduct for Contractors
16 Equipment
17 Contractor's Representative
18 Bidder's Qualifications following Prequalification
19 Bidder Information Form
20 Bidder's JV Information Form
21 Historical Contract Non-performance
22 Environmental and Social Performance
23 Financial Situation and Performance
24 Average Annual Construction Turnover
25 Current Contract Commitments
26 Form of Bid Security – Demand Guarantee
27 Form of Bid Securing Declaration

Letter of Tender

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Tender on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text in is to help Bidders in preparing this form.

Date of this Bid submission: [*insert date (as day, month and year) of Bid submission*]

Request for Bid (RFB) No.: [*insert identification*]

Alternative No.: [*insert identification No if this is a Bid for an alternative*]

To: **[*insert complete name of Employer*]**

We, the undersigned, declare that:

(a) **No reservations:** We have examined and have no reservations to the bidding document, in accordance with Instructions To Bidders (ITB);

(b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB;

(c) **Bid-Securing Declaration:** We have not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing or Proposal-Securing Declaration in the Employer's country in accordance with ITB;

(d) **Conformity:** We offer to execute in conformity with the bidding document and in accordance with the construction schedule the following Works: *[insert a brief description of the Works];*

(e) **Bid Price:** The total price of our Bid, excluding any discounts offered in item (f) below is: *[Insert one of the options below as appropriate]*

Option 1, in case of one lot: Total price is: [*insert the total price of the Bid in words and figures, indicating the various amounts and the respective currencies*];

Or

Option 2, in case of multiple lots: (a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and (b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

(f) **Discounts:** The discounts offered and the methodology for their application are:

(i) The discounts offered are: *[Specify in detail each discount offered.]*

(ii) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

(g) **Bid Validity Period**: Our Bid shall be valid for a period specified in BDS (or as amended if applicable) from the date fixed for the Bid submission deadline specified in BDS (or as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(h) **Performance Security**: If our Bid is accepted, we commit to obtain a Performance Security [*and an Environmental and Social (ES) Performance Security, **Delete if not applicable***] in the forms in accordance with the bidding document;

(i) **One Bid Per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other Bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITB, other than alternative Bids submitted in accordance with ITB;

(j) **Suspension and Debarment**: We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Employer's country. Further, we are not ineligible under the Employer's country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(k) **State-owned enterprise or institution:** [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITB*];

(l) **Commissions, gratuities, fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

(m) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(n) **Not Bound to Accept**: We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive;

(o) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption;

(p) **Potential DAAB Members:** We hereby propose the following three persons, whose curriculum vitae are attached, as potential Dispute Avoidance/Adjudication Board (DAAB) members (Refer FIDIC Clause 21.1):

Name	Address
1. …….....	
2. ……..	
3. ……	

Name of the Bidder:*[*insert complete name of person signing the Bid*]

Name of the person duly authorized to sign the Bid on behalf of the Bidder:**[*insert complete name of person duly authorized to sign the Bid*]

Title of the person signing the Bid: [*insert complete title of the person signing the Bid*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]

Date signed [*insert date of signing*] **day of** [*insert month*], [*insert year*]

Date signed _____ day of _____, __

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

Schedule of Cost Indexation

*[**Note to Employer:** It is recommended that the Employer is advised by a professional with experience in construction costs and the inflationary effect on construction costs when preparing the contents of the Schedule of Cost Indexation. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved]*

[The formulae for price adjustment shall be of the following general type:]

Pn= a + b Ln / Lo + c En/ Eo + d Mn/Mo + ...

where:

"Pn" is the adjustment multiplier to be applied to the estimated contract value in the relevant currency of the work carried out in period "n", this period being a month unless otherwise stated in the Contract Data;

"a" is a fixed coefficient, stated in the relevant table of adjustment data, representing the non-adjustable portion in contractual payments;

"b", "c", "d", ... are coefficients representing the estimated proportion of each cost element related to the execution of the Works as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials;

"Ln", "En", "Mn", ... are the current cost indices or reference prices for period "n", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

"Lo", "Eo", "Mo", ... are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The cost indices or reference prices stated in the Table of Adjustment Data shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table).

If the currency in which the Contract price is expressed is different from the currency of the country of origin of the indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z_0 / Z_1, where,

Z_0 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Base date, and

Z_1 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Date of Adjustment.

Table of Adjustment Data

[In Tables A, B, and C, below, the Bidder shall; (a) indicate its amount of local currency payment, (b) indicate its proposed source and base values of indices for the different foreign currency elements of cost, (c) derive its proposed weightings for local and foreign currency payment, and (d) list the exchange rates used in the currency conversion.

In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]

Table A. Local Currency

Index code*	Index description*	Source of index*	Base value and date*	Bidder's related currency amount	Bidder's proposed weighting
	Nonadjustable	—	—	—	a: _____* b: _____* c: _____* d: _____* e: _____*
			Total		**1.00**

[* To be entered by the Employer. Whereas "a" should a fixed percentage, b, c, d and e should specify a range of values and the Bidder will be required to specify a value within the range such that the total weighting = 1.00].

Table B. Foreign Currency (FC)

State type: ..... [If the Bidder is allowed to receive payment in foreign currencies this table shall be used. If Bidder wishes to quote in more than one foreign currency (up to three currencies permitted) then this table should be repeated for each foreign currency.]

Index code	Index description	Source of index	Base value and date	Bidder's related source currency in type/amount	Equivalent in FC1	Bidder's proposed weighting
	Nonadjustable	—	—	—		**a: _____*** **b: _____*** **c: _____*** **d: _____*** **e: _____***
				Total		**1.00**

[* To be entered by the Employer. Whereas "a" should a fixed percentage, b, c, d and e should specify a range of values and the Bidder will be required to specify a value within the range such that the total weighting = 1.00]

Table C. Summary of Payment Currencies

Table: Alternative A

For ……*[insert name of Section of the Works]*

Name of payment currency	**A** **Amount of currency**	**B** **Rate of exchange** **(local currency per unit of foreign)**	**C** **Local currency equivalent** **C = A x B**	**D** **Percentage of Total Bid Price (TBP)** **100xC / TBP**
Local currency _____		**1.00**		
Foreign currency #1 _____				
Foreign currency #2 _____				
Foreign currency # _____				
Total Bid Price _____		[*To be entered by the Employer*]		[*To be entered by the Employer*]
Provisional sums expressed in local currency				
TOTAL BID PRICE (including provisional sum)				

Table: Alternative B

To be used only with Alternative B Prices directly quoted in the currencies of payment. *(refer to ITB)*

Summary of currencies of the Bid for _____ *[insert name of Section of the Works]*

Name of currency	*Amounts payable*
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[*To be entered by the Employer*]

Bill of Quantities

Bill No. 1: General Items

Item no.	*Description*	*Unit*	*Quantity*	*Rate*	*Amount*

Total for Bill No. 1 ______

(carried forward to Summary, p. ____)

Bill No. 2: Earthworks

Item no.	*Description*	*Unit*	*Quantity*	*Rate*	*Amount*

Total for Bill No. 2 ______

(carried forward to Summary, p. ____)

Bill No. 3: Culverts and Bridges

Item no.	*Description*	*Unit*	*Quantity*	*Rate*	*Amount*

Total for Bill No. 3 ______

(carried forward to Summary, p. ____)

Daywork Schedule

General

Dayworks are subject to FIDIC 2017 Red Book Sub-Clause 13.5 of the General Conditions. Work shall not be executed on a daywork basis except by written order of the Engineer. Bidders shall enter basic rates for daywork items in the Schedules, which rates shall apply to any quantity of daywork ordered by the Engineer. Nominal quantities have been indicated against each item of daywork, and the extended total for Daywork shall be carried forward as a Provisional Sum to the Summary Total Bid Price. Unless otherwise adjusted, payments for daywork shall be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

Daywork Labour

1. In calculating payments due to the Contractor for the execution of daywork, the hours for labour will be reckoned from the time of arrival of the labour at the job site to execute the particular item of daywork to the time of return to the original place of departure, but excluding meal breaks and rest periods. Only the time of classes of labour directly doing work ordered by the Engineer and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing work with the gangs will also be measured but not the time of foremen or other supervisory personnel.

2. The Contractor shall be entitled to payment in respect of the total time that labour is employed on daywork, calculated at the basic rates entered by the Contractor in the **Schedule of Daywork Rates: 1. Labour,** together with an additional percentage payment on basic rates representing the Contractor's profit, overheads, etc., as described below:

   (a) The basic rates for labour shall cover all direct costs to the Contractor, including (but not limited to) the amount of wages paid to such labour, transportation time, overtime, subsistence allowances, and any sums paid to or on behalf of such labour for social benefits in accordance with *[country of Borrower]* law. The basic rates will be payable in local currency only.

   (b) The additional percentage payment to be quoted by the bidder and applied to costs incurred under (a) above shall be deemed to cover the Contractor's profit, overheads, superintendence, liabilities, and insurances and allowances to labour, timekeeping, and clerical and office work, the use of consumable stores, water, lighting, and power; the use and repair of stagings, scaffolding, workshops, and stores, portable power tools, manual plant, and tools; supervision by the Contractor's staff, foremen, and other supervisory personnel; and charges incidental to the foregoing. Payments under this item shall be made in the following currency proportions:

      (i) foreign: ___ percent (to be stated by bidder).[5]

      (ii) local: _____ percent (to be stated by bidder).

[5] The bidder shall state the percentage in a common foreign currency equivalent required for payment and the exchange rates and official sources used.

Daywork Materials

1. The Contractor shall be entitled to payment in respect of materials used for daywork (except for materials for which the cost is included in the percentage addition to labour costs as detailed heretofore), at the basic rates entered by the Contractor in the **Schedule of Daywork Rates: 2. Materials,** together with an additional percentage payment on the basic rates to cover overhead charges and profit, as follows:

   (a) the basic rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc., and shall provide for delivery to store for stockpiling at the Site. The basic rates shall be stated in local currency, but payment will be made in the currency or currencies expended upon presentation of supporting documentation.

   (b) the additional percentage payment shall be quoted by the bidder and applied to the equivalent local currency payments made under (a) above. Payments under this item will be made in the following currency proportions:

      (i) foreign: ____ percent (to be stated by the bidder);[6]
      (ii) local: _____ percent (to be stated by the bidder);

   (c) the cost of hauling materials for use on work ordered to be carried out as daywork from the store or stockpile on the Site to the place where it is to be used will be paid in accordance with the terms for Labour and Construction in this schedule.

Daywork Contractor's Equipment

1. The Contractor shall be entitled to payments in respect of Contractor's Equipment already on Site and employed on daywork at the basic rental rates entered by the Contractor in the **Schedule of Daywork Rates: 3. Contractor's Equipment.** Said rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity, and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, and all overhead, profit, and administrative costs related to the use of such equipment. The cost of drivers, operators, and assistants will be paid for separately as described under the section on Daywork Labour.

[Note to the Employer: An alternative, sometimes adopted for administrative convenience, is to include the cost of drivers, operators, and assistants in the basic rates for Contractor's Equipment. The last sentence of this paragraph should then be modified accordingly.]

2. In calculating the payment due to the Contractor for Contractor's Equipment employed on daywork, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the travelling time from the part of the Site where the Contractor's Equipment was located when ordered by the Engineer to be employed on daywork and the time for return journey thereto shall be included for payment.

[6] The bidder shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.

3. The basic rental rates for Contractor's Equipment employed on daywork shall be stated in local currency, but payments to the Contractor will be made in currency proportions, as follows:

   (a) foreign: _____ percent (to be stated by the bidder).[7]

   (b) local: _____ percent (to be stated by the bidder).

[7] The bidder shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.

Schedule of Daywork Rates: 1. Labour

Item no.	*Description*	*Unit*	*Nominal quantity*	*Rate*	*Extended amount*
				Subtotal	
D122	Allow ____ percent[a] of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above.				

Total for Daywork: Labour _____

(carried forward to Daywork Summary, p. ___)

a. To be entered by the Bidder.

Schedule of Daywork Rates: 2. Materials

Item no.	*Description*	*Unit*	*Nominal quantity*	*Rate*	*Extended amount*
				Subtotal	
	Allow ____ percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 4 (b) above.				
				Total for Daywork: Materials	_____
				(carried forward to Daywork Summary, p. ___)	

a. To be entered by the Bidder.

Schedule of Daywork Rates: 3. Contractor's Equipment

Item no.	*Description*	*Nominal quantity (hours)*	*Basic hourly rental rate*	*Extended amount*
	Allow _ percent[a] of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 5 above.			
			Total for Daywork: Contractor's Equipment	_____
			(carried forward to Daywork Summary, p. ___)	

a. To be entered by the Bidder.

Daywork Summary

	Amount[a] *( )*	*% Foreign*
1. Total for Daywork: Labour		
2. Total for Daywork: Materials		
3. Total for Daywork: Contractor's Equipment		
Total for Daywork (Provisional Sum) (carried forward to Bid Summary, p. ___)	_____	_____

a. The Employer should insert local currency unit.

Summary of Specified Provisional Sums

Bill no.	*Item no.*	*Description*	*Amount*
1			
2			
3			
4			
		[*To be entered by the Employer]* provisional sums for the Employer's portion of DAAB costs	
		[*To be entered by the Employer; Delete if not applicable:]* provisional sums for additional ES outcomes.	
etc.			
		Total for Specified Provisional Sums (carried forward to Grand Summary (B), p. ___)	

Grand Summary

Contract Name:

Contract No.:

General Summary	*Page*	*Amount*
Bill No. 1:		
Bill No. 2:		
Bill No. 3:		
—etc.— *Subtotal of Bills*	*(A)*	
*Total for Daywork (Provisional Sum)**	*(B)*	
Specified Provisional Sums not included in subtotal of bills[ii]	*(C)*	*[sum]*
Total of Bills Plus Provisional Sums (A + B + C) [i]	*(D)*	
Add Provisional Sum for Contingency Allowance (if any) [ii]	*(E)*	*[sum]*
Bid Price (D + E) (Carried forward to Letter of Tender)	*(F)*	

i) All Provisional Sums are to be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 13.4 and 13.5 of the General Conditions (refer: 2017 FIDIC Red Book).

ii) To be entered by the Employer.

* For evaluation purposes, Provisional Sum, other than Daywork will be excluded

Technical Proposal

- **Site Organization**
- **Method Statement**
- **Mobilization Schedule**
- **Construction Schedule**
- **Environmental and Social (ES) Management Strategies and Implementation Plans (ES – MSIP).**
- **Health and Safety (HS) Management Strategies and Implementation Plans (HS – MSIP)**
- **Code of Conduct for Contractor's Personnel (ES)**
- **Equipment**
- **Key Personnel Schedule**
- **Others**

Site Organization

[insert Site Organization information]

Method Statement

[insert Method Statement]

Mobilization Schedule

[insert Mobilization Schedule]

In accordance with the General Conditions, Sub-Clause 4.1 (refer: 2017 FIDIC Red Book), the Contractor shall not carry out mobilization to Site unless the Engineer gives consent that appropriate measures are in place to address environmental and social risks and impacts, which as a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor's Personnel, submitted as part of the Bid and agreed as part of the Contract.

Construction Schedule

[insert Construction Schedule]

The construction schedule shall include the following key milestones:

- *No-objection to the Contractor's MSIPs, which collectively form the C_ESMP, in accordance with the General Conditions of Contract Sub-Clause 4.1 (refer: 2017 FIDIC Red Book).*
- *Constitution of the DAAB*

ES Management Strategies and Implementation Plans

(ES-MSIP)

The Bidder shall submit comprehensive and concise Environmental and Social Management Strategies and Implementation Plans (ES-MSIP) as required by ITB. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the ES provisions of the contract including those as may be more fully described in the Works Requirements.

H&S Management Strategies and Implementation Plans

(HS-MSIP)

The Bidder shall submit comprehensive and concise Health and Safety Management Strategies and Implementation Plans (ES-MSIP) as required by ITT. These strategies and plans shall describe in detail the processes, actions and management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the H&S provisions of the contract including those as may be more fully described in the Works Requirements.

Code of Conduct for Contractor's Personnel (ES) Form

***Note to the Employer**:*

***The following minimum requirements shall not be modified**. The Employer may add additional requirements to address identified issues, informed by relevant environmental and social assessment.*

The types of issues identified could include risks associated with: labor influx, spread of communicable diseases, and Sexual Exploitation and Assault (SEA) etc.

Delete this Box prior to issuance of the bidding documents.

Note to the Bidder:

The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified. However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Bidder shall initial and submit the Code of Conduct form as part of its bid.

CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [*enter name of Contractor*]. We have signed a contract with [*enter name of Employer*] for [*enter description of the Works*]. These Works will be carried out at [*enter the Site and other locations where the Works will be carried out*]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation and assault and gender-based violence.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, labourers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "**Contractor's Personnel"** and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
    a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
    b. wearing required personal protective equipment;
    c. using appropriate measures relating to chemical, physical and biological substances and agents; and
    d. following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.
8. not engage in Sexual Assault, which means sexual activity with another person who does not consent. It is a violation of bodily integrity and sexual autonomy and is broader than narrower conceptions of "rape", especially because (a) it may be committed by other means than force or violence, and (b) it does not necessarily entail penetration;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation and Assault (SEA);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the [Project Grievance [Redress] Mechanism].

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or

2. Call [ ] to reach the Contractor's hotline *(if any)* and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.
There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person with relevant experience in handling gender-based violence*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Contractor:

Signature: _____

Date: (day month year): _____

Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Contractor's Representative and Key Personnel Schedule

Bidders should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Contractor' Representative and Key Personnel

1.	**Title of position:** Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
2.	**Title of position:** *[Environmental Specialist]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

3.	**Title of position:** *[Health and Safety Specialist]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
4.	**Title of position:** *[Social Specialist]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
5.	**Title of position: Gender Based Violence Expert** ***Where a Project SEA risks are assessed to be high, Key Personnel shall include a gender-based violence expert with relevant experience in addressing sexual exploitation and assault cases***	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

6.	**Title of position:** *[insert title]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

Resume and Declaration for Contractor's Representative and Key Personnel

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	**Name:**	**Date of birth:**
	Address:	**E-mail:**
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency:*[language and levels of speaking, reading and writing skills]*	
Details	**Address of employer:**	
	Telephone:	
	Fax:	**Contact (manager / personnel officer):**
	Job title:	

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

1. be taken into consideration during Bid evaluation;
2. result in my disqualification from participating in the Bid;
3. result in my dismissal from the contract.

Name of Contractor's Representative or **Key Personnel: [*insert name*]**

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Bidder:

Signature: _____

Date: (day month year): _____

Bidder's Qualification following Prequalification

The Bidder shall update the information given during the corresponding prequalification exercise to demonstrate that he continues to meet the criteria used at the time of prequalification regarding:

(a) Eligibility

(b) Pending Litigation

(c) Financial Situation

For this purpose, the Bidder shall use the relevant forms included in this Section.

Bidder Information Form

Date: _____
RFB No. and title: _____
Page _____of _____pages

Bidder's name
In case of Joint Venture (JV), name of each member:
Bidder's actual or intended country of registration: *[indicate country of Constitution]*
Bidder's actual or intended year of incorporation:
Bidder's legal address [in country of registration]:
Bidder's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB. ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB. ☐ In case of state-owned enterprise or institution, in accordance with ITB documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Bidder is not under the supervision of the Employer 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. *[If required under BDS ITB, the successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.]*

Bidder's JV Information Form

(to be completed for each member of Bidder's JV)

Date: _____
RFB No. and title: _____
Page _____ of _____ pages

Bidder's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Employer, in accordance with ITB. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. *[If required under BDS ITB, the successful Bidder shall provide additional information on beneficial ownership for each JV member using the Beneficial Ownership Disclosure Form.]*

Historical Contract Non-Performance, and Pending Litigation

[This form should be used only if the information submitted at the time of prequalification requires updating. The following table shall be filled in for the Bidder and for JVs, each member of the Joint Venture]

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Non-Performed Contracts in accordance with Evaluation and Qualification Criteria of the Prequalification document			
☐ Contract non-performance did not occur since 1st January *[insert year]* ☐ Contract(s) not performed since 1st January *[insert year]*			
Year	**Non-performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and US$ equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for nonperformance: *[indicate main reason(s)]*	*[insert amount]*

Pending Litigation, in accordance with Evaluation and Qualification Criteria			
☐ No pending litigation ☐ Pending litigation			
Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), USD Equivalent (exchange rate)**
		Contract Identification: _____ Name of Employer: _____ Address of Employer: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	

Environmental and Social Performance Declaration

[This form should be used only if the information submitted at the time of prequalification requires updating. The following table shall be filled in for the Bidder, each member of a Joint Venture and each Specialized Subcontractor]

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Environmental and Social Performance Declaration in accordance with Qualification Criteria, and Requirements of the Prequalification document			
☐ **No suspension or termination of contract**: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental and Social (ES) performance. ☐ **Declaration of suspension or termination of contract**: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental and Social (ES) performance. Details are described below:			
Year	**Suspended or terminated portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and US$ equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s) e.g. gender-based violence; sexual exploitation or assault breaches]*	*[insert amount]*

[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s)]*	*[insert amount]*
…	…	*[list all applicable contracts]*	…
Performance Security called by an employer(s) for reasons related to ES performance			
Year		Contract Identification	Total Contract Amount (current value, currency, exchange rate and US$ equivalent)
[insert year]		Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for calling of performance security: *[indicate main reason(s) e.g. gender-based violence; sexual exploitation or assault breaches]*	*[insert amount]*

Financial Situation and Performance

1. Bidder's Name: Date:

2. JV Member's Name_____

3. RFT No. and title: _____ Page __ _of__ __pages

4. Financial data

(This form should be used only if the information submitted at the time of prequalification requires updating)

Type of Financial information in (currency)	**Historic information for previous _____*years,*** **_____** **(amount in currency, currency, exchange rate, USD**				
	Year 1	Year 2	Year 3	Year4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

2. Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (US$ equivalent)
1		
2		
3		

1. Financial documents

The Bidder and its parties shall provide copies of financial statements to demonstrate that they continue to meet the financial requirements at the time of prequalification.

The financial statements shall:

(a) reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member).
(b) be independently audited or certified in accordance with local legislation.
(c) be complete, including all notes to the financial statements.
(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[8] for the _____years required above; and complying with the requirements

[8] If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified.

Average Annual Construction Turnover

(This form should be used only if the information submitted at the time of prequalification requires updating)

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

	Annual turnover data (construction only)		
Year	**Amount** **Currency**	**Exchange rate**	**USD equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover			

Current Contract Commitments / Works in Progress

Bidders and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Bidder's Name: **Date:**

JV Member's Name_____

RFT No. and title: _____ **Page __ _of__ __pages**

Current Contract Commitments					
No.	**Name of Contract**	**Employer's Contact Address, Tel, Fax**	**Value of Outstanding Work [Current US$ Equivalent]**	**Estimated Completion Date**	**Average Monthly Invoicing Over Last Six Months [US$/month)]**
1					
2					
3					
4					
5					

Form of Bid Security – Demand Guarantee

Bidder's Name:_____

Beneficiary: _____

Request for Bids No: _____

Date: _____

BID GUARANTEE No.: _____

Guarantor: _____

We have been informed that _____ (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of _____ under Request for Bids No. _____ ("the RFB").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Bid during the period of Bid validity set forth in the Applicant's Letter of Tender ("the Bid Validity Period"), or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance Security and, if required, the Environmental and Social (ES) Performance Security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's Bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, if required, the Environmental and Social (ES) Performance Security, issued to the Beneficiary in relation to such contract agreement; or (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii) twenty-eight days after the end of the Bid Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

_____

[signature(s)]

Form of Bid-Securing Declaration

Bidder's Name: Date:

JV Member's Name_____

RFT No. and title: _____ Page __ _of__ __pages

Bid No.: _____ Alternative No.: _____

To:

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for Bidding, or submitting Proposals in any contract with the Employer for the period of time of _____ starting on _____, if we are in breach of our obligation(s) under the Bid conditions, because we:

(a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Tender; or

(b) having been notified of the acceptance of our Bid by the Employer during the period of Bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security and, if required, the Environmental and Social (ES) Performance Security, in accordance with the ITB.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder*_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder**_____

Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]

Annex C – Documents to be used for Contract Award

1 NOTIFICATION OF INTENTION TO AWARD
2 LETTER OF ACCEPTANCE
3 CONTRACT AGREEMENT
4 PERFORMANCE SECURITY
5 ENVIRONMENTAL AND SOCIAL (ES) PERFORMANCE SECURITY
6 ES DEMAND GUARANTEE
7 ADVANCE PAYMENT SECURITY
8 RETENTION MONEY SECURITY

Notification of Intention to Award

[*This Notification of Intention to Award shall be sent to each Bidder that submitted a Bid.*]

[*Send this Notification to the Bidder's Authorized Representative named in the Bidder Information Form*]
For the attention of Bidder's Authorized Representative

Name: *[insert Authorized Representative's name]*

Address: *[insert Authorized Representative's Address]*

Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]*

Email Address: *[insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Bidders. The Notification must be sent to all Bidders simultaneously. This means on the same date and as close to the same time as possible.]

DATE OF TRANSMISSION: This Notification is sent by: [*email/fax*] on [*date*] (local time)

Notification of Intention to Award

Employer: *[insert the name of the Employer]*

Project: *[insert name of project]*

Contract title: *[insert the name of the contract]*

Country: *[insert country where RFB is issued]*

Request for Bid (RFB) No: *[insert RFB reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period you may:

a) request a debriefing in relation to the evaluation of your Bid and/or

b) submit a Procurement-related Complaint in relation to the decision to award the contract.

1. The successful Bidder

Name:	[*insert name of successful Bidder*]
Address:	[*insert address of the successful Bidder*]
Contract price:	[*insert contract price of the successful Bid*]

2. Other Bidders *[INSTRUCTIONS: insert names of all Bidders that submitted a Bid. If the Bid's price was evaluated include the evaluated price as well as the Bid price as read out.]*

Name of Bidder	Bid price	Evaluated Bid price (if applicable)
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]

3. Reason/s why your Bid was unsuccessful

[INSTRUCTIONS: State the reason/s why <u>this</u> Bidder's Bid was unsuccessful. Do NOT include: (a) a point by point comparison with another Bidder's Bid or (b) information that is marked confidential by the Bidder in its Bid.]

4. How to request a debriefing

DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (local time).

You may request a debriefing in relation to the results of the evaluation of your Bid. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Bidder, contact details; and address the request for debriefing as follows:

Attention: [*insert full name of person, if applicable*]

Title/position: [*insert title/position*]

Agency: [*insert name of Employer*]

Email address: [*insert email address*]

Fax number: [*insert fax number*] ***delete if not used***

If your request for a debriefing is received within the **three (3) Business Days** deadline, we will provide the debriefing within **five (5) Business Days** of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be **extended by five (5) Business Days** after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than **fifteen (15) Business Days** from the date of publication of the Contract Award Notice.

5. How to make a complaint

Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

Provide the contract name, reference number, name of the Bidder, contact details; and address the Procurement-related Complaint as follows:

Attention: [*insert full name of person, if applicable*]

Title/position: [*insert title/position*]

Agency: [*insert name of Employer*]

Email address: [*insert email address*]

Fax number: [*insert fax number*] ***delete if not used***

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Bidder who submitted a Bid in this bidding process, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the period stated above.
4. You must include, in your complaint, all of the information required by the Procurement Regulations.

6. Standstill Period

DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).

The Standstill Period lasts **ten (10) Business Days** after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended as stated in Section 4 above.

If you have any questions regarding this Notification please do not hesitate to contact us.

On behalf of the Employer:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

Email: _____

Letter of Acceptance

[letterhead paper of the Employer]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Bid dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our Agency.

You are requested to furnish (i) the Performance Security and an Environmental and Social Performance Security ***[Delete ES Performance Security if it is not required under the contract]*** within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Form*s* and the ES Performance Security Form, ***[Delete reference to the ES Performance Security Form if it is not required under the contract]*** and (ii) the additional information on beneficial ownership in accordance with ITB, within eight (8) Business days using the Beneficial Ownership Disclosure Form, included in Contract Forms, of the Bidding Documents.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the _____ day of _____, _____,

between _____of _____

(hereinafter “the Employer”), of the one part, and _____ of

_____ (hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as

_____ should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

(a) the Letter of Acceptance;

(b) the Letter of Tender;

(c) the addenda Nos _____(if any);

(d) the Particular Conditions;

(e) the General Conditions;

(f) the Specification;

(g) the Drawings; and

(h) the completed Schedules and any other documents forming part of the contract, including, but not limited to:

i. the ES Management Strategies and Implementation Plans; and

ii. the HS Management Strategies and Implementation Plans; and

iii. Code of Conduct for Contractor’s Personnel (ES).

3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year specified above.

Signed by _____ (for the Employer)

Signed by _____ (for the Contractor)

Appendix to the Contract Agreement:

Performance Security

Option 1: Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of* Employer*]*

Date: _ *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

---

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency(cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9 (refer: 2017 FIDIC Red Book). The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Performance Security

Option 2: Performance Bond

By this Bond_____ as Principal (hereinafter called "the Contractor") and_____] as Surety (hereinafter called "the Surety"), are held and firmly bound unto_____] as Obligee (hereinafter called "the Employer") in the amount of _____, for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Contractor has entered into a written Agreement with the Employer dated the _____ day of _____, 20 ____, for _____ in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Employer to be, in default under the Contract, the Employer having performed the Employer's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

(1) complete the Contract in accordance with its terms and conditions; or

(2) obtain a Bid or Bids from qualified Bidders for submission to the Employer for completing the Contract in accordance with its terms and conditions, and upon determination by the Employer and the Surety of the lowest responsive Bidder, arrange for a Contract between such Bidder and Employer and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Employer to Contractor under the Contract, less the amount properly paid by Employer to Contractor; or

(3) pay the Employer the amount required by Employer to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Employer named herein or the heirs, executors, administrators, successors, and assigns of the Employer.

In testimony whereof, the Contractor has hereunto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its legal representative, this _____ day of _____ 20 _____.

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

Environmental and Social (ES) Performance Security

ES Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of* Employer*]*

Date: _ *[Insert date of issue]*

ES PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its Environmental and Social (ES) obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

---

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency (cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9 (refer: 2017 FIDIC Red Book). The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Advance Payment Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Insert name and Address of* Employer*]*

Date: *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (_____) is to be made against an advance payment guarantee.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) [1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:

(a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or

(b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number _____ at _____.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.*

on the ___ day of _____, 2___,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

[2] *Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

Retention Money Security

Demand Guarantee

_____ *[Guarantor letterhead or SWIFT identifier code]*

Beneficiary: _____ *[Insert name and Address of* Employer*]*

Date: _____*[Insert date of issue]*

RETENTION MONEY GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, for the execution of _____ *[insert name of contract and brief description of* Works*]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of *[*insert the second half of the Retention Money *or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money,* the difference between half of the Retention Money and the amount guaranteed under the Performance Security and, if required the ES Performance Security*]* is to be made against a Retention Money guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ *[insert amount in figures]* (_____) *[amount in words]*[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Beneficiary.*

as referred to above has been credited to the Applicant on its account number _____ at _____ *[insert name and address of Applicant's bank]*.

This guarantee shall expire no later than the …. day of ……, 2… [2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

[2] *Insert the same expiry date as set forth in the Performance Security, representing the date twenty-eight days after the completion date described in GC Clause 11.9 (refer: 2017 FIDIC Red Book). The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*