Bidding Document

for

Deep Energy Retrofit of Six (6) Hospitals

Request for Bids (RFB) under International Competitive Bidding One-Stage
(without prior prequalification)

Issued: ***March 2023***

RFB No: 2.1.1/EU

Ministry of Science, Energy and Technology
Energy Management and Efficiency Programme

Country: Jamaica

General Table of Contents

Section I. Instructions to Bidders

Table of Instructions

Instructions to Bidders (ITB)

A. General

1. Scope of Bid

1.1 The Employer, as defined[3] **in "General Conditions of Contract" (GCC) and identified in Section II "Bidding Data Sheet" (BDS)**, invites bids for the construction of Works, as described in the **BDS** and Section VI, "Particular Conditions of Contract" (PCC). The name and identification number of the Contract are provided **in the BDS** and the PCC.

1.2 The selected Bidder shall design and complete the Works by the Completion Date Planed as provided **in the BDS** and in Sub-Clause 1.1 (r) of the PCC. If specified **in the BDS,** the design shall be delivered by the indicated date.

1.3 In this bidding document:

(a) The term "in writing" means a communication in writing (for example, mail, electronic mail, fax and even if it so specified in ITB 1.4, distributed, or received through the procurement electronic system used by the Employer), with proof of receipt.

(b) if the context so requires, "singular" means "plural" and vice versa.

(c) "day" means calendar day; and

(d) "ESHS" means environmental, social (including sexual exploitation and abuse (SEA) and gender-based violence (GBV)), health and safety.

1.4 If specified **in the BDS**, the Employer intents to use the electronic-procurement system indicated **in the BDS** to manage the aspects of this procurement process specified **in the BDS**.

2. Source of Funds

2.1 The Borrower, as defined **in the BDS,** intends to apply part of the funds of a loan from the Inter-American Development Bank (IDB) (hereinafter called "the Bank"), as defined **in the BDS,** in the amount as indicated **in the BDS** towards the cost of the Project, as defined **in the BDS,** to cover eligible expensive under the Contract for the Works.

2.2 Payments by the Bank shall be made only at the request of the Borrower and upon approval by the Bank in accordance with the Loan Contract and shall be subject in all respects to the terms and conditions of that Contract. Except as the Bank may specifically otherwise agree, no party other than the Borrower

shall derive any rights from the Loan Contract or have any rights to the loan proceeds.

3. Prohibited Practices

3.1 The Bank requires that all Borrowers (including grant beneficiaries), Executing Agencies and Contracting Agencies, including members of its personnel, as well as all firms, entities and individuals participating in a Bank-financed activity acting as, *inter alia*, bidders, proposers, suppliers, contractors, consultants, sub-contractors, sub-consultants, service providers and concessionaires (including their respective officers, employees and representatives or agents, irrespective of whether the agency is express or implied), adhere to the highest ethical standards, and report to the Bank[1] all suspected acts of Prohibited Practices of which they have knowledge or become aware both, during the bidding process and throughout the negotiation or execution of a contract. Prohibited Practices are: (i) corrupt practices; (ii) fraudulent practices; (iii) coercive practices; (iv) collusive practices; (v) obstructive practices; and (vi) misappropriation of funds. The Bank has established mechanisms to report allegations of Prohibited Practices. Any allegation shall be submitted to the Bank's Office of Institutional Integrity (OII) for the appropriate investigation. The Bank has adopted procedures to sanction those who have incurred in Prohibited Practices. The Bank also entered into an agreement with other International Financial Institutions (IFIs) to mutually recognize debarment decisions.

(a) For the purposes of this provision, the definitions of Prohibited Practices are as follows:

(i) "*corrupt practice*" is the offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

(ii) "*fraudulent practice*" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "*collusive practice*" is an arrangement between two or more parties designed to achieve an

[1] Information on how to present allegations of Prohibited Practices, the application of rules regarding investigation and sanctions process, and the agreement regulating the mutual recognition of sanctions among the IFI's are available on the Bank's web site (www.iadb.org/integrity)

improper purpose, including influencing improperly the actions of another party;

(iv) "*coercive practice*" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) "*obstructive practice*" is

(i) destroying, falsifying, altering or concealing of evidence material to an IDB Group investigation, or making false statements to investigators with the intent to impede an IDB Group investigation;

(ii) threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to an IDB Group investigation or from pursuing the investigation, or

(iii) acts intended to impede the exercise of the IDB Group's contractual rights of audit or inspection provided for under ITB 3.1(f) below or access to information; and

(iv) "*misappropriation*" is the use of IDB Group financing or resources for an improper or unauthorized purpose, committed either intentionally or through reckless disregard.

(b) If, the Bank determines that at any stage of the procurement or implementation of a contract the Borrower (including beneficiaries of grants), Executing Agencies, Contracting Agencies, any firm, entity or individual participating in a Bank-financed activity as, *inter alia*, bidders, proposers, suppliers, contractors, consultants, personnel, sub-contractors, sub-consultants, goods or service providers, concessionaires, (including their respective officers, employees and representatives or agents irrespective of whether the attribution is express or implied) engaged in a Prohibited Practice during the award or implementation of the contract, the Bank may:

(i) not finance any proposal to award a contract for works, goods or services, and consulting services;

(ii) suspend disbursement of the operation if it is determined at any stage that an employee, agent or representative of the Borrower, Executing Agency or Employer has engaged in a Prohibited Practice;

(iii) declare Misprocurement and cancel, and/or accelerate repayment of the portion of a loan or grant earmarked for a contract, when there is evidence that the representative of the Borrower, or Beneficiary of a grant, has not taken the adequate remedial measures (including, *inter alia*, providing adequate notice to the Bank upon learning of the Prohibited Practice) within a time period which the Bank considers reasonable;

(iv) issue the firm, entity or individual a reprimand in the form of a formal letter of censure for its behavior;

(v) declare that a firm, entity, or individual is ineligible, either permanently or for a stated period of time, to participate and/or be awarded additional contracts financed with IDB Group resources;

(vi) impose other sanctions that it deems to be appropriate, among others, the restitution of funds and of fines equivalent to the reimbursement for costs associated with investigations and proceedings contemplated in the Sanctions Procedures. Such other sanctions may be imposed in addition to or in lieu of the sanctions referred above (the "abovementioned" sanctions are reprimand and debarment/ineligibility);

(vii) extend the sanctions imposed on any individual, entity or firm that, directly or indirectly, owns or controls a sanctioned entity, is owned or controlled by a sanctioned entity or is the object of common ownership or control with a sanctioned entity, as well as to officials, employees, affiliates or representatives or agents of a sanctioned entity who also own a

sanctioned entity and / or exercise control over a sanctioned entity, even if it has not been concluded that those parties directly incurred in a Prohibited Practice; and/or

(viii) refer the matter to appropriate law enforcement authorities.

(c) The provisions of ITB 3.1 (b) (i) and (ii) shall also be applicable when such parties have been temporarily suspended from eligibility to be awarded additional contracts pending a final outcome of a sanction proceeding, or otherwise.

(d) The imposition of any action to be taken by the Bank pursuant to the provisions referred to above may be made public.

(e) Pursuant to the Agreement for Mutual Enforcement of Debarment Decisions entered into with other IFIs, any firm, entity or individual bidding for or participating in a Bank-financed activity or acting as bidders, proposers, suppliers, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers, concessionaires, personnel of the Borrower (including grant Beneficiaries), Executing Agencies or Contracting Agencies, (including their respective officers, employees, representatives and agents, irrespective of whether the attribution is expressed or implied) may be subject to a sanction. For purposes of this paragraph the term "sanction" shall mean any debarment, conditions on future contracting or any publicly disclosed action taken in response to a violation of an IFI's applicable framework for addressing allegations of Prohibited Practices.

(f) The Bank requires that all applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, officers or employees, sub-contractors, service providers and concessionaires permit the Bank to inspect accounts, records and other documents relating to the submission of bids and contract performance as well as to have them audited by personnel appointed by the Bank. Applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, sub-contractors, sub-consultants, service

providers and concessionaires shall fully assist the Bank with its investigation. The Bank also requires that all applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers and concessionaires: (i) maintain all documents and records related to the Bank-financed activities for seven (7) years after completion of the work contemplated in the relevant contract; (ii) deliver any document necessary for the investigation of allegations of Prohibited Practices; and (iii) ensure that employees, representatives or agents of the applicants, bidders, proposers, suppliers and their representatives or agents, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers or concessionaires who have knowledge that the Bank financed the activities to respond to questions from Bank personnel or any properly designated investigator, agent, auditor or consultant relating to the investigation. If the applicant, bidder, supplier and its representative or agent, contractor, consultant, personnel, sub-contractor, sub-consultant, service provider or concessionaire fails to cooperate and/or comply with the Bank's request, or otherwise obstructs the investigation, the Bank, discretionally, may take appropriate action against the applicant bidder, supplier and its agent or representative, contractor, consultant, personnel, sub-contractor, service provider or concessionaire.

(g) If the Borrower procures goods or services, works or consulting services directly from a specialized agency, all provisions regarding Prohibited Practices and to the correspondent sanctions shall apply in their entirety to applicants, bidders, proposers, suppliers and their representatives or agents, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers, and concessionaires, (including their respective officers, employees, and representatives or agents, irrespective of whether the agency is express or implied), or to any other entities that signed contracts with such specialized agency to supply such goods, works, or non-consulting services in connection with the Bank-financed activities. The Bank will retain the right to require the Borrower to invoke remedies such

as contract suspension or termination. Specialized agencies shall consult the Bank's list of suspended or debarred firms and individuals. In the event a specialized agency signs a contract or purchase order with a firm or an individual suspended or debarred by the Bank, the Bank will not finance the related expenditures and will apply other remedies as appropriate.

3.2 By submitting bids bidders and proposers represent and warrant:

(a) that they have read and understood the Bank's definition of Prohibited Practices and the applicable sanctions pursuant to the Sanctions Procedures;

(b) that they have not engaged in any Prohibited Practice as set forth herein during the selection, negotiation, adjudication or execution of this contract;

(c) that they have not misrepresented or concealed any material facts during the procurement or contract negotiation processes or during the performance of the contract;

(d) that neither they nor their representatives or agents, sub-contractors, sub-consultants, directors, key personnel or principal shareholders have been declared ineligible to be awarded a contract by the Bank

(e) that all commissions, representative or agents' fees, facilitating payments or revenue-sharing agreements related to the Bank-financed activities have been disclosed; and

(f) that they acknowledge that the breach of any of these representations may constitute a basis for the adoption by the Bank of one or more of the measures set forth in ITB 3.1 (b).

4. Eligible Bidders

4.1 A Bidder, and all parties constituting the Bidder, shall be nationals from member countries of the Bank. Bidders from other countries shall be disqualified from participating in contracts intended to be financed in whole or in part from Bank loans. Section III, "Eligible Countries" of this document establishes the Bank's member countries, as well as the criteria to determine the nationality of the Bidders and the country of origin of goods and services. The Bidders with the nationality of a Bank's member

country and the goods to be supplied under the Contract are not eligible:

(a) if as a matter of law or official regulation, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods and works required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any imports of goods from that country or any payments to persons or entities in that country

4.2 A bidder shall not have a conflict of interest. All bidders found to have conflict of interest shall be disqualified. Bidders may be considered to have a conflict of interest with one or more parties in this bidding process, if they:

(a) directly or indirectly controls[2] another Bidder, is controlled directly or indirectly by another Bidder, or is controlled together with another Bidder by a natural or legal entity in common; or

(b) receives or has received any direct or indirect subsidy from another Bidder for the purpose of this bidding process; or

(c) has the same legal representative as another Bidder for the purpose of this bidding process; or

(d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or

(e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

[2] Control means the power to, directly or indirectly, direct or cause the direction of the management and policies of the companies or projects, whether through the ownership of voting shares, by contract or otherwise. It could include majority ownership of voting shares, other control mechanisms (such as "golden shares", veto rights or shareholders' agreements requesting special majorities) or, in the case of investment fund financing, the control exercised by a general partner or fund manager. Control will be determined in the context of each specific case.

(f) or any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager for the Contract implementation;

(g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS in reference to ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm;

(h) has a close[3] family or financial relationship or past or future employment with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the contract.

4.3 A Bidder, parent company, subsidiary, or previous form of organization constituted by or with any. of the same individual(s) as principal(s), declared ineligible to be awarded a contract by the Bank or by another International Financial Institution (IFI) with which the Bank may have entered into an agreement for the mutual enforcement of sanctions, and is that is under a declaration of ineligibility during the period of time established by the Bank in accordance with ITB 3, at the date of contract award, shall be disqualified. The list of such ineligible firms and individuals is indicated **in the BDS.**

4.4 A firm that is a Bidder (either individually or as a JVCA member) shall not participate as a Bidder or as JVCA member in more than one Bid except for permitted alternative Bids. Such participation shall result in the disqualification of all Bids in which the firm is involved A firm that is not a Bidder or a JVCA member may participate as a subcontractor in more than one Bid. Unless

[3] A close relationship should be understood as being related up to the fourth degree of relationship by blood (consanguinity) or by adoption, or up to the second degree of relationship by marriage or domestic partnership (affinity).

specified **in the BDS**, there is no limit on the number of members in a JVCA.

4.5 Government-owned enterprises in the Employer's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Borrower.

4.6 A Bidder shall not be under suspension from bidding by the Employer as a result of non-compliance with a Bid-Securing Declaration.

4.7 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

5. Qualifications of the Bidder

5.1 In accordance with Section IV, "Bidding Forms" all Bidders shall submit a description of the design methodology, work program, and the preliminary schedules planned, including drawing and graphics as necessary and possible based on the level of details of the information provided by the Employer and the Contractor's designer experience.

5.2 In the event that prequalification of potential bidders has been undertaken, only bids from prequalified bidders shall be considered for award of Contract. These qualified bidders should submit with their bids any information updating their original prequalification applications or, alternatively, confirm in their bids that the originally submitted prequalification information remains essentially correct as of the date of bid submission. The update or confirmation should be provided in Section IV, “Bidding Forms.”

5.3 If the Employer has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their bids in Section IV, “Bidding Forms” unless otherwise stated in the **BDS**:

(a) copies of original documents defining the constitution or incorporation, and principal place of business of the Bidder; written power of attorney of the signatory of the Bid to commit the Bidder;

(b) total monetary value of construction works performed for each of the last five (5) years;

(c) experience in works of a similar nature and size for each of the last five (5) years, and details of work under way or

contractually committed; and clients who may be contacted for further information on those contracts;

(d) major items of construction equipment proposed to carry out the Contract;

(e) qualifications and experience of key technical personnel for the design, construction, technical supervision and quality control of the Works and also for the administrative personnel proposed to work at the Projects site;

(f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five (5) years;

(g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);

(h) authorization to seek references from the Bidder's bankers;

(i) information regarding any litigation, current or during the last five (5) years, in which the Bidder was/is involved, the parties concerned, and the disputed amounts; and awards;

(j) proposals for subcontracting components such as the design or parts of the Works amounting to more than ten (10) percent of the Contract Price. The ceiling for subcontractor's participation is stated **in the BDS.**

5.4 Bids submitted by a Joint venture, Consortium or Association ("JVCA") of two or more firms as partners shall comply with the following requirements, unless otherwise stated **in the BDS**:

(a) the Bid shall include all the information listed in ITB 5.3 above for each JVCA partner;

(b) the Bid shall be signed so as to be legally binding on all partners;

(c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;

(d) one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the JVCA; and

(e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

(f) a copy of the JVCA Agreement entered into by the partners shall be submitted with the bid; or a Letter of Intent to execute a JVCA agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed Agreement. The Agreement of the Letter shall specify the percentage participation of each member.

5.5 To qualify for award of the Contract, bidders shall meet the following minimum qualifying criteria

(a) an average annual billing of construction work over the period specified in the **BDS** of at least the multiple indicated in the **BDS**.

(b) demonstrate experience in the design of works of at least the number of works indicated **in the BDS**, whose nature, amount, and complexity are equivalent to those of the tendered works;

(c) experience as prime contractor in the construction of at least the number of works of a nature and complexity equivalent to the Works over the period **specified in the BDS** (to comply with this requirement, works cited should be at least seventy (70) percent complete);

(d) show that it can ensure the timely availability (own, lease, hire, etc.) of the essential equipment **listed in the BDS**;

(e) have a Project Administrator with at least five years' experience in projects of a nature and volume equivalent to the bidding Works, of which at least three years have to be as Projects Administrator/Manager;

(f) have on a team of engineers to carry out technical supervision, design and projects quality control; and

(g) have liquid assets and/or credit availability free of another contract commitments and excluding any

advance that may have been received under the Contract, for an amount exceeding the sum indicated in the **BDS.**

A history of consistent lawsuits or arbitration awards against the Bidder or any one of the members of an JVCA may be grounds for disqualification.

5.6 The figures for each of the partners of a JVCA shall be added together to determine the Bidder's compliance with the minimum qualifying criteria of ITB 5.5 (a) and (e); however, for a JVCA to qualify, each of its partners must meet at least twenty-five (25%) percent of minimum criteria of ITB 5.5 (a), (b), and (e) for an individual Bidder, and the partner in charge at least forty (40%) percent of those minimum criteria. Failure to comply with this requirement shall result in rejection of the JVCA's Bid.

5.7 To determine Bidders conformity with the qualifying criteria the sub-contractors experience or resources shall not be taken into account, except otherwise indicated in **the BDS.** For works design, the designer may be a specialized Sub-contractor, in which case, the designers specific experience shall be added to those of the Bidder for purposes of ITB 5.5 (b).

6. One Bid per Bidder

6.1 Each Bidder shall submit only one Bid, either individually or as a partner in a JVCA. A Bidder who submits or participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) shall cause all the proposals with the Bidder's participation to be rejected.

7. Cost of Bidding

7.1 Bidders shall be responsible for all expenses associated with the bid preparation including for basic additional studies, preliminary designs and necessary calculations to submit their bids and the Employer shall have no responsibility or obligation of these costs at any time.

8. Site Visit

8.1 The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

8.2 According to Clause 12.3 of the GCC, basic data and information delivered by the Employer in this bidding document, which the Employer has not declared to be truthful and sufficient, must be verified by Bidders and at a later date, during the projects

design, modified or not by the Contractor, at his/her discretion or not, to meet the requirements of Section VII. "Specifications and Performance Conditions" and attain its purposes. Except for information regarding the Projects land titleship, the Employer is not responsible for the veracity and sufficiency of the data; consequently, this information is a risk for Bidders and then the for the selected Contractor.

B. Bidding Document

9. Contents of Bidding Document

9.1 The set of bidding document comprises the documents listed in the table below and addenda issued in accordance with ITB 11:

Section I. Instructions to Bidders (ITB)
Section II. Bidding Data Sheet (BDS)
Section III. Eligible Countries
Section IV. Bidding Forms
Section V. General Contract Conditions (GCC)
Section VI. Particular Contract Conditions (PCC)
Section VII. Specifications & Performance Requirement
Section VIII. Drawings
Section IX. List of Activities and Sub-Activities
Section X. Forms of Contract

10. Clarification of Bidding Document

10.1 A prospective Bidder requiring any clarification of the bidding document may notify the Employer in writing at the Employers' address indicated **in the BDS.** The Employer shall respond to any request for clarification received earlier than 21 days prior to the deadline for submission of bids. Copies of the Employer's response shall be forwarded to all purchasers of the bidding document, including a description of the inquiry, but without identifying its source.

11. Amendment of Bidding Document

11.1 Before the deadline for submission of bids, the Employer may modify the bidding document by issuing addenda.

11.2 Any addendum thus issued shall be part of the bidding document and shall be communicated in writing to all purchasers of the bidding document. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.

11.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the

Employer shall extend, as necessary, the deadline for submission of bids, in accordance with ITB 21.2 below.

C. Preparation of Bids

12. Language of Bid

12.1 All documents relating to the Bid shall be in the language **specified in the BDS.**

13. Documents Comprising the Bid

13.1 The Bid submitted by the Bidder shall comprise the following:

(a) The Contractor's Bid (in the format indicated in Section IV, "Bidding Forms");

(b) Bid Security, or Bid Validity Declaration, in accordance with ITB 17, if required.

(c) The List of Activities valued (that is, with prices shown);

(d) Qualification Information Form and Documents.

(e) Alternative offers where invited; and

(f) any other requested materials to Bidders to complete and submit, as specified **in the BDS.**

14. Bid Prices

14.1 The Contract shall include the design and build under "a sole responsibility" framework during the entire Project specified in ITB 1.1, based on the List of Activities established by the Employer, accepted or extended and valued by the Bidder.

14.2 The Bidder shall indicate prices for all Works line items according to List of Activities. The Employer shall not make payments for sub-activities or items implemented for the Bidder did not indicate prices, and therefore, shall be considered in other sub-activities within the List of Activities, valued in relation to the sole responsibility lump sum contract for design and build of this bidding. If there are corrections, these shall be done by crossing out, signing and dating the incorrect prices and rewriting them correctly in the corresponding Form.

14.3 All duties, taxes, and other levies payable by the Employer under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates, the unit prices, and total Bid price submitted by the Bidder

14.4 The global price quoted by the Bidder shall be subject to adjustments during the Contract implementation if it so established in the BDS**, in the PCC** and in the stipulations

seen in Clause 47 of the GCC. Along the Bid, the Bidder shall provide all the information required in the Special Contract Conditions and in the Clause 47 of the GCC.

15. Currencies of Bid and Payment

15.1 The global price shall be quoted by the Bidder entirely in the currency of the Employer's country – as per specifications in the **BDS.** Payment requirements in foreign currency shall be indicated as percentages of the Bid price (excluding the temporary quantities[4]) and shall be payable in up to three foreign currencies selected by the Bidder.

15.2 The rates of exchange to be used by the Bidder in arriving at the local currency equivalent and the percentages mentioned in ITB 15.1 above shall be the selling rates for similar transactions established by the source specified **in the BDS** prevailing on the date 28 days prior to the latest deadline for submission of bids. These exchange rates shall apply for all payments so that no exchange risk shall be borne by the Bidder. If the Bidder uses other rates of exchange, the provisions of ITB 29.1 shall apply; in any case, payments shall be computed using the rates quoted in the Bid.

15.3 Bidders shall indicate details of their expected foreign currency requirements in the Bid.

15.4 Bidders may be required by the Employer to clarify their foreign currency requirements and to substantiate that the quantities included in the rates and prices, if required **in the BDS,** are reasonable and responsive to ITB 15.1.

16. Bid Validity

16.1 Bids shall remain valid for the period specified **in the BDS**.

16.2 In exceptional circumstances, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing. If a Bid Security is requested in accordance with ITB 17, it shall be extended up to 28 days after the deadline of the extended bid validity period. A Bidder may refuse the request without forfeiting the Bid Security or execution of its Bid Validity Declaration. A Bidder agreeing to the request shall not be required or permitted to modify its Bid, except as provided in ITB 17.

16.3 In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), if the period of bid validity is extended beyond 56 days, the quantities payable in local and

[4] Provisional sums are monetary sums specified by the Employer in the List of Activities to be used at their discretion for specific purposes.

foreign currency to the Bidder selected for award, shall be adjusted as specified in the request for extension. Bid evaluation shall be based on the Bid Price without taking the above correction into consideration.

17. Bid Security and Bid Validity

17.1 If required **in the BDS,** the Bidder shall furnish as part of its Bid, a Bid Security or a Bid-Securing Declaration in original form as specified **in the BDS.**

17.2 The Bid Security shall be in the amount specified **in BDS** and denominated in the currency of the Employer's country or the currency of the Bid or in another freely convertible currency, and shall:

(a) at the bidder's option, be in the form of either a letter of credit, or a bank guarantee from a banking institution, or a bond or surety issued by an insurance or bonding institution.

(b) be issued by a reputable institution selected by the bidder and located in any country. If the institution issuing the bond or surety is located outside the Employer's Country, it shall have a correspondent financial institution located in the Employer's Country to make it enforceable;

(c) be substantially in accordance with one of the forms of Bid Security included in Section X, "Contract Forms," or other form approved by the Employer prior to bid submission.

(d) be payable promptly upon written demand by the Employer in case the conditions listed in ITB 17.5 are invoked;

(e) be submitted in its original form (copies shall not be accepted);

(f) remain valid for a period of 28 days beyond the validity period of the bids, as extended, if applicable, in accordance with ITB 16.2.

17.3 If a Bid Security or a Bid-Securing Declaration is required in accordance with ITB 17.1, any bid not accompanied by a substantially responsive Bid Security or Bid-Securing Declaration in accordance with ITB 17.1, shall be rejected by the Employer as non-responsive.

17.4 The Bid Security or the Bid-Securing Declaration of unsuccessful Bidders shall be returned as promptly as possible

upon the successful Bidder's furnishing of the performance security.

17.5 The Bid Security may be forfeited, or the Bid-Securing Declaration executed:

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Sheet, except as provided in ITB 16.2; or

(b) if the Bidder does not accept the correction of its Bid Price pursuant to ITB 28;

(c) if the successful Bidder fails within the specified time to:

(i) signing the Contract; or

(ii) furnish the required performance security.

17.6 The Bid Security or Bid-Securing Declaration of a JVCA must be in the name of the JVCA that submits the bid. If the JVCA has not been legally constituted at the time of bidding, the Bid Security or Bid-Securing Declaration shall be in the names of all future partners as named in the letter of intent.

18. Alternative Proposals by Bidders

18.1 Alternatives shall not be considered, unless specifically allowed **in the BDS.** If so allowed, ITB 18.1 and 18.2 shall govern, and **in the BDS** shall specify which of the following options shall be allowed:

(a) Option One. A bidder may submit alternative bids with the base bid and the Employer shall only consider the alternative bids offered by the Bidder whose bid for the base case was determined to be the lowest-price evaluated bid, or

(b) Option Two. A bidder may submit an alternative bid with or without a bid for the base case. All bids received, for the base case, as well as alternative bids meeting the technical specifications and performance requirements pursuant to Section VII, shall be evaluated on their own merits.

18.2 All alternative Offers shall provide the necessary information for their complete evaluation by the Employer. including preliminary design calculations, alternative technical alternatives, graphs and frameworks, possible construction methods and preliminary proposed schedules and other

relevant details according to ITB 5.1 and the Section IV "Bidding Forms."

19. Format and Signing of Bid

19.1 The Bidder shall prepare one original of the documents comprising the Bid as described in ITB 13, bound with the volume containing the Form of Bid, and clearly marked "ORIGINAL." In addition, the Bidder shall submit copies of the Bid, in the number specified **in the BDS,** and clearly marked as "COPIES." In the event of discrepancy between them, the original shall prevail.

19.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder, pursuant to ITB 5.3 (a). All pages of the Bid where entries or amendments have been made shall be initialed by the person or persons signing the Bid.

19.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

19.4 The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.

D. Submission of Bids

20. Submission, Sealing and Marking of Bids

20.1 Bidders may always submit their bids by mail or by hand. When so specified **in the BDS,** bidders shall have the option of submitting their bids electronically. Bidders submitting bids electronically shall follow the procedures specified **in the BDS.** In the case of Bids submitted by mail or by hand the Bidder shall seal the original and all copies of the Bid in two inner envelopes, duly marking them as "ORIGINAL" and "COPIES", respectively, and shall seal the two inner envelopes into an outer envelope

20.2 The inner and outer envelopes shall:

(a) be addressed to the Employer at the address provided in the **BDS;**

(b) bear the name and identification number of the Contract as defined **in the BDS** and PCC; and

(c) include a warning note as indicated in the **BDS** to avoid opening the Bid before the time and date for the opening of Bids as outlined in the **BDS.**

20.3 In addition to the identification required in ITB 20.2, the inner envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared late, pursuant to ITB 22.

20.4 If the outer envelope is not sealed and marked as above, the Employer shall assume no responsibility for the misplacement or premature opening of the Bid.

21. Deadline for Submission of Bids

21.1 Bids shall be delivered to the Employer at the address specified in ITB 20.2 (a) no later than the time and date specified **in the BDS.**

21.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with ITB 11, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline shall then be subject to the new deadline.

22. Late Bids

22.1 Any Bid received by the Employer after the deadline prescribed in ITB 21 shall be returned unopened to the Bidder.

23. Withdrawal, Substitution and Modification of Bids

23.1 Bidders may withdraw, substitute or modify their Bids by giving notice in writing before the deadline prescribed in ITB 21.

23.2 A Each Bidder's withdrawal, substitution or modification notice shall be prepared, sealed, marked, and delivered in accordance with ITB 19 and 20, with the outer and inner envelopes additionally marked "WITHDRAWAL", SUBSTITUTION", or "MODIFICATION" as appropriate.

23.3 Notices for withdrawal, substitution or modification of bids shall be delivered to the Employers at the address specified in ITB 20.2 (a) no later than the time and date specified **in ITB 21.1 of the BDS.**

23.4 Withdrawal of a Bid between the deadline for submission of bids and the expiration of the period of Bid validity specified **in the BDS ITB 16.1** or as extended pursuant to ITB 16.2 may

result in the forfeiture of the Bid Security or execution of the Bid-Securing Declaration pursuant to ITB 17

23.5 Bidders may only offer discounts to, or otherwise modify the prices of their bids, by submitting Bid modifications in accordance with this clause or including them in the initial Bid.

E. Bid Opening and Evaluation

24. Bid Opening

24.1 The Employer shall open the bids in public, and the withdrawal, substitution and modification notices made pursuant to Clause 23, in the presence of the bidders' representatives who choose to attend at the time, date and in the place specified **in the BDS.** Any specific opening procedures required if electronic bidding is permitted in accordance with ITB 20.1, shall be as specified in the BDS.

24.2 Envelopes marked "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to ITB 23 shall not be opened.

24.3 The bidders' names, the Bid prices, the total amount of each Bid and of any alternative Bid (if alternatives have been requested or permitted), any discounts, Bid withdrawals, substitutions, or modifications notices, the presence or absence of Bid Security or Bid-Securing Declaration, if required, and such other details as the Employer may consider appropriate, shall be read aloud (and posted online when electronic bidding is used) by the Employer at the opening, and recorded when opened. No bid or notice shall be rejected at bid opening except for the late bids and notices pursuant to ITB 22. Substitution Bids and modifications submitted pursuant to ITB 23 that are not opened and read out at bid opening shall not be considered for further evaluation regardless of the circumstances. Late, withdrawn and substituted bids and notices shall be returned un-opened to bidders

24.4 The Employer shall prepare Minutes of the Bid Opening, including the record of readout bids and the information disclosed to those present, in accordance with ITB 24.3 and promptly send copy of such minutes to all bidders who submitted bids in time.

25. Confidentiality

25.1 Information relating to the Examination, Clarification, Evaluation, and Comparison of Bids and Recommendations

for the Award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the Notification of Intention to Award is transmitted to all Bidders in accordance to ITB 36. Any effort by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of its Bid. Notwithstanding the above, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it should do so in writing.

26. Clarification of Bids

26.1 To assist in the examination, evaluation, and comparison of Bids, the Employer may, at the Employer's discretion, ask any Bidder for clarification of the Bidder's Bid, including breakdowns of the list of activities. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with ITB 28

27. Determination of Responsiveness

27.1 Prior to the detailed evaluation of Bids, the Employer shall determine whether each Bid:

(a) complies with the eligibility requirements included in ITB 4;

(b) has been duly signed;

(c) is accompanied by the Bid Security or the Bid -Securing Declaration, if required;

(d) is substantially responsive to the requirements of the bidding document; and

(e) The drawings, diagrams, sketches, schemes, calculations and the technical proposal substantially adjust to Section VII "Specifications and Performance Requirements."

27.2 A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the bidding document, without material deviation or reservation. A material deviation or reservation is one:

(a) which affects in any substantial way the scope, quality, or performance of the Works;

(b) which limits in any substantial way, inconsistent with the bidding document, the Employer's rights or the Bidder's obligations under the Contract; or

(c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

27.3 If a Bid is not substantially responsive, it shall be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation

28. Correction of Errors

28.1 The Employer shall verify whether the offers which substantially comply with requirements of the bidding document contain arithmetic mistakes. These errors shall be corrected by the Employer in this manner: whenever there is a discrepancy between the quantities indicated in numbers and in words, words shall prevail.

28.2 In the evaluation of the Financial part of each Bid, the Employer shall correct the arithmetic errors in the following manner:

(a) List of Sub-Activity with prices: if there are errors between the total of quantities in the column for Sub-Activity price and the amount shown in the total for the Sub-activity, the first one shall prevail and consequently, the latter corrected;

(b) List of Activity with prices: if there are errors between the total of the quantities shown in the price column for the Activity Price and the amount shown in the total price of the activities, the first one shall prevail and the latter corrected as a result; and when there is an error between the total of the quantities in the List of Sub-activity with prices and the corresponding amount in the Schedule of Activities with prices, the first one shall prevail and the second shall be corrected as a result; and

(c) Global Summary: in case of errors between the total price of the activities in the calendar with prices and the amount indicated in the Global Summary, the first shall prevail and the latter corrected as a result.

28.3 The amount stated in the Bid shall be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid shall be rejected, and the Bid Security may be forfeited or the Bid-

Securing Declaration executed in accordance with ITB 17.5 (b).

29. Currency for Bid Evaluation

29.1 Bids shall be evaluated as quoted in the currency of the Employer's Country in accordance with ITB 15.1, unless a Bidder has used different exchange rates than those prescribed in ITB 15.2, in which case the Bid shall be first converted into the quantities payable in different currencies using the rates quoted in the Bid and then reconverted to the currency of the Employer's country using the exchange rates prescribed in ITB 15.2.

30. Evaluation and Comparison of Bids

30.1 The Employer shall evaluate and compare only the bids determined to be substantially responsive in accordance with ITB 27.

30.2 In evaluating the bids, the Employer shall determine for each Bid the evaluated Bid price by adjusting the Bid price as follows:

(a) making any correction for errors pursuant to ITB 28;

(b) excluding provisional sums and the provision, if any, for contingencies in the List of Activities but including Daywork, where priced competitively;

(c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with ITB 18;

(d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with ITB 23.5; and

(e) using the method Best and Final Offer (BAFO) if specified in BDS in reference to ITB 33.1.

30.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the bidding document or otherwise result in unsolicited benefits for the Employer shall not be taken into account in the Bid evaluation.

30.4 The estimated effect of any price adjustment conditions under GCC Clause 47, during the period of implementation of the Contract, shall not be taken into account in Bid evaluation.

30.5 In case of several lots, according to ITB 30.2 (d), the Employer shall determine if the discounts apply in order to minimize the combined costs of all lots.

31. Domestic Preference

31.1 A margin of preference shall not apply to compare the bids of national and foreign bidders.

32. Abnormally Low Bids

32.1 An Abnormally Low Bid is one where the Bid price, in combination with other constituent elements of the Bid, appears unreasonably low to the extent that the Bid price raises material concerns as to the capability of the Bidder to perform the Contract for the offered Bid price.

32.2 In the event of identification of a potentially Abnormally Low Bid, the Employer shall seek written clarifications from the Bidder, including detailed price analyses of its Bid price in correlation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the bidding document.

32.3 After evaluation of the price analyses, in the event that the Employer determines that the Bidder has failed to demonstrate its capability to deliver the contract for the offered tender price, the Employer shall reject the Bid.

33. Best and Final Offer or Negotiations

33.1 If so specified **in the BDS** the Employer will use the Best and Final Offer method, the Bidders who submitted bids substantially responsive to the requirements will be invited to present their Best and Final Offer in accordance with ITB 33.3 to ITB 33.6 reducing prices, clarifying or modifying the bid or providing additional information, as appropriate.

33.2 If so specified **in the BDS** the Employer will use Negotiations after evaluation of bids and before final award of Contract, the Bidder who submitted the Most Advantageous Bid will be invited to Negotiations in accordance with ITB 37.2 and following instructions.

33.3 Bidders are not required to submit a Best and Final Offer. There shall be no Negotiations after Best and Final Offer.

33.4 To observe and report on the application of the Best and Final Offer, the Employer may, and in the case of Negotiations shall, appoint the Independent Probity Assurance Authority indicated **in the BDS.**

33.5 The Employer shall specify **in the BDS** a new deadline and details for the submission of the Best and Final Offer or to initiate Negotiations. Instructions in ITB 20 to ITB 26 shall apply to the presentation, opening and clarifications of the Best and Final Offer of the Bidders.

33.6 On receipt of the Best and Final Offer from each Bidder, the Employer shall proceed with the evaluation and comparison of the bids again in accordance with ITB 27 to ITB 32 and then shall proceed with ITB 34 and following instructions.

34. Employer's Right to Accept any Bid and to Reject any or all Bids

34.1 The Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

35. Standstill Period

35.1 The Contract shall not be awarded earlier than the expiry of the Standstill Period. The Standstill Period shall be ten (10) Business Days unless extended in accordance with ITB 40. The Standstill Period commences when the Employer has transmitted to each Bidder the Notification of Intention to Award the Contract. Where only one Bid is submitted, or if this contract is in response to an emergency situation recognized by the Bank, the Standstill Period shall not apply.

36. Notification of Intention to Award

36.1 The Employer shall send to each Bidder the Notification of Intention to Award the Contract to the successful Bidder. The Notification of Intention to Award shall contain, at a minimum, the following information:

(a) the name and address of the Bidder submitting the successful Bid;

(b) the Contract price of the successful Bid;

(c) the names of all Bidders who submitted Bids, and their Bid prices as readout, and as evaluated;

(d) a statement of the reason(s) the Bid (of the unsuccessful Bidder to whom the notification is addressed) was unsuccessful, unless the price information in c) above already reveals the reason;

(e) if the method of Best and Final Offer was used in the evaluation of bids;

(f) the expiry date of the Standstill Period; and

(g) instructions on how to request a debriefing and/or submit a complaint during the standstill period.

F. Award of Contract

37. Award Criteria

37.1 Subject to ITB 34, the Employer shall award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding document requirements (including the resources assigned to the design implementation, the works and the quality assurance) and that represents the lowest evaluated cost, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of ITB 4, and (b) qualified in accordance with the provisions of ITB 5.

37.2 If the Employer has not used the Best and Final Offer method in the bid evaluation and if in the BDS in reference to ITB 33.2 it is specified that the Employer will use Negotiations with the Bidder with the Most Advantageous Bid, the selected Bidder shall be invited to Negotiations before the final adjudication of the Contract. The Negotiations will be performed in the presence of the Independent Probity Assurance Authority established in the BDS in reference to ITB 33.4.

37.3 Once the Employer has determined the Bidder with the Most Advantageous Bid, the Employer shall promptly notify the selected Bidder the terms to initiate Negotiations in accordance with BDS in reference to ITB 33.5. Negotiations may include terms and conditions, price or social, environmental, innovative and cybersecurity aspects, provided that the minimum requirements of the bid are not modified.

37.4 The Employer will first negotiate with the Bidder that has submitted the Most Advantageous Bid. If the result is not satisfactory or an agreement is not reached, the Employer will notify the Bidder that the Negotiations concluded without agreement and may then notify the Bidder with the following Most Advantageous Bid on the list, and so on until a satisfactory result is achieved.

38. Notification of Award

38.1 Prior to the expiration of the Bid Validity Period and upon expiry of the Standstill Period or any extension thereof, and upon satisfactorily addressing any complaint that has been filed within the Standstill Period, the Employer shall notify

the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Supplier in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

38.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

(a) name and address of the Employer;

(b) name and reference number of the contract being awarded, and the selection method used;

(c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;

(d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor.

(e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope;

(f) if Negotiations were used in the final award; and

(g) successful Bidder's Beneficial Ownership Disclosure Form, if specified in BDS in reference to ITB 41.1.

38.3 The Contract Award Notice shall be published on the Employer's website with free access if available, or in at least one newspaper of national circulation in the Employer's Country, or in the official gazette. The Employer shall also publish the contract award notice in UNDB online.

38.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

39. Debriefing by the Employer

39.1 On receipt of the Employer's Notification of Intention to Award referred to in ITB 37.1, an unsuccessful Bidder has three (3) Business Days to make a written request to the Employer for a debriefing on the reasons why its Bid was not selected. The Employer shall provide a debriefing to all unsuccessful Bidders whose request is received within this deadline.

39.2 Where a request for debriefing is received within the deadline, the Employer shall provide a debriefing within five (5) Business Days, unless the Employer decides, for justifiable reasons, to provide the debriefing outside this timeframe. In that case, the standstill period shall automatically be extended until five (5) Business Days after such debriefing is provided. If more than one debriefing is so delayed, the standstill period shall not end earlier than five (5) Business Days after the last debriefing takes place. The Employer shall promptly inform, by the quickest means available, all Bidders of the extended standstill period.

39.3 Where a request for debriefing is received by the Employer later than the three (3)-Business Day deadline, the Employer should provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of Public Notice of Award of contract. Requests for debriefing received outside the three (3)-day deadline shall not lead to extension of the standstill period.

39.4 Debriefing of unsuccessful Bidders may be done in writing or through an information meeting, or both, at the option of the Employer. The Bidders shall bear their own costs of attending such a meeting.

40. Signing of Contract

40.1 The Employer shall send to the successful Bidder the Letter of Acceptance including the Contract Agreement, and, if specified **in the BDS**, a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form, if so requested, shall be submitted within eight (8) Business Days of receiving this request.

40.2 The successful Bidder shall sign, date and return to the Employer, the Contract Agreement within twenty-one (21) days of its receipt.

41. Performance Security

41.1 Within 21 days after receipt of the Letter of Acceptance, the successful Bidder shall sign the contract and deliver to the Employer a Performance Security in the amount stipulated in

the GCC and in the form (Bank Guarantee or Bond) stipulated **in the BDS,** denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the GCC.

41.2 If the Performance Security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued at the Bidder's option, by a bank located in the country of the Employer, or by a foreign bank acceptable to the Employer through a correspondent bank located in the Employer's country.

41.3 If the Performance Security is to be provided by the successful Bidder in the form of a Bond, it shall be issued by a surety which the Bidder has determined to be acceptable to the Employer.

41.4 Failure of the successful Bidder to comply with the requirements of ITB 36.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security or execution of the Bid-Securing Declaration. Upon the successful Bidder's, signing of the Agreement and furnishing of the Performance Security pursuant to ITB 35.1, the Employer shall promptly notify the name of the winning bidder to each unsuccessful bidder and shall discharge the Bid Securities of the unsuccessful bidders pursuant to ITB 17.4.

42. Advance Payment and Security

42.1 The Employer shall provide an Advance Payment on the Contract Price as stipulated in the GCC, subject to a maximum amount, as stated **in the BDS.** The Advance Payment shall be guaranteed by a Security. Section X "Contract Forms" provides a Bank Guarantee for Advance Payment form.

43. Technical Adjudicator

43.1 The Employer proposes to designate a Technical Adjudicator under the Contractor to the person named **in the BDS,** who shall be paid hourly fees as stipulated **in the BDS** plus reimbursable expenses. If the Bidder did not agree with this proposal, it should said in the Offer. If no agreement with the appointment of a Technical Adjudicator is not mentioned in the Letter of Acceptance, the Technical Adjudicator shall be appointed by the authority designated in the **BDS** and the PCC, at the request of any of the parties.

44. Procurement Related Complaint

44.1 The procedures for making a Procurement-related Complaint are as specified **in the BDS**.

Section II. Bidding Data Sheet (BDS)

A. General Provisions	
ITB 1.1	The Employer: **Ministry of Science, Energy and Technology** The Works involve retrofitting six (6) hospitals in Jamaica to reduce their energy consumption and GHG emissions. The Contractor will be paid using the Section VIII Schedule of Payments. The name and identification of the contract are: **Deep Energy Retrofit of Six (6) Hospitals - 2.1.1/EU.** The project consists of three works described below and will be a "sole responsibility" framework during the entire Project. <u>Work 1: Roof-mounted Solar PV systems.</u> The Contract is for Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at six hospitals to reach the Minimum Capacity included in Table VII.1. The bidders must offer a lump sum for the complete design and build of the PV system at each hospital. <u>Work 2: Air conditioning upgrade.</u> Upgrading of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems. <u>Work 3: Lighting Upgrade</u> Upgrading of existing lamps included in Section VII A 1.5 with energy efficient lamps. Lighting retrofit (LED, control based on occupancy and daylight sensing).
ITB 1.2	Planned Date to Complete the Works: Works 1 and 2: **70 weeks after contract signature.** Works 3: **43 weeks after contract signature.** The design has a delivery date certain: **Yes, for Works 1 and 2**. If there is a date certain, the Date of the Design Completion is: **20 weeks after contract signature.**

ITB 1.4 **Electronic – Procurement System**	The Employer shall use an electronic-procurement system to manage this RFP: Government of Jamaica Electronic Procurement (GOJEP) at www.gojep.gov.jm This is an online managed tender, and bidding documents and bids will only be made available and accepted via the electronic Government Procurement Portal (www.gojep.gov.jm). No offline (hard copy) bids will be accepted and there will be not tender box available for the manual submission of bids. To participate in this tender opportunity, bidders must first be registered and know how to use the electronic Government Procurement Portal (www.gojep.gov.jm). To register, please select the "Register as a supplier" link from the system home page. For assistance regarding registration, download of prequalification documents and upload of tender proposals please contact the Ministry of Finance, Office of Public Procurement Policy Unit Customer Care Desk at: (876) 932-5220/932-5246/932-5253 or via email at opppcustomercare@mof.gov.jm The electronic-procurement system shall be used to manage the following aspects of the procurement process: Issue Bidding document, Amendments to the bidding document, Submissions of Bids, Request for Clarification, Opening of Bids.
ITB 2.1	The Borrower is Government of Jamaica. Loan Agreement Amount or Financing: The GOJ has received financing assistance from the Inter-American Development Bank (IDB), Japan International Cooperation Agency (JICA) and European Union Caribbean Investment Facility (EU-CIF) towards the programme titled: Energy Management and Efficiency Programme (EMEP). The total financing received is Forty Million United States Dollars (US$40 Million).
ITB 2.1	The expression "Bank" used in this document means the Inter-American Development Bank (IADB) and the funds managed by the Bank. The Bank requirements and administered funds are identical with the exception of eligible countries where membership is different (See Section III, Eligible Countries. In this document references to *"loans"* cover financing instruments and methods, technical cooperation (TC) and operations financing. References to "Loan Contracts" include all legal instruments through which Bank operations are formalized. The Bank Loan is: Non-Reimbursable Financing Agreement Number: GRTER-16412-JA. Date: January 18, 2018
ITB 2.1	The name of the Project is: **Deep Energy Retrofit of Six Hospitals in Jamaica.**

ITB 4.1	Section III, "Eligible Countries" of this document establishes the eligible countries: a. Bank's member countries. b. European Union eligible countries.
ITB 4.3 (ineligible firms and individuals)	The Bank's website (www.iadb.org/integrity) provides information on sanctioned firms and persons. Individuals or groups of individuals - designated by the EU as subject to restrictive measures in the lists provided at www.sanctionsmap.eu (EU Restrictive Measures).
ITB 4.4 (participation in more than one Bid)	No limit on the number of members in a JVCA.
ITB 5.1	Bidders shall submit: **all the forms indicated in Section IV, "Bidding Forms**".
ITB 5.3	The information requested from Bidders in ITB 5.3 is modified in the following manner: (a) copies of original documents defining the constitution or incorporation, and principal place of business of the Bidder; written power of attorney of the signatory of the Bid to commit the Bidder; (b) total monetary value of construction works performed for each of the last five (5) years; (c) experience in works of a similar nature and size for each of the last five (5) years, and details of work under way or contractually committed; and clients who may be contacted for further information on those contracts; (d) major items of construction equipment proposed to carry out the Contract; (**NOT APPLICABLE)** (e) qualifications and experience of key technical personnel for the design, construction, technical supervision and quality control of the Works and also for the administrative personnel proposed to work at the Projects site; (f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five (5) years; (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources); (h) authorization to seek references from the Bidder's bankers;

	(i) information regarding any litigation, current or during the last five (5) years, in which the Bidder was/is involved, the parties concerned, and the disputed amounts; and awards; (j) proposals for subcontracting components such as the design or parts of the Works amounting to more than ten (10) percent of the Contract Price. The ceiling for subcontractor's participation is stated **in the BDS.** The following paragraphs are added to 5.3 (e): To qualify the bidder must present in its offer experts with the following qualifications. Key personnel for the Works 1. Roof-mounted Solar PV systems - One **Contract Manager:** Professional in Engineering with: - a minimum academic degree of bachelor's degree or equivalent in engineering, - 10 (ten) years of professional experience, counted from obtaining the university degree, - 5 (five) years of experience in managing projects of nature and volume equivalent to the bidding project. - At least managed one project in Latin America & the Caribbean. - One (1) **Principal Electrical Engineer** with: - a minimum academic degree of bachelor's degree or equivalent in electrical engineering, - 10 (ten) years of experience, counted from obtaining the university degree, - 5 (five) years of experience in design and installation of projects of a nature and volume equivalent to the 1. Works (Roof-mounted Solar PV systems). - One (1) **Mechanical Engineer** with: - a minimum academic degree of bachelor's degree or equivalent in mechanical engineering, - 5 (five) years of experience, counted from obtaining the university degree, - 3 (three) years of experience in HVAC projects of nature and volume equivalent to the 2. Works (Air conditioning upgrade). - One (1) **Electrical Engineer** with: - a minimum academic degree of bachelor's degree or equivalent in electrical engineering, - 5 (five) years of experience, counted from obtaining the university degree,

	- 3 (three) years of experience in design and installation of projects of a nature and volume equivalent to the 3. Works (Lighting Upgrade). -
ITB 5.3 (j)	The maximum percentage share of the subcontractor in the works construction is: 50 %
ITB 5.4	The requirements for JVCA qualification in ITB 5.4 are modified as follows: (a) the Bid shall include all the information listed in ITB 5.3 above for each JVCA partner; (b) the Bid shall be signed so as to be legally binding on all partners; (c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms; (d) one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the JVCA; and (e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge. (f) a copy of the JVCA Agreement entered into by the partners shall be submitted with the bid; or a Letter of Intent to execute a JVCA agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed Agreement. The Agreement of the Letter shall specify the percentage participation of each member.
ITB 5.5 (a)	The period is: **within the last 5 years** The multiple is: **US$4,000,000.00**
ITB 5.5 (b)	The number of similar Projects in nature, amount and design complexity is: **Two.**
ITB 5.5 (c)	The number of projects is: **Two (2)** The period is: **Ten (10) years.**
ITB 5.5 (d) (timely availability of essential equipment)	The essential equipment which the selected Bidder shall make available for the Contract execution is: **Not Applicable**
ITB 5.5 (g)	The Bidder minimum amount of liquid assets and/or Access to credit free of other contract commitments shall be: **US$200,000.00**
ITB 5.7	The experience and resources of the Subcontractors **shall be** taken into account.
ITB 8	It is highly recommended to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for

preparing the Bid and entering into a contract for construction of the Works.

A non-mandatory virtual pre-bid conference will be held on Wednesday, April 5, 2023 at 11:00 a.m. Please indicate your interested to attend by responding to procurement@mset.gov.jm by 5:00 p.m. (GMT-5) by Monday, March 27, 2023. The link to the conference will be provided.

Subsequent to the pre-bid meeting, there will be a set of scheduled site visit as follows:

Description	Proposed Dates
Bustamante Children's Hospital	Monday, April 10, 2023
Spanish Town Hospital	Tuesday, April 11, 2023
Annotto Bay Hospital	Wednesday, April 12, 2023
Port Maria Hospital	Thursday, April 13, 2023
Port Antonio Hospital	Wednesday, April 12, 2023
St Ann's Bay Hospital	Thursday, April 13, 2023

All interested contractors **MUST** contact the Project Executing Unit at procurement@mset.gov.jm to confirm attendance.

B. Bidding Document	
ITB 9.1	The paragraph 9.1 is substituted with the following: The set of bidding document comprises the documents listed in the table below and addenda issued in accordance with ITB 11: Section I. Instructions to Bidders t (ITB) Section II. Bidding Data Sheet (BDS) Section III. Eligible Countries Section IV. Bidding Forms Section V. General Contract Conditions (GCC) Section VI. Particular Contract Conditions (PCC) Section VII. Specifications & Performance Requirement Section VIII. Schedule of Payments Section IX. Forms of Contract
ITB 10.1	All clarifications must be submitted through the GOJEP System. Copies of all clarification received will be available through the GOJEP System. Requests for clarification must be received by the Contracting Agency no later than: Twenty-One (21) days prior to Bid closing date of May 9, 2023.
C. Preparation of Bids	
ITB 12.1	The language in which the Bid response must be drafted is: **English**

ITB 13.1	The paragraph 13.1 is substituted with the following: The Bid submitted by the Bidder shall comprise the following: (a)The Contractor's Bid (in the format indicated in Section IV, "Bidding Forms"); (b) Bid Security in accordance with ITB 17; (c) The List of Activities valued (that is, with prices shown); (**NOT APPLICABLE)** (d) Qualification Information Form and Documents; (e) Alternative offers where invited (**NOT APPLICABLE)**; and (f) The Successful Bidder shall submit the following additional documents **before signing the Contract**, considering the instructions and specifications included in Section IV and Annex VII.7: • Supervision and Quality Assurance Guide (SQA) • Guide on the work program (GWP) • Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans (ESHS-MSIP). The Successful Bidder shall submit a detailed outline of an Environmental and Social Management Plan that will broadly address Management Strategies and Implementation Plans (MSIP) to manage the relevant Environmental, Social, Health and Safety (ESHS) risks identified in the EMEP Environmental and Social Management Plan (Section VII.4 Accompanying Documents) inclusive of a strategy to comply with the EMEP Grievance Redress Mechanism and a strategy to ensure gender equality in the workforce. Subcontractors must include appropriate environmental and social protection measures in line with the ESMP. • Environmental, Social, Safety and Health in the Workplace Code of Conduct (ESHS) The Successful Bidder shall submit its Code of Conduct that will apply to Contractor's Personnel to ensure compliance with its Environmental, Social, Health and Safety (ESHS) obligations under the contract. All workers should sign and adhere to the code of conduct. In addition, the Bidder shall detail how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches. The Contractor shall be required to implement the agreed Code of Conduct.

ITB 14.1	The paragraph 14.1 is substituted with the following: The Contract shall include the design and build under "a sole responsibility" framework during the entire Project specified in ITB 1.1, that includes three Works. The bidders must offer a lump sum for the complete design and build of the project. The Bidder must complete the General Summary contained in Section IV including the lump sums.
ITB 14.2	The paragraph 14.2 is substituted with the following: **There is no List of Activities in this RFB.**
ITB 14.4	Lump sums and Unit price **shall not** be subject to Price adjustments according to Clause 47 of the GCC.
ITB 15.1	The currency of the Employer's country is: **Jamaican Dollar.**
ITB 15.2	The designated source to establish Exchange rates shall be: **Bank of Jamaica (BOJ)**
ITB 15.4	Bidders shall not have to clarify their foreign currency requirements.
ITB 16.1	The **bid validity period shall be one hundred and twenty (120) days** counted from the date of submission of bids.
ITB 17.1	Bid Security is required. The Bid Security shall be in the form of a Bank Guarantee or Bid Bond using the form for bid security (bank guarantee or bid bond) included in Section IV Bidding and Contract Forms. The acceptable forms of bid security must be issued from a reputable financial institution and are limited to: a) Bank Guarantee, or b) Bid Bond issued by a surety which is incorporated and domiciled in Jamaica. The Bidder shall include with their online bid submission, a copy of the Bid Security. **NB: The Bidder shall deliver the original form of the Bid Security to the Contracting Agency's address (see ITB 20.2(a)) before the Bid submission deadline of May 9, 2023 @ 2:00 p.m. GMT-5**
ITB 17.2	The Bid Security amount is: **US$ 45,000.00.**

ITB 17.5	The following paragraph is added to 17.5 (c): (iii) send and receive the approval of the Employer for the following forms specified in ITB Section IV: - Supervision and Quality Assurance Guide (SQA) - Guide on the work program (GWP) - Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans (ESHS- MSIP). - Environmental, Social, Safety and Health in the Workplace Code of Conduct (ESHS)
ITB 18.1	Alternative Bids **shall not** be considered.
ITB 19.1	The number of copies of the Bid to be submitted shall be: **One electronic copy via the GOJEP Portal.**
D. Submission of Bids	
ITB 20.1	The specifications included in ITB 20.1 is modified in the following manner: Bidders must submit their bids electronically: **Yes** The electronic-procurement system bidding process is: **Government of Jamaica Electronic Procurement (GOJEP) at www.gojep.gov.jm** Bids will only be accepted via the electronic Government Procurement Portal (www.gojep.gov.jm). No offline (hard copy) bids will be accepted and there will be not tender box available for the manual submission of bids To participate in this tender opportunity, bidders must first be registered and know how to use the electronic Government Procurement Portal (www.gojep.gov.jm). To register, please select the "Register as a supplier" link from the system home page. For assistance regarding registration, download of prequalification documents and upload of tender proposals please contact the Ministry of Finance, Office of Public Procurement Policy Unit Customer Care Desk at: (876) 932-5220/932-5246/932-5253 or via email at opppcustomercare@mof.gov.jm
ITB 20.2 (a)	Ministry of Science, Energy and Technology Energy Management and Efficiency Programme 36 Trafalgar Road Kingston 10
ITB 20.2 (b)	Name and Identification number of the contract as given in ITB 1.1: Deep Energy Retrofit of Six (6) Hospitals – 2.1.1/E.U.

ITB 20.2 (c)	Not Applicable.
ITB 20.3	Not Applicable.
ITB 20.4	Not Applicable.
ITB 21.1	The deadline for submission of bids shall be: Date: **May 9, 2023** Time: **2:00 p.m. (GMT-5)**
ITB 21.2	Late bids will be automatically rejected by the GOJEP Portal.
ITB 23.3	ITB 23. 2 is amended to read as follows: Notices for withdrawal, substitution or modification of bids shall be executed via the GOJEP Portal no later than the time and date specified in ITB 21.1 of the BDS
E. Bid Opening and Evaluation	
ITB 24.1	The Bid opening shall take place at: **The bid opening shall take place via the GOJEP electronic portal on May 9, 2023, at 2:15 pm. (GMT-5)** **A copy of the bid opening report will be forwarded to all bidders who submitted a bid**
ITB 27.1 (e)	The paragraph 27.1 (e) is substituted with the following: (e) The Bidder shall not furnish drawings, diagrams, sketches, schemes, calculations and a technical proposal.
ITB 28.2	Not Applicable.
ITB 33.1	The evaluation **shall not** use the Best and Final Offer (BAFO) method.
ITB 33.2	The final award **shall not** use Negotiations.
ITB 33.4	Not Applicable.
F. Award of Contract	
ITB 40.1	The successful Bidder shall submit the Beneficial Ownership Disclosure Form specified in Section IX “Contract Forms”.

ITB 41.1	The Standard Form of Performance Security acceptable to the Employer shall be Bank Guarantee. A Bank Guarantee shall be unconditional (on demand) (see Section IX: Contract Forms).
ITB 42.1	The Advance Payments shall be: • 10 % of the Contract Price paid to the Contractor no later than within 10 days as of the signing of contract upon submission of a bank Guarantee for Advance Payment Form 9. See Section X – Contract Forms).
ITB 43.1	The Technical Adjudicator proposed by the Employer is *[indicate the name and address]* The hourly fees for this Technical Adjudicator shall be *[indicate the amount and the currency]*. The personal data of this Technical Adjudicator are the following: *[Provide the relevant information, such as education, experience, age, nationality and current position; attach additional pages if necessary]*. The Authority who shall appoint the Technical Adjudicator when there is no agreement is *[indicate the full complete name and address]*
ITB 44.1	The procedures for making a Procurement-related Complaint are detailed in the Procurement Policies for Goods and Works financed by the Inter-American Development Bank GN-2349-15. If a Bidder wishes to make a Procurement-related Complaint, the Bidder should submit its complaint following these procedures, in writing (by the quickest means available, that is email), to: **For the attention**: **Title/position**: Chief Technical Director, Programme Implementation **Employer**: Ministry of Science, Energy and Technology **Email address**: procurement@mset.gov.jm

Section III. Eligible Countries

Section III a IDB Eligible Countries

Eligibility to provide goods, Works construction and render services for Bank financed procurement

Note: *In these documents references to Bank include the IADB and any fund administered by the Bank.*

Next you shall find 2 options numbered 1) for the User to choose the one pertinent which depends on the Financing source. Financing may come from the Inter-American Development Bank (IADB), the Multilateral Investments Fund (FOMIN) or occasionally, contracts may be financed by special funds restricting even more eligibility criteria to a particular Group of member countries, in which these shall be deciding to use the latter option:

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(1) Member Countries when the financing source is the Inter-American Development Bank.

Germany, Argentina, Austria, the Bahamas, Barbados, Belgium, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Croatia, Denmark, Ecuador, El Salvador, Slovenia, Spain, United States, Finland, France, Guatemala, Guyana, Haiti, Honduras, Israel, Italy, Jamaica, Japan, Mexico, Nicaragua, Norway, The Netherlands, Panama, Paraguay, Peru, Portugal, United Kingdom, Republic of Korea, Dominican, Peoples Republic of China, Sweden, Switzerland, Suriname, Trinidad and Tobago, Uruguay, and Venezuela.

Eligible Territories

(a) Guadeloupe, French Guyana, Martinique, Reunion – French Departments.
(b) U.S. Virgin Islands, Puerto Rico, Guam – U.S.A. Territory.
(c) Aruba – Kingdom of the Netherlands Constituent Country; and Bonaire, Curacao, Saint Maarten, Saint Eustatius – Kingdom of The Netherlands Departments
(d) Hong Kong – Special Administrative Region of the Peoples Republic of China.

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(1) List of Countries according to the Administered Fund Agreement:
(Include the list of countries)]
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(2) Criteria to determine Nationality and the country of origin of goods and services

To make a determination of: (a) the nationality of companies and individuals eligible to partake in Bank financed contracts and (b) the country of origin of goods and services, the following criteria shall be used:

A) Nationality

a) **An individual** holds the nationality of a Bank member country and or EU eligible countries when he/she meets the following requirements;

(i) Is a citizen of a member country; or
(ii) Has established domicile in a member country as a "bonafide" resident and is legally authorized to work in that country.

b) **A company** holds the nationality of a member country if two of the following requirements are met:

(i) Is legally constituted or incorporated according to the laws of a Bank member country and or EU eligible countries; and

(ii) More than fifty percent (50%) of the company capital is owned by individuals or companies of a Bank member countries and or EU eligible countries.

All partners in a partnership, consortium or association (JVCA) with joint and severally responsibility and all the subcontractors shall comply with the requirements set above.

B) Origin of Goods/Assets

Goods have their origin in a member country of the Bank and or EU eligible countries if they have been mined, grown, harvested, or produced in a member country of the Bank and or EU eligible countries. A good has been produced when through manufacture, processing or assembly another commercially recognized article results that differs substantially in its basic characteristics, function or purpose of utility from its parts or components.

For a good consisting of several individual components that need to be interconnected (either by the supplier, the purchaser or by a third party) to make the good operative and regardless of the complexity of the interconnection, the Bank considers that such good is eligible for financing if the assembly of the components took place in a member country, regardless of the origin of the components. When the good is a set of several individual goods that are normally packaged and sold commercially as a single unit, the good is considered to originate in the country where the set was packaged and shipped to the purchaser.

For purpose of origin, goods labeled “made in the European Union” shall be eligible without the need to identify the corresponding specific country of the European Union.

The origin of materials, parts or components of the goods or the nationality of the firm that produces, assembles, distributes or sells the goods, does not determine the origin of the goods.

C) Origin of Services

The country of origin of services is that of the individual or firm providing the services as determined under the nationality criteria set forth above. These criteria apply to services ancillary to the supply of goods (such as transportation, insurance, erection, assembly, etc.), to construction services and to consulting services.

Section III b EU Eligible Countries

EXTERNAL ACTION FINANCIAL INSTRUMENTS AND EUROPEAN DEVELOPMENT FUND

RULES ON PARTICIPATION IN PROCUREMENT PROCEDURES AND GRANTS

PART I: 2014-2020 instruments for external action

1) DCI, ENI, PI, Greenland and INSC

2) IcSP and EIDHR

3) IPA II

Part II: Rules on nationality and origin for public procurement, grants and other award procedures financed under the ACP-EC Partnership Agreement, laid down in Annex IV to the latter Agreement as revised by DECISION No 1/2014 OF THE ACP-EU COUNCIL OF MINISTERS of 20 June 2014 (2014/428/EU)

Part III: rules on nationality and origin for public procurement, grants and other award procedures for instruments for external action financed under the Overseas Association Decision

Part =II:

Participation in procedures for the award of procurement contracts or grants financed from the multi-annual financial framework of cooperation under the ACP-EC Partnership Agreement is open to international organisations and all natural persons who are nationals of, or legal persons who are effectively established in:

(a) *an ACP State* (appendix 12);
(b) *a Member State of the European Union* (appendix 1);
(c) *Beneficiaries of the Instrument for pre-accession assistance* (appendix 2);
(d) *a Member State of the European Economic Area* (appendix 3);
(e) *Overseas Countries and Territories* (appendix 8);
(f) developing countries and territories, as included in the OECD-DAC list of ODA Recipients, which are not members of the G20 group, without prejudice to the status of the *Republic of South Africa*, as governed by Protocol 3 of the partnership Agreement (appendices 4, 5, 6 and 7);
(g) countries for which Commission has adopted a decision approving the request for *reciprocal access* to external assistance in agreement with ACP countries;

Currently there are no such countries.

(h) *a* Member *State of the OECD* (appendix 9), in the case of contracts implemented in a Least Developed Country (LDC)[5] or a Highly Indebted Poor Country (HIPC)[6], or in the case of contract implemented in regional or global programmes which include at least one LDC or HIPC country.

[5] See appendix 4 for the full list of LDCs.
[6] See full list of HIPCs in footnote 4.

A. Appendices

APPENDIX 1 : EU Member States

Austria, Belgium, Bulgaria, Czech Republic, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

APPENDIX 2 : IPA II beneficiaries

Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, Serbia, Turkey, the former Yugoslav Republic of Macedonia. * This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

APPENDIX 3 : European Economic Area

(only non-EU MS are mentioned) Iceland, Lichtenstein, Norway.

APPENDIX 4 : Least Developed Countries

Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sao Tome & Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, South Sudan, Tanzania, Timor-Leste, Togo, Tuvalu, Uganda, Vanuatu, Yemen, Zambia.

APPENDIX 5: Other Low Income Countries

Kenya, Democratic People’s Republic of Korea, Tajikistan, Zimbabwe.

APPENDIX 6 : Lower Middle Income Countries and Territories

Armenia, Bolivia, Cabo Verde, Cameroon, Congo, Côte d´Ivoire, Egypt, El Salvador, Georgia, Ghana, Guatemala, Guyana, Honduras, India, Indonesia, Kosovo, Kyrgyzstan, Micronesia, Moldova, Mongolia, Morocco, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Paraguay, Philippines, Samoa, Sri Lanka, Swaziland, Syrian Arab Republic, Tokelau, Ukraine, Uzbekistan, Vietnam, West Bank and Gaza Strip.

APPENDIX 7 : Upper Middle Income Countries and Territories

Albania, Algeria, Antigua and Barbuda, Argentina, Azerbaijan, Belarus, Belize, Bosnia and Herzegovina, Botswana, Brazil, Chile, China (People’s Republic of), Colombia, Cook Islands, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Fiji, Former

Yugoslav Republic of Macedonia, Gabon, Grenada, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Lebanon, Libya, Malaysia, Maldives, Marshall Islands, Mauritius, Mexico, Montenegro, Montserrat, Namibia, Nauru, Niue, Palau, Panama, Peru, Saint Helena, Saint Lucia, Saint Vincent & the Grenadines, Serbia, Seychelles, South-Africa, Suriname, Thailand, Tonga, Tunisia, Turkey, Turkmenistan, Uruguay, Venezuela, Wallis and Futuna.

APPENDIX 8 : overseas countries and territories

Anguilla (UK), Aruba (NL), Bermuda (UK), British Indian Ocean Territory (UK), British Virgin Islands (UK), Cayman Islands (UK), Curação (NL), Falkland Islands (UK), French Polynesia (FR), French Southern and Antarctic Territories (FR), Greenland (DK), Montserrat (UK), New Caledonia and Dependencies (FR), Pitcairn (UK), Saba (NL), Saint Barthelemy (FR), Saint Helena Ascension Island Tristan da Cunha (UK), Sint Eustatius (NL), Sint Maarten (NL), South Georgia and South Sandwich Islands (UK), St. Pierre and Miquelon (FR), Turks and Caicos (UK), Wallis and Futuna Islands (FR).

APPENDIX 9 : OECD MEMBER STATES

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Australia, Canada, Chile, Iceland, Israel, Japan, Korea, Mexico, New Zealand, Norway, Switzerland, Turkey, United States of America.

APPENDIX 10 : G20 member developing countries

Argentina, Brazil, China, India, Indonesia, Mexico, South-Africa, Turkey.

APPENDIX 11 : ENI PARTNER COUNTRIES AND TERRITORIES

Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Republic of Moldova, Morocco, occupied Palestinian territory (oPt), Syria, Tunisia, Ukraine.

APPENDIX 12 : ACP COUNTRIES*

Africa:

South Africa**, Angola, Benin, Botswana, Burkina Faso, Burundi, Central African Republic, Cameroon, Cabo Verde, Chad, Comoros Islands, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Uganda, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Zambia and Zimbabwe.

Caribbean:

Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Surinam, Trinidad and Tobago.

Pacific:

Cook Islands, East Timor, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, the Solomon Islands, Western Samoa, Tonga, Tuvalu, Vanuatu.

** While natural and legal persons established in South African are eligible to participate in procedures financed by the 10th/ 11th EDF, South Africa cannot be a beneficiary of contracts financed by the 10th/11th EDF.

* Cotonou Partnership Agreement of 23 June 2000 (as amended by the provisional application of Decision No 1/2000 of the ACP-EC Council of Ministers of 27 July 2000, Decision No 1/2000 of the ACP-EC customs cooperation committee of 18 October 2000, Decision No 1/2001 of the ACP-EC customs cooperation committee of 20 April 2001, Decision No 2/2001 of the ACP-EC customs cooperation committee of 20 April 2001, Decision No 3/2001 of the ACP-EC customs cooperation committee of 10 May 2001, Decision No 4/2001 of the ACP-EC customs cooperation committee of 27 June 2001, Decision No 5/2001 of the ACP-EC customs cooperation committee of 7 December 2001, Decision No 2/2002 of the ACP-EC customs cooperation committee of 28 October 2002, Decision No 1/2003 of the ACP-EC Council of Ministers of 16 may 2003, Council Decision (EC) of 19 December 2002, Decision No 1/2004 of the ACP-EC Council of Ministers of 6 may 2004, Decision No 2/2004 of the ACP-EC customs cooperation committee of 30 June 2004 and Decision No 4/2005 of the ACP-EC customs cooperation committee of 13 April 2005).

Section IV. Bidding and Contract Forms

1. LETTER OF BID

[date]

Number of RFB Identification and Title of the Contract; *[indicate the number of identification and the title of Contract]*

To: Ministry of Science, Energy and Technology

(a) **Conformity:** After reviewing the bidding document, including amendment(s) *[list]*, we offer to implement the design and the construction under a sole responsibility plan *[name and number of Contract identification]* according the GCC attached to this Bid for the Contract Price *[indicate the amount in figures]*, *[indicate the amount in words] [indicate the name of currency] [the Contract Price must be the Grand Total of the Grand Summary table]*.

We confirm that for the Contract Price defined below the Contractor must define, design and build the Works defined in this RFB and that the project will be a "sole responsibility" framework during the entire Project.

1. Rooftop-mounted Solar PV systems

The Contract is for Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at six hospitals to reach the Minimum Capacity included in Table VII.1.

The bidders must offer a lump sum for the complete design and build of the PV system at each hospital.

We understand that the Contract Price for Works 1 is the lump sum for Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at six hospitals to reach the Minimum Capacity included in Table VII.1 of the Bidding Document.

The Contract Price for Works 1 will be the sum of the Prices for Works 1 at each hospital

Works 1

Item	Price for Works 1 (lump sum)
Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **Annotto Bay Hospital**	
Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **Bustamante Children Hospital**	

Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **Port Antonio Hospital**	
Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **Port Maria Hospital**	
Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **St. Ann's Bay Hospital**	
Design and build of the project Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at **Spanish Town Hospital**	
Contract Price for Works 1 (carried forward to Grand Summary)	

2. Air conditioning upgrade

We understand that the Contract Price for Works 2 is the sum of the lump sums for Replacement of existing air conditioning systems included in table VII.2 of the Bidding Document with energy efficient air conditioning non-inverter systems at each hospital.

The Contract Price for Works 2 will be the sum of the Prices (lump sums) for Works 2 at each hospital.

Works 2

Item	Price for Works 2 (lump sum)
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems at **Annotto Bay Hospital**	
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems.at **Bustamante Children's Hospital**	
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems at **Port Antonio Hospital**	
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems at **Port Maria Hospital**	
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems at **St. Ann's Bay Hospital**	
Replacement of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems at **Spanish Town Hospital**	

Contract Price for Works 2 (carried forward to Grand Summary)	

2. Lighting Upgrade

We understand that the Contract Price for Works 3 is the sum of the lump sums for Replacement of existing lamps included in Section VII A. 1.5, particularly table VII.3, rewiring and installing devices included in table VII.3 of the Bidding Document.

The Contract Price for Works 3 will be the sum of the Prices (lump sums) for Works 3 at each hospital

Item	Price for Works 3 (lump sum)
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **Annotto Bay Hospital**	
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **Bustamante Children's Hospital**	
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **Port Antonio Hospital**	
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **Port Maria Hospital**	
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **St. Ann's Bay Hospital**	
Replacement of existing lamps included in Section VII A. 1.5 of the Bidding Document with energy efficient lamps, rewiring and installing devices included in table VII.3 at **Spanish Town Hospital**	
Contract Price for Works 3 (carried forward to Grand Summary)	

Grand Summary

Works	Contract price
1	
2	
3	
Grand Total	

(b) **Total price:** The *Contract* shall be paid in the following currencies:

Currency	Percentage paid in the currency	Exchange rate: *[indicate the number of national currency units equivalent to one unit in the foreign currency]*	Materials requiring foreign currencies
(a) (b) (c) (d)			

(c) **Advance Payment:** The advance payment requested, according to ITB 42.1 is:

Amount	Currency
(a) (b)	

(d) **Technical Adjudicator:** We accept the designation of *[indicate the name proposed in the Bidding Data]* as Technical Adjudicator.

[or rather]

We do not accept the designation of *[indicate the name proposed in the Bidding Data]* as Technical Adjudicator and in its place we propose as Technical Adjudicator *[indicate the name]*, whose fees and personal data are attached to this Form.

(e) **Binding Contract**: This Offer and its acceptance in writing, formalize a contract binding between both parties. We understand that you are not obligated to accept the lowest or any other Bid that you may receive.

(f) **Bid Validity and Bid Security**: We hereby confirm that this Bid complies with the Bid validity and, if required, Bid Security or Bid-Securing Declaration as required by the bidding document and specified in the BDS.

(g) **Readiness** We confirm that we are prepared and organized to implement the final works design and provide you with adequate technical supervision as Contractors, concerning quality assurance, obtaining permits, authorizations and necessary regulatory consents for the approval of blueprints and final designs and for performing the environmental, social, safety and health in the workplace provisions in the country.

(h) **Eligibility**: the subscribers, including all subcontractors required to implement any part of the contract are nationals of the Bank member countries according to ITB 4.1. In case the Works contract includes the supply of related goods and services, we promise that these related goods and services shall originate in the Bank member countries.

(i) **No conflict of interest**: We, including any sub-contractor or supplier for any contract component, have no conflict of interests according to provisions in ITB 4.2.

(j) **Suspension and debarment:** According to ITB 4.3, our company, its headquarters, affiliates or subsidiaries, including all the subcontractors or suppliers for any party of the contract have not been declared ineligible by the Bank, under the laws or official regulations of the Employer's Country

(k) **Sanctions**: We have not sanction from the Bank or any other International Financial Institution (IFI),

(l) **Cooperation:** We shall do our very best to assist the Bank in any investigation.

(m) **Prohibited Practices**: We, and our subcontractors or suppliers for any component of the contract (including, in all cases, the respective directors, officers, principal shareholders, proposed key personnel and agents) have read and understood the definitions of Prohibited Practices of the Bank and the sanctions applicable to acts as described in this document and we are obliged to observe the relevant norms. In addition, we commit ourselves that within the selection process (and in case of being awarded, in the execution) of the contract, to observe the laws on fraud and corruption, including bribery, applicable in the country of the Employer.

In addition, we, and our subcontractors or suppliers for any component of the contract (including, in all cases, the respective directors, officers, principal shareholders, proposed key personnel and agents) acknowledge that failure to comply with any of these statements is the basis for the imposition by the Bank of one or more of the measures described in ITB 3.1.

Our company, its parent company, its affiliates or subsidiaries, subcontractors or suppliers for any part of the contract (including, in all cases, directors, officers, principal shareholders, proposed key personnel and agents):

(i) We have not been declared ineligible by the Bank, or by any other International Financial Institution (IFI) with which the Bank has signed an agreement for the reciprocal recognition of sanctions, so that we may be awarded contracts financed by any of them; and

(ii) We have not engaged in any Prohibited Practice and have taken the necessary measures to ensure that no person acting for us or on our behalf participates in Prohibited Practices.

(n) **Commissions, gratuities and fees**: We have paid, or will pay the following commissions, gratuities, or fees with respect to the RFB 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 and address of the Agent	Amount and Currency	Purpose of the Commission or Discount
_____	_____	_____
_____	_____	_____
_____	_____	_____

(If there are no commissions or discounts indicate "none")

Authorized Signature:
_____

Name and Position of Signatory: _____

Name of Bidder: _____

Address: _____ _____

2. QUALIFICATION INFORMATION

1. Firms or Members of JVCA	1.1 Bidder Incorporation, constitution or legal status *[attach copy of the document or letter of intent]* Place of constitution or incorporation: *[indicate]* Headquarters for the activities: *[indicate]* 1.2 Power of attorney of the signatory to the Bid *[attach.]* The annual quantities invoiced are: *[indicate the equivalent quantities in local currency and corresponding years according to the BDS in reference to ITB 5.3(b).* 1.3 The experience in design and construction of works of a similar nature and size is in *[indicate the number of projects according to the information specified in ITB 5.3 (c)] [The Employer prefers that the Bidder's experience include comprehensive works design and construction but shall accept that the requirements for experience be met by projects built and designed separately. In the next table, quantities shall be stated in the same currency used in item 1.2 before. Also detail projects designed, under construction or committed to implement, including estimated dates for completion]*

Name of Project designed and Country	Name of Employer and contact Person	Type of Design completed	Cost of Project designed (equivalent in USD)
(a) (b)			

Name of Project built and Country	Name of Employer and contact Person	Type of works and year of completions or year of execution with progress percentage	Contract Value (equivalent in USD)
(a) (b)			

	1.5 Qualifications and experience of key personnel are attached. *[attach biographical information according to ITB 5.3(e) [Also see Clause 9.1 of the GCC and in the PCC]. Include the list of said personnel in the following table.*

Key Personnel				
Position	Name	Academic Degree	Years' experience in projects of nature and volume equivalent	Years' experience as Project Administrator
Project Administrator				

Key personnel for the Works					
Position	Name	Academic Degree	Professional Experience (years)	Number of years managing projects	Number of projects managed in Latin America & The Caribbean
Contract Manager					

Key personnel for the Works				
Position	Name	Academic Degree	Professional Experience (years)	Experience in (years) projects of a nature and volume equivalent to the bidding Works 1
Principal Electrical Engineer (1)				

Key personnel for the Works				
Position	Name	Academic Degree	Professional Experience (years)	Experience in (years) projects of a nature and volume equivalent to the bidding Works 2

Principal Mechanical Engineer (1)				

Key personnel for the Works				
Position	Name	Academic Degree	Professional Experience (years)	Experience in (years) projects of a nature and volume equivalent to the bidding Works 1
Electrical Engineer (1)				

	1.6 The financial statements for the last five (5) years; balances sheets, profit and loss statements, auditors' reports etc. that are attached in accordance with ITB 5.3 (f) are: [*list below and attach copies]* 1.7 Proof of Access to financial resources according to ITB 5.3(g) is: [*list and attach copies of the documents confirming the foregoing.*] 1.8 Attach the authorization including Name, address, and telephone numbers to contact the Bank so they can provide a Bidder references in case the Contracting Party requests them, according to ITB 5.3(h) of the ITB *[Attach authorization]* 1.9 The information on pending litigation that Bidders is involved in is included, according ITB 5.3(i) of the ITB. *[Include the information in the next table]* 1.10 Declare works contracts that have been suspended or terminated by an Employer for reasons related to non-compliance with any environmental, social or safety requirements (including exploitation and sexual abuse (EAS) and gender violence (VBG)) or safety and health in the last five years.

	1.11 The Contractors proposed and participant companies according to ITB 5.3 (j) are: *[indicate the information in the following table. See Clause 7 of the GCC and 7 of the PCC]*.

Name of the other Party(ies)	Cause of Dispute	Amount in issue
(a)		

(b)		

Works Sections	Subcontract Value	Sub Contractor (name and address)	Experience in similar projects
(a) (b)			

2. Joint Venture, Consortium or Association (JVCA)	2.1 The information requested in paragraphs 1.1 to 1.10 above must be provided by each JVCA member. 2.2 The information requested in paragraph 1.11 above must be provided by the JVCA. *[provide the information]*. 2.3 The Power of Attorney granted to the signatory(s) of the Bid must be delivered in order to sign the Bid on behalf of the JVCA 2.4 2.4 Attach the Agreement among all partners of the JVCA (and which is legally binding on all partners), which shows that: (a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms; (b) one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the JVCA; and (c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
3. Additional Requirements	3.1 Bidders should provide any additional information required in the BDS.

3. OTHER FORMS

FORM SQA
Supervision and Quality Assurance Guide

In this Form, the Successful Bidder shall provide his/her approach and resources to meet the contract obligations related to technical supervision and quality control of the project and the services to be implemented under the Contract. If the Successful Bidder plans to resort to the Sub-Contractor for design, works supervision, materials control and laboratory, equipment installations, operation and maintenance (if applicable), cost control systems, time and quality, computer programs, periodic and special reports drafting, social communication, emergency response, and environmental and social supervision, safety and health in the workplace, training, etc., the Successful Bidder shall indicate the manner which guarantees the coordination and uninterrupted communication with the Employer and the Project Manager regarding those or other key implementation topics, in case of design changes after the Employer approved the Contractor designs. The Successful Bidder shall establish response standards and progress indicators for those areas that must be improved.

During the Project execution and later, for the time necessary to fulfill the Contractor's obligations, he/she shall provide all necessary supervision to plan, organize, conduct, administer, inspect, and put the works to trial. The supervision duties shall be charged to enough engineers and assistants with adequate language skills to communicate and know about the operations (including required methods and techniques, risks and accident prevention procedures) for a satisfactory and safe implementation of the projects.

During the Project implementation stage, the Contractor shall be attentive to the works Project Management to comply with all responsibilities and duties during the design phases, construction, equipment installations and if appropriate, the installations operation.

In particular, the Contractor shall make available to the Project Manager and representatives of the Employer quality engineers and assistants, and timely explanations and if applicable, at the time of:

No.	Bid Element	Applicable	Not Applicable
	Review and confirm the Contractor quality assurance program	x	
	Review and confirm materials and equipment delivery to the works site	x	
	Review and confirm the quantity and quality of completed projects, which shall be the basis of the Contractor according to the terms of the Contract;	x	

No.	Bid Element	Applicable	Not Applicable
	Participate in periodic meetings with the Contractor to review the project progress, technical matters and the measures to achieve costs control, quality and the implementation Schedule;	x	
	Manage matters related to environmental, social and safety and health in the workplace matters and during construction;	x	
	Review and confirm the acceptance trials proposals made by the Contractor and support the employer to complete the acceptance trials;	x	
	Review and confirm the O & M Manual, including the training programs for the Employer's engineers, prepared by the Contractor;	x	
	Provide any reasonable additional technical support requested by the Employer as necessary to demonstrate a successful implementation of the Contract.	x	

FORM GWP
Guide on the work program

The successful bidder shall present a work program for the design & build of the works, including a summary of the identification of the main milestones and the critical path. The detailed schedules shall be presented in the following forms.

The work program shall be developed on the basis of the compliance specifications and conditions and the works requirements and shall describe the following, if applicable:

No.	Bid Element	Applicable	Not Applicable
1	Design of the Works, including the presentation of design deliverables, review and approval of the design by the Project Manager; as it is specified in Section VII	X	
2	The processes and deliverables necessary to start the works; as it is specified in Section VII	X	
3	The execution of the works within the termination period, highlighting the activities that cause restrictions in the construction sequence;	X	
4	The tests, start-up and delivery of the finished works;	X	
5	The integration of the technical supervision and quality control services of the contractor;	X	

FORM ESHS- MSIP

Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans

The Bidder shall submit complete and concise Environmental, Social, Safety and Health in the workplace Management Strategies and Plans to Implement (ESHS-MSIP)

These strategies and plans shall describe in detail the actions, materials, equipment, management procedures, etc. what shall be implemented by the contractor and subcontractors to implement the works.

In preparing these strategies and plans, the Bidder shall take into account the contract ESHS stipulations, including the ones described in more details in Section VII, “Specifications & Performance Requirements”.

CODE OF CONDUCT

Environmental, Social, Safety and Health in the Workplace Code of Conduct

The Successful Bidder must demonstrate they have code of conduct standards that shall be applied to the contractor employees and subcontractors. The standards of conduct shall guarantee compliance with ESHS contract provisions, including those described in more details in Section VII, “Specifications & Performance Requirements.”

Moreover, the Bidder shall present a plan on how the standards of conduct shall be implemented. This shall include: how it shall be introduced in labor contracts, what training shall be provided, how it shall be monitored and how the contractor shall address these violations.

FORM OF DEMAND GUARANTEE

Beneficiary: _____

Bidding 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 design and build of _____ under RFB 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 Bid ("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, Social, Health and Safety (ESHS) 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, Social, Health and Safety (ESHS) 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 RFB; 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]

FORM OF BID SECURITY – BID BOND

[The Surety shall fill in this Bid Bond Form in accordance with the instructions indicated.]

BOND NO. _____

BY THIS BOND *[name of Bidder]* as Principal (hereinafter called "the Principal"), and *[name, legal title, and address of surety]*, authorized to transact business in *[name of country of Employer]*, as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of Employer]* as Obligee (hereinafter called "the Employer") in the sum of *[amount of Bond]*[7] *[amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted a written Bid to the Employer dated the ___ day of _____, 20__, for the design and build of *[name of Contract]* (hereinafter called the "Bid").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

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

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

then the Surety undertakes to immediately pay to the Employer up to the above amount upon receipt of the Employer's first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Bid Validity Period set forth in the Principal's Letter of Bid or any extension thereto provided by the Principal.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ____ day of _____ 20__.

Principal: _____ Surety: _____

Corporate Seal (where appropriate)

_____ _____

(Signature) *(Signature)*

(Printed name and title) *(Printed name and title)*

[7] The amount of the Bond shall be denominated in the currency of the Employer's country or the equivalent amount in a freely convertible currency.

Section V. General Conditions of Contract

Clause Index

General Conditions of Contract

A. General Provisions

1. Definitions

1.1 The defined words and expressions are in bold letters.

(a) The **Technical Adjudicator** is the person jointly appointed by the Employer and the Contractor, or, by default, by the Designation Authority according to Clause 26.1 of these GCC to solve any dispute in the first instance, according to provisions in Clauses 24 and 25 of these GCC,

(b) **The List of Activities** is the list specified by the Employer in the Bidding document, which is accepted or modified and submitted, indicating activities quantities and prices, which is a part of the Bid.

(c) **Schedule of** Ac**tivities** the list duly prepared ty the **Contractor** with indications of sequence, duration and the program of the Activities that comprise the Works design and construction.

(d) **Designs** are documents prepared by the **Contractor** to be approved by the Project Manager before starting the Works which include the works descriptions, technical specifications calculation aid-memoirs, basic studies undertaken, blueprints, and schedules, and permits to implement the Works. The Projects Manager approval does not imply co-responsibility for the design;

(e) **Remunerated Events** are those defined in Clause 44 of these GCC

(f) **Completion Date** is the date of completion of the Works, certified by the Project Manager according to Sub-Clause 55.1 of these GCC.

(g) **The Contract** is the Contract between the Employer and the Contractor to design, execute, complete, repair, if necessary and maintain the Works. It includes the documents listed in Sub-Clause 2.3 of these GCC.

(h) **The Contractor** is the legal or natural person whose Bid for the Works design and execution has been accepted by the Employer.

(i) **Contractor's Bid** are **the bidding document** that were completed and submitted by the Contractor to the Employer.

(j) **Contract Price** is the Price set in the Letter of Acceptance and subsequently, as adjusted following the Contract provisions.

(k) **Days** mean continues calendar days; that is, those that relentlessly get away without considering that they are working, holiday or festive day;

(l) **Months** mean calendar months.

(m) **Day work** means a variety of jobs paid on the basis of time used by the Contractor's employees and equipment in addition to payments for related materials and the plant.

(n) **Defect** is any part of the Works that has not been completed according to the Contract.

(o) **Defects Liability Certificate** is the certificate issued by the Project Manager once the Contractor has rectified the defects.

(p) **Defects Liability Period** is the period **stipulated in Sub-Clause 35.1 of the PCC** and calculated as of the completion date.

(q) **Blueprints** include the designs, estimates and other information provided or approved by the Project Manager to implement the Contract.

(r) **The Employer** is the party hiring the Contractor to execute the Works according to **stipulations in the PCC.**

(s) **Equipment** is the Contractor machinery and vehicles that have been temporarily moved to the Works sites for Project construction ends.

(t) The **Initial Contract Price** is the Contract Price indicated in the Letter of Acceptance of the Employer.

(u) The **Planned Date to Complete the Works Design** is the date planned for the Contractor to finalize the Works designs and is specified **in the PCC.** This date may be modified only by the Project Manager with a deadline extension or an order to speed up works;

(v) **Planned Projects Completion Date** is the date projected by the Contractor to complete the Works and which is **specified in the PCC.** This date may only be modified by the Project Manager by extending the deadline or instructing to speed up the works.

(w) **Materials** are all the supplies, including fungible goods, used by the Contractor to be included in the Works.

(x) **Plant** is any integral part of the Project having a mechanical, electrical, chemical or biological function and includes vehicles that the Contractor assigns to the Project and is used by the Employer and his/her Supervisors

(y) **The Project Manager** is the person whose name **appears in the PCC** (or any other competent person appointed by the Employer with notification to the Contractor to act as a replacement of the Project Manager), responsible for supervising the Works design, Works execution and administering the Contract

(z) **PCC** mean Particular Conditions of Contract.

(aa) **Projects Site** is the site as **defined in the PCC.**

(bb) **Investigation Reports of the Works Site**, included in the bidding document, are interpretative reports, based on facts, and refer to the surface conditions and the Works Site undersoil.

(cc) **Specifications** mean minimum Works specifications that the Employer established in the Specifications & Performance Requirements and any modification or addition made or approved by the Projects Manager and that the Contractor shall respect or replace with equal or superior specifications when the Works final design is implemented and any modification or addition approved by the Project Manager,

(dd) **Specifications** mean those included in the PCC and in Section VII. Purposes, scope and requirements and/or are technical criteria are specified for the Design and the Works and must be necessarily be complied with by the Contractor. The Designs and the Works shall be adapted to the objectives and purposes of the Project.

(ee) **Startup Date** is the latest date that the Contractor shall start the Works design and may carry out the **Preliminary Works** that is **stipulated in the PCC**. It does not necessarily coincide with any of dates for taking possession of the Works Site.

(ff) **The Date to Initiate the Projects** is the latest date in which the Contract shall start executing the Works with designs approved by the Projects Manager and is **stipulated in the PCC**. It does not necessarily coincide with any of dates for taking possession of the Works Site.

(gg) **Subcontractor** is a natural or legal person, hired by the Contractor to carry out a part of the Contract works and includes works at the Project Site.

(hh) **Temporary Works** are the works a Contractor must design, build, install and withdraw and that are necessary for the Works construction or installations.

(ii) **Preliminary Works** are works that the Contractor may undertake without obtaining the approval of the Works design and referred to in subparagraph (d) above and that at least includes: mobilization, establishment and camps construction, drawing lines and remapping, cleaning, excavations, sample collections and measurements such as percolation, supporting capacity, and light soil movements for accesses.

(jj) **Variation** is an instruction imparted by the Projects Manager which modifies the Works.

(kk) **Works** is all that the Contract requires to design, construct, install, repair if applicable under the Contractor sole responsibility scheme, and deliver to the Contracting Party as **defined in the PCC** and includes permanent, final works and those with rectified defects if that applies.

(ll) **Bank** is the Inter-American Development Bank (IADB) with Headquarters in Washington DC.

(mm) **Technical Supervision** mean the jobs of inspection engineers, laboratory technicians and quality control personnel of the Contractor who shall demonstrate at all time that the designs adapt to the best engineering practices and that the Works Construction is adjusted according to Section VII, under a Contractor sole responsibility scheme. The Specifications and Performance Conditions of the bidding documents, Blueprints and Works details as approved by the Project Manager. Include inspections by engineers,

architects and experts who implemented the Works design and the supervision of ESHS compliance with obligations inherent to the Projects. The Contractor Technical Supervision must cooperate at all times with the Employer's supervision;

(nn) **Environmental, Social and Safety and Health in the workplace (henceforth, "ESHS")** are national requirements on these topics, and should they not exist, as they are contained in the Inter-American Development Bank standards and policies and the Specifications.

(oo) **Performance Conditions and Specifications** is the Section VII of the bidding document containing the Employer requirements regarding design execution, Works construction and the operation and maintenance, if applicable.

2. Interpretation

2.1 If the context requires, to interpret these GCC, the singular also means the plural, and the male also means the female and vice versa. Headings of Clauses have no relevance in themselves. The words used in the Contract have a regular meaning unless they are specifically defined. The Project Manager shall provide clarifications to queries about these GCC.

2.2 **If the PCC stipulate** that the Works should be completed by sections, the references made to Works in the GCC, the Completion Date and the Planned Date of Completion apply to each Section of the Works (except for specific references to the Date of Completion and the Planned Date for Completion for the entirety of the Projects).

2.3 The documents comprising the Contract shall be interpreted in the following order of priority:

(a) Agreement

(b) Approved Designs by the Employer

(c) Specifications and Performance Conditions,

(d) Letter of Acceptance,

(e) Bid (the last if BAFO or Negotiations were used)

(f) Particular Conditions of Contract,

(g) General Conditions of Contract,

(h) Specifications,

(i) Blueprints,

(j) List of Activities, (the last if BAFO or Negotiations were used) and

(k) Any other document that is specified **in the PCC** as a part of the whole Contract.

3. Language and Law

3.1 The Contract language and law to govern are stipulated in the PCC.

4. Project Manager's Decisions

4.1 Except when otherwise specified, the Project Manager, representing the Employer, shall decide on contract matters that arise between the Employer and the Contractor/

5. Delegation of duties

5.1 After notifying the Contractor, the Project Manager shall be able to delegate to other persons, with the exception of the Technical Adjudicator, any of the duties and responsibilities, and shall also be able to cancel any delegation of duties after notifying the Contractor.

6. Communications

6.1 Communications between parties referenced in the Contract Conditions shall only be valid when formalized in writing**.** Notices shall come into force once they are delivered.

7. Subcontracting

7.1 The Contractor may subcontract works if holding the approval of the Project Manager but may not sign over the Contract without the approval of the Employer. Subcontracting does not modify the Contractor's obligations.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Works Site with other Contractors, public authorities, utilities companies and the Employer on the dates indicated in the List of other Contractors as **indicated in the PCC.** The Contractor shall also have to provide the latter with the installations and services described in that List. The Contracting shall be able to modify the List of Other Contractors and notice should be given to the Contractor to that effect.

9. Personnel

9.1 The Contractor shall employ the key personnel listed in the List of Key Personnel according to indications **in the PCC** to carry out the duties specified in the List, or some other staff approved by the Project Manager. The Project Manager shall approve replacement of any key personnel

only if the qualifications, skills, training, capacity and experience of staff proposed is the same or superior to the personnel named in the List.

9.2 If the Project Manager request the Contractor to remove a member of the Contractor's labor force, indicating reasons for the request, the Contractor shall make sure that such a person leaves the Project's Site within the next seven days and have no other involvement in the Contract related Jobs.

9.3 Statement in paragraph 9.1 is especially applied to Technical Supervision, since they are always considered as part of the Key Personnel.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are the Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer's risks:

(a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to

(i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

(ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to

(a) a Defect which existed on the Completion Date;

(b) Contractor failures in the design produced by the Contractor;

(c) defects or negligence of the Contractor's Technical Supervision;

(d) an event occurring before the Completion Date, which was not itself an Employer's risk, or

(e) the Contractor's activities at the Site after the completion date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Correction Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.

12.2 Contractor's risks are when there is a breach of the environmental, social and safety and health in the workplace (ESHS) obligations established by applicable law and/or the applicable Contract provisions.

12.3 A Contractor's risk is that information delivered by the Employer in the bidding document about which the Employer has made no representation of truthfulness or sufficiency. The contractor recognized making due and diligent thorough review of it and entails his/her risk to trust or not on that information. Then, the Contractor is responsible for interpreting the given by the Employer and shall modify it or not in his discretions to meet the Specifications & Performance Requirements and its purposes.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the quantities and deductibles **stated in the PCC** for the following events which are due to the Contractor's risks:

(a) losses or damages to – the Works, Plant and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and

(d) personal injury or death;

(e) professional responsibility for the Works design.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 The insurance terms shall not be able to be modified without the approval of the Project Management.

13.5 Both parties shall comply with the insurance policies terms.

14. Site Investigation Reports

14.1 When the bid is prepared, the Contractor shall base reports on the Site investigations that he/she or any others one carries out as indicated **in the PCC,** besides any other information available given by the Employer which is only a reference and must be understood as a Contractor risk

15. Queries about Particular Contract Conditions

15.1 The Projects Manager shall respond all queries about the PCC.

16. Design and Build of the Works by the Contractor

16.1 The Contractor shall design, build and install the works according to the Specifications & Performance Requirements and Drawings approved by the Project Manager.

17. The Works to be Completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project

Manager, and complete them by the Intended Completion Date.

18. Approval by the Project Manager

18.1 The Contractor shall provide the Project Manager the calculation notes, the designs, the Specifications and the Drawings depicting temporary and permanent proposed Works, who shall approve them if such Works comply with the Performance Specifications and Conditions, the minimum Specifications, including the Employer's conceptual design and bid accepted, which was submitted by the Contractor (lastly) and the Drawings

18.2 The Contractor shall be responsible for the temporary and permanent works design according to the best engineering practices, codes and construction standards in the Country of the Employer, and should these not exist, with codes and standards internationally accepted as decided by the Project Manager.

18.3 The approval of the Project Manager shall not release the Contractor of any responsibility concerning the design of the Permanent, Preliminary or Temporary Projects, the only responsible of Design is the Contractor, and the approval by the Project Manager shall not make the latter or the Employer responsible for the reviewed Design. The responsibility of the Design is exclusive to the Contractor.

18.4 When it becomes necessary, the Contractor shall obtain the permanent, temporary or modifications designs approval from third parties.

18.5 All blueprints prepared by the Contractor to implement the permanent, temporary or final Works shall be previously approved before using, by the Project Manager. The rule of responsibility established in the GCC 18.3 *above,* also applies with respect to the approval of drawings.

18.6 The Contractor shall deliver the Design to the Project Manager to evaluate whether to approve or not, and the level of design set forth in the PCC and at the time with the number of copies and forms also established therein.

19. ESHS

19.1 The Contractor shall be responsible for all obligations concerning the environment, social and safety and health in the workplace of all activities at the Site, according to the regulations in the Country of the Employer, and

should there be none, according to stipulations of the contract conditions and the Specifications.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the PCC,** the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

22. Access to the Site

22.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

23. Instructions, Inspections and Audits

23.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

23.2 The Contractor shall permit the Bank to inspect their accounts, records and other documents relating to the submission of bids and contract performance and to have them audited by auditors appointed by the Bank. The Contractor shall maintain all documents and records related to the Bank-financed project for seven (7) years after completion of the work. The Contractor shall deliver any document necessary for the investigation of allegations of prohibited practices and require to employees or agents with knowledge of the Bank-financed project to respond to questions from the Bank.

24. Disputes

24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Technical Adjudicator within 14 days of the notification of the Project Manager's decision.

25. Procedures for Dispute

25.1 The Technical Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

25.2 The Technical Adjudicator shall be paid by the hour at the **rate specified in the BDS and PCC,** together with reimbursable expenses of the types specified in the PCC, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Employer. Either party may refer a decision of the Technical Adjudicator to an Arbitrator within 28 days of the Technical Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Technical Adjudicator's decision shall be final and binding.

25.3 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place specified **in the PCC.**

26. Replacement of Technical Adjudicator

26.1 Should the Technical Adjudicator resign or die or should the Employer and the Contractor agree that the Technical Adjudicator is not functioning in accordance with the provisions of the Contract, a new Technical Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Technical Adjudicator shall be designated by the Appointing Authority **designated in the PCC** at the request of either party, within 14 days of receipt of such request.

B. Projects Design

27. Design of Project

27.1 The Contractor shall design the Works. The Project Manager shall approve the Works design. The Contractor shall not be able to initiate the Works (including the Preliminary Works and the Temporary Works) without the approval of the Project Manager. The Project Manager shall be able to reject the works design or part of the design of the works if they do not adhere to the Specifications & Performance Requirements or do not comply with the applicable legislations.

27.2 The Contractor shall rectify the designs or parts of the designs that the Project Manager has rejected. If the Project Manager decides to reject the rectified designs, the Project Manager shall notify the Contractor of his/her intent to terminate the contract for fundamental breach by the Contractor according to Clause 59.2(a). The Contractor shall be able to express dissatisfaction

regarding the Project Manager decision to terminate the Contract according to Clause 24.1.

27.3 For purposes of approving the design, each party has a maximum time of seven (7) days from notice of the other party, to issue its pronouncement, decision, rectification request, rejections, clarification request, acceptance or dissent. If one of the parties does not make any pronouncement within the time mentioned, silence shall be understood as a negative answer and the parties shall proceed by correspondence. The Contractor is responsible to obtain in a timely fashion permits, licenses and consents, including environmental licenses and municipal permits, necessary to implement the temporary installations and the permanent Works that the Contractor designed.

27.4 The Contractor is responsible that the works design complies with the environmental, social and safety and health in the workplace requirements established in the Specifications & Performance Requirements, and if they are not specified, comply with the applicable law.

27.5 To the extent possible and **if specified in the PCC**, according to the regulations in the country of the Employer, the Contractor is responsible to obtain in a timely manner permits, licenses and consents, including environmental licenses and municipal permits necessary to implement temporary facilities and the permanent Works they designed. **The PCC** shall identify those in charge and the scope of this responsibility.

C. Time Control

28. **Program**

28.1 Within the time **stated in the PCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities related to the design, construction and other duties of the Works Technical Supervision.

28.2 The updated Program shall the one reflecting real progress made in each of the activities, and the effects of that progress on the calendar of remaining duties to implement, including any changes in the sequence of activities. It is the Contractor's obligation to maintain the program duly updated and to execute the Works as planned as established therein, especially when it refers to milestones, the Date for Finalizing the Designs, and the Planned Date for Completion.

28.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period **stated in the PCC.** If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the PCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.

28.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

29. Extension of the Intended Completion Date

29.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

29.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or

Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

30. Acceleration

30.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.

30.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.

30.3 Any catch up of the implementation pace due or attributable to delays by the Contractor are not considered Acceleration.

31. Delays Ordered by the Project Manager

31.1 The Project Manager, at its own discretion, shall be able to order the Contractor to delay the start or progress of any activity within the Works. This order must be documented in writing, and must include reasons to justify [it].

32. Management Meetings

32.1 Both the Project Manager and the Contractor shall be able to request the other party to attend management meetings. The objective of such meetings shall be to review aspects related to the Works design, permits, relocations of public services, easements, right of ways, relocation of homes and businesses, vehicle traffic, road safety, environmental measures, programming pending jobs and solving matters raised according to the Early Warning procedures described in Clause 33.

32.2 The Project Manager must maintain a record of matters addressed in the administrative meetings and provide copies to the attendants and the Employer, either at the meeting itself or afterwards, the Project Manager shall decide and communicate in writing to all attendants their duties vis-à-vis the measures that must be taken.

32.3 The Contractor shall make sure that the designers and the Contractor Technical Supervision shall participate at the Management Meetings, when the Project Manager shall inform them.

33. Early Warning

33.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

33.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

D. Quality Control

34. Identifying Defects

34.1 The Contractor is responsible for the quality of the designs and the Works and shall assign quality control duties to the experienced Technical Supervision and sufficient resources to carry out these duties. The Project Manager shall control and observe the Contractor's and its Technical Supervision work and shall notify any lack of control, failure to supervise or defect found. Such an oversight observation shall in no way modify the Contractor's obligations. Consequently, as a result of the observations, the Project Manager may order the Contractor to replace or strengthen the Technical Supervision or any one of its members when these failures are noticed, such as deficiencies, absences or insufficiencies, or lack of expertise, or opportunity when the Works are inspected, The Project Manager shall have unrestrictive access to all trials results of the Contractor, especially those resulting from control and quality assurance done by the Contractor's Technical Supervision.

34.2 The Project Manager will be able to order the Contractor to locate a defect and bring it out to the open and submit to trial any work that the Project Manager considers that may have some defect.

35. Trials

35.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the

Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

36. Correction of Defects

36.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the PCC.** The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

36.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

37. Uncorrected Defects

37.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

E. Cost Control

38. Schedule of Activities

38.1 The Schedule of Activities shows the sequence and duration of the activities in the List of Activities and shall include all the items concerning design, construction, assembly, trials and the startup of services that the Contractor must execute.

38.2 The List of Activities is used to estimate the Contract Price. The Contractor is paid for activities or part of the activities defined in the List of Activities completed to the Project Managers' satisfaction. The Schedule of Activities outlines sequence and duration of the activities in the List of Activities and shall include items concerning the design, construction, assembly, trials and services start up projects that the Contractor shall execute.

38.2 The Contractor is paid for the progress certified by the Project Manager regarding the activities or parts of activities defined in the List of Activities, according to the "Cash Flow Projections" in Clause 41 and approved updates.

39. Changes to the List of Activities

39.1 The List of Activities shall be modified by the Contractor to include the changes to the Program or work procedure introduced by the Contractor on his/her own. Prices in the List of Activities shall not undergo any modification when the Contractor introduces such changes.

40. Payments for Variations

40.1 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to

do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager, before the Variation is ordered.

40.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

40.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

40.5 The Contractor shall not be entitled to additional payment for costs that may have been avoided by giving early warning.

41. Cash Flow Forecast

41.1 When the work Program or Schedule of Activities is updated, the Contractor shall provide the Project Manager an updated forecast of cash flow. Such a projection may include various currencies as they were stipulated in the Contract, converted, as necessary, using the exchange rates outlined in the Contract.

42. Payment Certificates

42.1 The Contractor shall submit to the Project Manager monthly accounts for the estimated value of the works executed according to the activities and sub-activities and milestones progress less the accumulated sums previously confirmed by the Project Manager according to Sub-Clause 42.2.

42.2 The Project Manager shall verify the monthly accounts of the Contractor and verify the amount to be paid.

42.3 The value of the completed works shall be decided by the Project Manager.

42.4 The value of the works implemented shall include the value of milestones, the activities or sub-activities completed which are included in the list of activities.

42.5 The value of the works implemented shall include the estimate of the Variations and the Events to be Remunerated.

42.6 The Project Manager shall be able to exclude any milestone or sub-activity included in a prior certificate or reduce the proportion of any item considering the most recent information.

43. Payments

43.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the quantities certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

43.2 If an amount certified is increased in a later certificate or as a result of an award by the Technical Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

43.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

43.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

44.Compensation Events

44.1 The following shall be Compensation Events:

(a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 21.1.

b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.

(c) The Project Manager orders a delay or does not issue within the 28 days following the submissions by the Contractor of all initial documents or rectifications, the approval of the designs, Drawings, Specifications

documents, or necessary instructions to a timely implementation of Works.

(d) The Project Manager instructs the Contractor to uncover work done, or to carry out additional tests upon work, which is then found to have no Defects.

(e) The Project Manager unreasonably does not approve a subcontract to be let.

(f) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.

(g) Other contractors, public authorities, utilities, or the Employer do not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(h) The advance payment is delayed.

(i) The effects on the Contractor of any of the Employer's Risks.

(j) The Project Manager unreasonably delays issuing a Certificate of Completion

(k) The Contractor demonstrates to have rigorously complied with all the requirements imposed by the environmental or local authorities to obtain permits, licenses and consents within the timelines given to other similar requests.

44.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the

Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

44.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

45. Tax

45.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 47.

46. Currencies

46.1 Where payments are made in currencies other than the currency of the Employer's country **specified in the PCC,** the exchange rates used for calculating the quantities to be paid shall be the exchange rates stated in the Contractor's Bid.

47. Price Adjustment

47.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the PCC.** If so provided, the quantities certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment quantities due in each currency. A separate formula of the type indicated below applies to each Contract currency: $\mathbf{P_c = A_c + B_c\ (Imc/Ioc)}$

where:

Pc is the adjustment factor for the portion of the Contract Price payable in a specific currency "c."

Ac and B_c are coefficients **specified in the PCC,** representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency "c;" and

I_{mc} is the index prevailing at the end of the month being invoiced and I_{oc} is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c.".

47.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index

value shall be deemed to take account of all changes in cost due to fluctuations in costs.

48. Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the PCC** until Completion of the whole of the Works.

48.2 On completion of the whole of the Works and the Project Manager certification of completion of the works according to GCC Sub-Clause 55.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected.

48.3 On completion of the whole Works, the Contractor may substitute retention money with an "on demand" Bank guarantee.

49. Liquidated Damages

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the PCC** for each day that the Completion Date is later than the Intended Completion Date[8]. The total amount of liquidated damages shall not exceed the amount **defined in the SCC.** The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 43.1

50. Bonus

50.1 The Contractor shall be paid a bonus calculated at the rate per calendar day stated **in the PCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are completed according to the GCC Sub-Clause 55.1, although they may not be due to be complete.

51. Advance Payment

51.1 The Employer shall make advance payment to the Contractor of the quantities **stated in the PCC** by the date **stated in the PCC,** against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in quantities and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the quantities repaid by the Contractor. Interest shall not be charged on the advance payment.

51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

51.3 The advance payment shall be repaid by deducting proportionate quantities from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages

52. Securities

52.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the PCC,** by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days later than the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year later than the date of issue of the Completion Certificate in the case of a Performance Bond.

53. Daywork

53.1 If applicable, the Daywork rates in the Contractor's Bid shall be used for small additional quantities of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

53.2 All work to be paid for as Daywork shall be recorded by the Contractor on forms approved by the Project Manager.

Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

53.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms mentioned in Sub-Clause 53.2 in the GCC.

54. Cost of Repairs

54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

F. Finishing the Contract

55. Completion

55.1 The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the work is completed.

56. Taking Over

56.1 The Employer shall take over the Site and the Works within seven (7) days of the Project Manager's issuing a certificate of Completion.

57. Final Account

57.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate..

58. Operating and Maintenance Manuals

58.1 If final updated drawings and/or updated maintenance manuals are required, the Contractor shall deliver them on the dates stipulated **in the PCC**.

58.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the PCC,** or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the PCC** from payments due to the Contractor

59. Termination

59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

59.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

(a) repeatedly, the Project Manager rejects the Works design or parts of the design implemented by the Contractor;

(b) the Project Manager determines that the Contractor's Technical Supervision is absent, deficient or insufficient to build the Works according to the approved designs, drawings and specifications, as long as the Contractor would have warned accordingly and in regard to Sub-Clause 34.1, before the decision;

(c) the Contractor suspends works for 28 days when the current Program does not plan suspensions and has not either been authorized by the Project Manager.;

(d) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;

(e) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(f) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 84 days of the date of the Project Manager's certificate;

(g) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager, that is consistent with the maximum period with which the maximum amount would be reached as established GCC 49.1

(h) the Contractor does not maintain a Security, which is required;

(i) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the PCC**;

(j) if the Contractor, in the judgment of the Employer has engaged in prohibited practices in competing for or in executing the Contract, as established in the Policies of

the Inter-American Development Bank, indicated in Clause 60 of these GCC.

59.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 59.2 above, the Project Manager shall decide whether the breach is fundamental or not.

59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience at any time.

59.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

60. Prohibited Practices

60.1 The Bank requires that all Borrowers (including grant beneficiaries), Executing Agencies and Contracting Agencies, including members of its personnel, as well as all firms, entities and individuals participating in a Bank-financed activity acting as, *inter alia*, bidders, proposers, suppliers, contractors, consultants, sub-contractors, sub-consultants, service providers and concessionaires (including their respective officers, employees and representatives or agents, irrespective of whether the agency is express or implied), adhere to the highest ethical standards, and report to the Bank[9] all suspected acts of Prohibited Practices of which they have knowledge or become aware both, during the bidding process and throughout the negotiation or execution of a contract. Prohibited Practices are: (i) corrupt practices; (ii) fraudulent practices; (iii) coercive practices; (iv) collusive practices; (v) obstructive practices; and (vi) misappropriation of funds. The Bank has established mechanisms to report allegations of Prohibited Practices. Any allegation shall be submitted to the Bank's Office of Institutional Integrity (OII) for the appropriate investigation. The Bank has adopted procedures to sanction those who have incurred in Prohibited Practices. The Bank also entered into an agreement with other International Financial Institutions (IFIs) to mutually recognize debarment decisions.

(a) For the purposes of this provision, the definitions of Prohibited Practices are as follows:

[9] Information on how to present allegations of Prohibited Practices, the application of rules regarding investigation and sanctions process, and the agreement regulating the mutual recognition of sanctions among the IFI's are available on the Bank's web site (www.iadb.org/integrity)

(i) "*corrupt practice*" is the offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

(ii) "*fraudulent practice*" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "*collusive practice*" is an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;

(iv) "*coercive practice*" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) "*obstructive practice*" is

(i) destroying, falsifying, altering or concealing of evidence material to an IDB Group investigation, or making false statements to investigators with the intent to impede an IDB Group investigation;

(ii) threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to an IDB Group investigation or from pursuing the investigation, or

(iii) acts intended to impede the exercise of the IDB Group's contractual rights of audit or inspection provided for under Sub-Clause 60.1(f) below or access to information; and

(vi) "*misappropriation*" is the use of IDB Group financing or resources for an improper or unauthorized purpose, committed either intentionally or through reckless disregard.

(b) If, the Bank determines that at any stage of the procurement or implementation of a contract the Borrower (including beneficiaries of grants), Executing Agencies, Contracting Agencies, any firm, entity or individual participating in a Bank-financed activity as, *inter alia*, bidders, proposers, suppliers, contractors, consultants, personnel, sub-contractors, sub-consultants, goods or service providers, concessionaires, (including

their respective officers, employees and representatives or agents irrespective of whether the attribution is express or implied) engaged in a Prohibited Practice during the award or implementation of the contract, the Bank may:

(i) not finance any proposal to award a contract for works, goods or services, and consulting services;

(ii) suspend disbursement of the operation if it is determined at any stage that an employee, agent or representative of the Borrower, Executing Agency or Employer has engaged in a Prohibited Practice;

(iii) declare Misprocurement and cancel, and/or accelerate repayment of the portion of a loan or grant earmarked for a contract, when there is evidence that the representative of the Borrower, or Beneficiary of a grant, has not taken the adequate remedial measures (including, *inter alia*, providing adequate notice to the Bank upon learning of the Prohibited Practice) within a time period which the Bank considers reasonable;

(iv) issue the firm, entity or individual a reprimand in the form of a formal letter of censure for its behavior;

(v) declare that a firm, entity, or individual is ineligible, either permanently or for a stated period of time, to participate and/or be awarded additional contracts financed with IDB Group resources;

(vi) impose other sanctions that it deems to be appropriate, among others, the restitution of funds and of fines equivalent to the reimbursement for costs associated with investigations and proceedings contemplated in the Sanctions Procedures. Such other sanctions may be imposed in addition to or in lieu of the sanctions referred above (the "abovementioned" sanctions are reprimand and debarment/ineligibility);

(vii) extend the sanctions imposed on any individual, entity or firm that, directly or indirectly, owns or controls a sanctioned entity, is owned or controlled by a sanctioned entity or is the object of common ownership or control with a sanctioned entity, as well as to officials, employees, affiliates or representatives or agents of a sanctioned entity who also own a sanctioned entity and / or exercise control over a sanctioned entity, even if it has

not been concluded that those parties directly incurred in a Prohibited Practice; and/or

(viii) refer the matter to appropriate law enforcement authorities.

(c) The provisions of Sub-clause 3.1 (b) (i) and (ii) shall also be applicable when such parties have been temporarily suspended from eligibility to be awarded additional contracts pending a final outcome of a sanction proceeding, or otherwise.

(d) The imposition of any action to be taken by the Bank pursuant to the provisions referred to above may be made public.

(e) Pursuant to the Agreement for Mutual Enforcement of Debarment Decisions entered into with other IFIs, any firm, entity or individual bidding for or participating in a Bank-financed activity or acting as bidders, proposers, suppliers, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers, concessionaires, personnel of the Borrower (including grant Beneficiaries), Executing Agencies or Contracting Agencies, (including their respective officers, employees, representatives and agents, irrespective of whether the attribution is expressed or implied) may be subject to a sanction. For purposes of this paragraph the term "sanction" shall mean any debarment, conditions on future contracting or any publicly-disclosed action taken in response to a violation of an IFI's applicable framework for addressing allegations of Prohibited Practices.

(f) The Bank requires that all applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, officers or employees, sub-contractors, service providers and concessionaires permit the Bank to inspect accounts, records and other documents relating to the submission of bids and contract performance as well as to have them audited by personnel appointed by the Bank. Applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, sub-contractors, sub-consultants, service providers and concessionaires shall fully assist the Bank with its investigation. The Bank also requires that all applicants, bidders, proposers, suppliers, and their representatives or agents, contractors, consultants, personnel, sub-

contractors, sub-consultants, service providers and concessionaires: (i) maintain all documents and records related to the Bank-financed activities for seven (7) years after completion of the work contemplated in the relevant contract; (ii) deliver any document necessary for the investigation of allegations of Prohibited Practices; and (iii) ensure that employees, representatives or agents of the applicants, bidders, proposers, suppliers and their representatives or agents, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers or concessionaires who have knowledge that the Bank financed the activities to respond to questions from Bank personnel or any properly designated investigator, agent, auditor or consultant relating to the investigation. If the applicant, bidder, supplier and its representative or agent, contractor, consultant, personnel, sub-contractor, sub-consultant, service provider or concessionaire fails to cooperate and/or comply with the Bank's request, or otherwise obstructs the investigation, the Bank, discretionally, may take appropriate action against the applicant bidder, supplier and its agent or representative, contractor, consultant, personnel, sub-contractor, service provider or concessionaire.

(g) If the Borrower procures goods or services, works or consulting services directly from a specialized agency, all provisions regarding Prohibited Practices and to the correspondent sanctions shall apply in their entirety to applicants, bidders, proposers, suppliers and their representatives or agents, contractors, consultants, personnel, sub-contractors, sub-consultants, service providers, and concessionaires, (including their respective officers, employees, and representatives or agents, irrespective of whether the agency is express or implied), or to any other entities that signed contracts with such specialized agency to supply such goods, works, or non-consulting services in connection with the Bank-financed activities. The Bank will retain the right to require the Borrower to invoke remedies such as contract suspension or termination. Specialized agencies shall consult the Bank's list of suspended or debarred firms and individuals. In the event a specialized agency signs a contract or purchase order with a firm or an individual suspended or debarred by the Bank, the Bank will not finance the related expenditures and will apply other remedies as appropriate.

60.2 The Contractor including, in all cases, the respective directors, key personnel, main shareholders, proposed personnel and agents, declare and guarantee:

(a) that they have read and understood the Bank's definition of Prohibited Practices and the applicable sanctions pursuant to the Sanctions Procedures;

(b) that they have not engaged in any Prohibited Practice as set forth herein during the selection, negotiation, adjudication or execution of this contract;

(c) that they have not misrepresented or concealed any material facts during the procurement or contract negotiation processes or during the performance of the contract;

(d) that neither they nor their representatives or agents, sub-contractors, sub-consultants, directors, key personnel or principal shareholders have been declared ineligible to be awarded a contract by the Bank

(e) that all commissions, representative or agents' fees, facilitating payments or revenue-sharing agreements related to the Bank-financed activities have been disclosed; and

(f) that they acknowledge that the breach of any of these representations may constitute a basis for the adoption by the Bank of one or more of the measures set forth in Sub-Clause 60.1 (b).

61. Payment upon Termination

61.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **indicated in the PCC.** Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

61.2 If the Contract is rescinded for convenience of the Contracting Party or for basic breach of Contract by the Contracting Party, the Project Manager shall issue a certificate for the value of the works completed, the materials ordered, the reasonable costs to remove the equipment and the Contractor's personnel repatriation employed exclusively in the Projects, and other costs the Contractor would have incurred to safeguard and

secure the Works, less the advances that the Contractor would have received before the date such a certificate was issued.

62. Property Rights

62.1 If a Contract is terminated for breach, all the Materials at the Works Site, the Plant, the Equipment, the temporary Works and the Works shall be considered the property of the Employer. The designs, drawings, notes and design calculations are the Contractor's property, but when submitting and obtaining the designs approval, the Contractor cedes unlimited use rights of its intellectual property to the Employer. The use of modelling or programming software would imply that the Employer has the right to use the respective program, according to standards governing intellectual and industrial property.

63. Release from Performance

63.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

63.2 Once a Works Termination Certificate was issued, each one of the Parties continues to be responsible for any obligation resulting from the execution of the design and construction. Unless the legislation in the Country of the Employer specifies other timelines: for purposes of determining nature and degree of the Parties responsibilities, it shall be considered that the Contract's following periods in the Contract counted from the time that the Works Termination Certificate was issued are current. shall be considered:

(a) 10 years in the case of structural failures or defects;

(b) 5 years when it is a failure or defects of the construction or installation elements;

(c) 3 years if there were failures or defects affecting the works finishing elements; and

(d) 5 years for failures or defects that cannot be absorbed or equivalent to those pointed out *supra.* These are contract deadlines and additional to any standard in the Country of the Employer establishing responsibilities for the Contractors. They are included in the Contract Price.

64. Payment's Suspension of Bank Loan

64.1 In the event that the Bank suspends the Loan or Credit to the Employer, from which part of the payments to the Contractor are being made:

(a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received the Bank's suspension notice.

(b) If the Contractor has not received sums due it within the 28 days for payment provided for in Sub-Clause 43.1, the Contractor may immediately issue a 14-day termination notice.

65. Eligibility

65.1 The Contractor and its Subcontractors shall have the nationality of a Bank's member country. A Contractor or Subcontractor shall be deemed to have the nationality of a country if it complies with the following requirements:

(a) **An individual** is considered to be a national of a member country of the Bank if he or she meets either of the following requirements:

(i) is a citizen of a member country; or

(ii) has established his/her domicile in a member country as a "bona fide" resident and is legally entitled to work in the country of domicile.

(b) **A company** is considered to have the nationality of a member country if it meets the two following requirements:

(i) is legally constituted or incorporated under the laws of a member country of the Bank; and

(ii) more than fifty percent (50%) of the firm's capital is owned by individuals or firms from member countries of the Bank.

65.2 All members of a JVCA and all subcontractors must meet the nationality criteria set forth above.

65.3 All the Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in any Bank's member country. Goods have their origin in a member country of the Bank if they have been mined, grown, harvested, or produced in a member country of the Bank. A good has been produced when through manufacture, processing or assembly

another commercially recognized article results that differs substantially in its basic characteristics, function or purpose of utility from its parts or components

Section VI. Particular Conditions of Contract (PCC)

<table>
<tr><th colspan="2">A. General</th></tr>
<tr><td>GCC 1.1 (f)</td><td>Completion Date is the date of completion of all the Works, certified by the Project Manager according to Sub-Clause 55.1 of the GCC.
Hospital Completion Date for a hospital is the date of completion of the Works, in that hospital certified by the Project Manager according to Sub-Clause 55.1 of the GCC</td></tr>
<tr><td>GCC 1.1 (p)</td><td>The Hospital Defects Liability Period (HDLP) of each hospital begins at the Hospital Completion Date and lasts 730 days.
All the specifications included in the General Conditions for the Defects Liability Period applied for the HDLP of each hospital.</td></tr>
<tr><td>GCC 1.1 (r)</td><td>The Employer is: Ministry of Science, Energy and Technology (MSET). Jamaica</td></tr>
<tr><td>GCC 1.1 (u) Planned Date to Complete the Works Design</td><td>The Intended Completion Date for the Design is: 20 weeks for Works 1 and 2</td></tr>
<tr><td>GCC 1.1 (v) Planned Projects Completion Date</td><td>The Intended Completion Date for the entire Works is:

Works 1 and 2: 70 weeks

Works 3: 43 weeks</td></tr>
<tr><td>GCC 1.1 (y)</td><td>The Project Manager is:</td></tr>
<tr><td>GCC 1.1 (aa)</td><td>The Sites are located at the following locations:

<table>
<tr><th>Name of Facility</th><th>Address</th><th>Geographical Coordinates</th></tr>
<tr><td>Bustamante Children Hospital</td><td>5 Arthur Wint Drive, Kingston 5,St Andrew, Jamaica</td><td>Latitude: 17º59'58.72", Longitude: 76º46'44.10"</td></tr>
</table>
</td></tr>
</table>

	St. Ann's Bay Hospital	*1 Seville Road, St Ann's Bay, St Ann, Jamaica*	*Latitude: 18º26'12.98", Longitude: 77º12'36.43"*
	Spanish Town Hospital	*Burke Road, Spanish Town, St Catherine, Jamaica*	*Latitude: 17º59'30.89",Longitude: 76º56'51.47"*
	Annotto Bay Hospital	*Annotto Bay, Annotto Bay, St Mary, Jamaica*	*Latitude: 18º16'24.23", Longitude: 76º45'43.52"*
	Port Antonio Hospital	*Naylor's Hill, Port Antonio, Port Antonio, Portland*	*Latitude: 18º10'35.26", Longitude: 76º27'21.66"*
	Port Maria Hospital	*Trinity, Port Maria, Port Maria, St Mary*	*Latitude: 18º21'29.77", Longitude: 76º53'42.19"*
GCC 1.1 (ee)	The Start Date shall be:		
GCC 1.1 (kk)	The Works consist of retrofitting six (6) hospitals in Jamaica to reduce their energy consumption and GHG emissions. The Contract is for the following; Works 1**: Roof-mounted Solar PV systems** Engineering, Procurement, Construction, and Initial Operations, and Maintenance of Rooftop Solar PV at six hospitals to reach the Minimum Capacity included in Table VII.1. The bidders must offer a lump sum for the complete design and build of the PV system at each hospital. **Works 2: Air conditioning upgrade** Upgrading of existing air conditioning systems included in table VII.2 with energy efficient air conditioning systems. **Works 3: Lighting Upgrade**		

	Replacement of existing lamps included in Section VII A. 1.5, particularly table VII.3, rewiring and installing devices included in table VII.3 of the Bidding Document. Upgrading of existing lamps included in Section A1.5 with energy efficient lamps. Lighting retrofit (LED, control based on occupancy and daylight sensing).
GCC 2.2	The Works should **not** be completed by sections.
GCC 2.3	The documents comprising the Contract shall be interpreted in the following order of priority: (a) Agreement (b) Approved Designs by the Employer (c) Specifications and Performance Conditions (RFB Section VII) and Schedule of Payments (RFB Section VIII) (d) Letter of Acceptance, (e) Bid and the following documents: - Supervision and Quality Assurance Guide (SQA) - Guide on the work program (GWP) - Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans (ESHS- MSIP) - Environmental, Social, Safety and Health in the Workplace Code of Conduct. (f) Particular Conditions of Contract, (g) General Conditions of Contract,
GCC 3.1	The language used to draw the Contract document must be: English The law governing the Contract is: Jamaica
GCC 8.1	List of Other Contractors; Not Applicable.
GCC 9.1	Key Personnel: The names of the following professionals must be inserted at the Contract signature: • Project Administrator • Contract Manager

	• One Principal Electrical Engineers • One Electrical Engineer • One (1) Principal Mechanical Engineer
GCC 9.2	**Code of Conduct (ESHS)** The following is inserted at the end of GCC 9.2: "The reasons to remove a person include behavior which breaches the Code of Conduct (ESHS) (e.g. spreading communicable diseases, sexual harassment, gender based violence (GBV), sexual exploitation or abuse illicit activity or crime)."
GCC 13.1	Minimum insurance coverage and deductibles shall be: (a) for loss or damage to the Works, Plant and Materials: USD 10 million (USD 50,000 maximum deductible). (b) For loss or damage to Equipment: USD 5 million (USD 25,000 maximum deductible). (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract: USD 10 million (USD 50,000 maximum deductible). (d) for personal injury or death: (i) of the Contractor's employees: USD 2 million (USD 2000 deductible per event). (ii) of other people: USD 2 million (USD 2000 deductible per event). (e) design professional risks for an amount no less than 20% of the contract Price
GCC 14.1	Site Investigation Reports are mentioned in Section VII. Specifications & Performance Requirements C 1.5 Information provided by the Employer and included in Annex VII,2 The Employer does not certify the representation of veracity or sufficiency of the information delivered in the bidding document, and particularly about the information attached and included in Annex VII.2 (see GCC 12.3).
GCC 16.1 and 16.2	**ESHS Management Strategies and Implementation Plans**

	The following is inserted as a new sub-clause 16.2: "**16.2** The Contractor shall not carry out any Works, including mobilization and/or pre-construction activities (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits), unless the Project Manager is satisfied that appropriate measures are in place to address environmental, social, health and safety risks and impacts. At a minimum, the Contractor shall apply the Management Strategies and Implementation Plans and Code of Conduct, submitted as part of the Bid and agreed as part of the Contract. The Contractor shall submit, on a continuing basis, for the Project Manager's prior approval, such supplementary Management Strategies and Implementation Plans as are necessary to manage the ESHS risks and impacts of ongoing works. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The C-ESMP shall be approved prior to the commencement of construction activities (e.g. excavation, earth works, bridge and structure works, stream and road diversions, quarrying or extraction of materials, concrete batching and asphalt manufacture). The approved C-ESMP shall be reviewed, periodically (but not less than every six (6) months), and updated in a timely manner, as required, by the Contractor to ensure that it contains measures appropriate to the Works activities to be undertaken. The updated C-ESMP shall be subject to prior approval by the Project Manager."
GCC 18.6	The design level required by the Employer for Works 2 is: according to the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards 180 and 211. Drawings and specifications should meet requirements for the procurement of energy efficiency and renewable energy equipment. Drawings and specifications should be to the level required for proper project implementation. Delivery is done within the period established by PCC GCC 1.1 (u) above.
GCC 19.1	As established in Section IV. Bidding Forms, the Environmental and Social Management Plan (ESMP) is to be submitted by the Contractor for the approval of the Employer before the start of the works and proceeding with purchase orders. This ESMP must include a labor assessment to identify measures to assess, prevent, mitigate and continuously monitor any Environmental as well as Labor and Working Conditions risks and impacts to the environment and workers directly engaged by the contractor, subcontractors and primary suppliers of polysilicon solar panels. If the assessment identifies inadequate labor and working conditions as defined by the ILO Core Labor Standards in any of the Contractor's subcontractors and primary suppliers of polysilicon solar panels that cannot be avoided or mitigated,

	the Contractor will shift its primary suppliers to suppliers that can demonstrate adequate Labor and Working Conditions and comply with the specifications of the technical offer. The Employer reserves the right to approve these changes based on the documentation provided and its own analysis. The Contractor shall not carry out any Works, including retrofitting and deep retrofitting activities unless the Project Manager is satisfied that appropriate measures are in place to address environmental, social, health and safety risks and impacts. At a minimum, the Contractor shall apply the strategies in the Environmental and Social Management Plan (ESMP) and Code of Conduct, submitted as part of the Bid and agreed as part of the Contract. The Contractor shall submit, on a continuing basis, for the Project Manager's prior approval, such supplementary Management Strategies and Implementation Plans as are necessary to manage the ESHS risks and impacts of ongoing works. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The C-ESMP shall be approved prior to the commencement of retrofitting and deep retrofitting activities The approved C-ESMP shall be reviewed, periodically (but not less than every six (6) months), and updated in a timely manner, as required, by the Contractor to ensure that it contains measures appropriate to the Works activities to be undertaken. The updated C-ESMP shall be subject to prior approval by the Project Manager."
GCC 21.1	The Site Possession Date shall be: Since the Start Date PCC GCC 1.1 (ee) to the date of Possession of the Site (PCC GCC 21.1), the Contractor may enter the project sites for inspection, testing and trials as many times as required, having to notify the Employer one day in advance of each visit requested.
GCC 25.2	Fees and types of reimbursable expenses to be paid to the Technical Adjudicator: To be included at contract signing stage.
GCC 25.3	Any disputes arising out of the contract, which cannot be amicably settled between the parties, shall be referred to arbitration in accordance with the: "United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules: Sub-Clause 25.3—Any dispute, controversy, or claim arising out of or relating to this Contract, or breach, termination, or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force." The place of arbitration shall be: **Kingston, Jamaica.**
GCC 26.1	Appointing Authority for the Technical Adjudicator: At contract signature

B. Works Design	
GCC 27.5	The requirements for the approval of permits, licenses and consents, including the environmental licenses and municipal permits must be met by the Contractor: Yes
C. Time Control	
GCC 28.1	The Contractor shall submit for approval by the Project Manager all the Forms defined in the BDS ITB 17.5 and a Program for each Works within 21 days from the date of the Letter of Acceptance.
GCC 28.2	**ESHS Reporting** Inserted at the end of GCC 28.2: "In addition to the progress report, the Contractor shall also provide a report on the Environmental, Social, Health and Safety (ESHS) metrics. In addition to those reports, the Contractor shall also provide immediate notification to the Project Manager of incidents in the following categories. Full details of such incidents shall be provided to the Project Manager within the timeframe agreed with the Project Manager. (a) confirmed or likely violation of any law or international agreement; (b) any fatality or serious (lost time) injury; (c) significant adverse effects or damage to private property (e.g. vehicle accident, damage from fly rock, working beyond the boundary) (d) major pollution of drinking water aquifer or damage or destruction of rare or endangered habitat (including protected areas) or species; or any allegation of gender-based violence (GBV), sexual exploitation or abuse, sexual harassment or sexual misbehavior, rape, sexual assault, child abuse or defilement, or other violations involving children.
GCC 28.3	The period between Program updates is 14 days. The amount to be withheld for late submission of an updated Program is: USD 1,000.00 per day.
D. Quality Control	
GCC 36.1	The Hospital Defects Liability Period of each hospital begins at the Hospital Completion Date and lasts 730 days.

E. Cost Control	
GCC38	38.1 There aren´t Schedule of Activities and List of Activities included in this RFB. The paragraph GCC 38.2 is substituted with the following: 38.2 The Contractor is paid for the progress certified by the Project Manager defined in Section VIII Schedule of Payments.
GCC 39	There is no List of Activities in this RFB, therefore the paragraph GCC 39.1 is not applicable.
GCC 42	The GCC 42.1 is modified as follows: 42.1 During the Design and Build, when the condition to pay of each milestone of the tables of Section VIII Schedule of Payments is reached the Contractor shall submit to the Project Manager an invoice with the amount defined in the Section VIII. Schedule of Payments. During the Defects Liability Period the payments will be quarterly using the Section VIII. Schedule of Payments. The GCC 42.2 is modified as follows: 42.2 The Project Manager shall verify the amount to be paid. The sub-clauses 42.3 to 42. 6 are not applicable.
GCC 46.1	The currency of the Employer's country is: **Jamaican Dollars.**
GCC 47.1	The Contract is not subject to price adjustment in accordance with GCC Clause 47.
GCC 48.1	The proportion of payments retained is: 5 % percent
GCC 49.1	The liquidated damages for the whole of the Works are 5,000.00 US$/per day. The maximum amount of liquidated damages for the whole of the Works is: 10 % of the final Contract Price.
GCC 50.1	Not Applicable.

GCC 51.1	The Advance Payments shall be (adjusted with the bidder´s offer): • 10 % of the Contract Price paid to the Contractor no later than within 10 days as of the Signing of contract upon submission of a Bank Guarantee of Advance Payment Form (See Section X – Contract Forms)
GCC 52.1	The Performance Security amount is: (a) Bank Guarantee: 10 % of the Contract Price. **OR** (b) Performance Bond: 15 % of the Contract Price.
F. Finishing the Contract	
GCC 58.1	The date by which operating, and maintenance manuals of the equipment installed in each hospital are required is before 14 days of the corresponding Hospital Completion Date. The date by which "as built" drawings for each hospital are required is 14 days after the corresponding Hospital Completion date.
GCC 58.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is 1,000 US$/day.
GCC 59.2 (g)	The maximum number of days is 30 days.
GCC 61.1	The percentage to apply to the value of the works not completed is 20 %.
GCC 65.1	The GCC 65.1 paragraph is substituted by the following: 65.1 The Contractor and its Subcontractors shall have the nationality of a Bank's member country or EU as specified in the Section Eligibility. A Contractor or Subcontractor shall be deemed to have the nationality of a country if it complies with the following requirements: The rest of the paragraph remains unchanged.
GCC 65.3	The GCC 65.3 paragraph is substituted by the following: All the Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in any Bank's member country or EU as specified in the Section Eligibility. Goods have their origin in a member country of the Bank if they have been mined, grown, harvested, or produced in a member country of the Bank. A good has been produced when through manufacture, processing or assembly another commercially recognized article results that differs substantially in its basic characteristics, function or purpose of utility from its parts or components.

Section VII. Specifications & Performance Requirements

A. Scope of Works

1. Project Description

1.1 Background

This current project is part of the Energy Management and Efficiency Programme (EMEP) managed by the Ministry of Science, Energy and Technology (MSET), on behalf of the Government of Jamaica (GOJ), The EMEP promotes energy efficiency and conservation as one approach to bring down Jamaica's fuel bill. The general objective of this Programme is to promote energy efficiency in government facilities and fuel conservation in road transportation by contributing to the avoidance of fuel imports.

The GOJ is benefiting from a loan financing from the IDB and Japan International Cooperation Agency (JICA) in the amount of US$ 30 Million and grant support from the European Union Caribbean Investment Facility (EU-CIF) in the amount of US$ 10 Million, to promote energy efficiency and conservation in Jamaica by reducing electricity consumption in public facilities, improving traffic flows in congested road corridors in the Kingston Metropolitan Region, and enhancing the capacity of MSET to improve electricity sector planning.

1.2 The project

The present component of the Programme is focusing on retrofitting six (6) hospitals in Jamaica to reduce their energy consumption and GHG emissions.

The project consists of three (3) Works that are describe below. The design and build of the project will be a "sole responsibility" framework during the entire project.

Contractor shall perform, supply or cause to be supplied all equipment, materials, labor, services, supervision, testing devices, drawings, calculations, specifications, operation and maintenance for the first year of the Hospital Defects Liability Period (HDLP) and maintenance during the second year of the HDLP at each hospital, and manuals required for the Project.

Professional engineers registered or licensed in the jurisdiction where the Project will be constructed shall sign and seal all documents required for submittal to any applicable legal authority. Contractor shall provide a complete and functional Project up to the Point of Interconnection (POI).

The Project will be awarded to the bidder that satisfies all the requirements specified in this RFB and offer in the Letter of Bid the least Grand Total of the table Grand Summary, sum of the Contract Prices for all the Works.

For the design and build of the Works, operation and maintenance in each hospital the Contractor will receive the payments indicated for each Works in Section VIII Schedule of Payments. No additional amount shall be paid to the Contractor.

1.3 Works 1

Contractor's Scope of Works 1 is to design, procure, permit, construct, interconnect, commission, startup, operate and maintain a turnkey solar PV built to the capacity as indicated in table VII.1 below and meets commissioning and testing requirements identified by Contracting Agency.

Minimum Capacity

Table VII.1

Hospital	PV System Size (kWp)
Annotto Bay Hospital	61
Bustamante Children's Hospital	27
Port Antonio Hospital	160
Port Maria Hospital	73
St. Ann's Bay Hospital	750
Spanish Town Hospital	260

The areas that must be used to install at each hospital the PV systems are included in the table VII.1.1 and Annex VII.2.

Table VII.1.1

Hospital	Building	Roof Type	Estimated Available Rooftop Space (m^2)
Annotto Bay Hospital	Laundry	Pitched Roof	24
	Male Surgical Wards	Pitched Roof	205
	Female Surgical Wards	Pitched Roof	205
		Total	**434**
Bustamante Children's Hospital	Day Care Centre	Flat Roof	201
		Total	**201**
Port Antonio Hospital	Laboratory/X-Ray	Flat Roof	160
	A&E	Flat Roof	169
	Male Surgical Ward	Flat Roof	194
	Female Surgical Ward	Flat Roof	323
	Maternity Ward	Flat Roof	221

	Outpatient/Pharmacy	Flat Roof	61
		Total	**1,128**
Port Maria Hospital	Operating Theatre	Flat Roof	111
	Accident & Emergency and Wards Buildings (Slab Section)	Flat Roof	303
	Clinic/Health Centre	Pitched Roof	101
		Total	**505**
St. Ann's Bay Hospital	Operating Theatre	Flat Roof	672
	X-Ray	Flat Roof	426
	Kaiser Ward/Pharmacy/Administration	Flat Roof	835
	Maternity/Paediatrics	Flat Roof	1,514
	A&E/Outpatient	Flat Roof	1,763
	Laundry	Flat Roof	542
	Female Medical Ward	Pitched Roof	144
	PROMAC	Flat Roof	221
		Total	**6,117**
Spanish Town Hospital	King of Spain	Flat Roof	229
	Ward 1	Flat Roof	367
	Ward 2	Pitched Roof	172
	Ward 3 & 5	Pitched Roof	172
	Renal	Flat Roof	253
	Administration /Nurse/Matron Office	Flat Roof	260
	Paediatrics	Pitched Roof	172
	Ward 4 & 6	Pitched Roof	172
	Stores/Future Kitchen (Gable Section)	Gable	144
		Total	**1,941**

According to ITB 8.1, bidders are encouraged to visit all sites and review all the areas included in table VII.1 and Annex VII.2. before presenting their bids.

Contractor shall evaluate the areas included in table VII.1.1 and Annex VII.2. and determine their structural adequacy and all other required conditions to install the solar PV systems and associated components.

Contractor shall design all aspects of the Project to meet the minimum Design Life of 15 years for all Solar PV Systems.

PV Modules shall have a minimum 25-year manufacturer's warranty covering product performance that incorporates a linear degradation guarantee with peak power rating at year 25 not less than 80% of the original peak power rating identified on the product nameplate. Inverters shall have a California Energy Commission-weighted efficiency of at least 97.5%.

The bidders must offer a lump sum for the complete design, build operation and maintenance of the project.

1.4 Works 2

Contractor's Scope of Work 2 is to design, supply, installation, and initial operation & maintenance of inverter-based air conditioning units at the six hospitals replacing the non-inverter-based units included in table VII.2 below.

Table VII.2

Capacity of Unit (BTU/h)	Non-inverter units
Spanish Town Hospital	
9,000	13
12,000	14
18,00	11
24,000	7
36,000	10
Annotto Bay Hospital	
12,000	4
18,000	1
Port Antonio Hospital	
18,000	2
St. Ann's Bay Hospital	
12,000	15
18,000	3
24,000	1
36,000	1
Bustamante Children Hospital	
9,000	2
12,000	4
18,000	10
24,000	32
30,000	12
32,000	1

All the air conditioning units must comply with Minimum Seasonal Energy Efficiency Ratio (SEER) indicated below.

SEER shall be not less than 14.0 for unit smaller than 6 kW (20,000 Btu/h), and not less than 15.0 for unit 6 kW (20,000 Btu/h) and larger.

The bidders must offer a lump sum for the complete design, build, operate and maintenance of the project at each hospital.

Price for Works 2 at each hospital = lump sum for Works 2 at each hospital

The Contract Price for Works 2 will be the sum of the Prices for Works 2 at each hospital

1.5 Works 3

Contractor's Scope of Works 3 is to design, supply, installation, and initial maintenance of LED lighting and lighting control systems at the six hospitals re-wiring and installing the devices included in table VII.3 below.

Table VII.3

	Fixture Description	Fixture Type	Quantity
Annotto Bay Hopsital	4' Strip - 1-lamp	Fluorescent	30
	4' Strip - 2-lamp	Fluorescent	262
	Metal Halide	HID pole mounted	1
	Occupancy control devices	Occupancy sensor	37

	Fixture Description	Lamp Type	Quantity
Port Antonio Hospital	2' Strip - 1-lamp	Fluorescent	17
	2' Strip - 2-lamp	Fluorescent	19
	2x4 Troffer Lensed	Fluorescent	2
	4' Strip - 1-lamp	Fluorescent	8
	4' Strip - 3-lamp	Fluorescent	6
	4' Strip - 2-lamp	Fluorescent	120
	CFL	CFL	45

	Incandescent	Incandescent	1
	Occupancy control devices	Occupancy sensor	26

	Fixture Description	Fixture Type	Quantity
St. Ann's Bay Hospital	2’ Strip - 1-lamp	Fluorescent	0
	2’ Strip - 2-lamp	Fluorescent	0
	2x3 Troffer Lensed	Fluorescent	0
	2x4 Troffer Lensed	Fluorescent	0
	4' Strip - 1-lamp	Fluorescent	0
	4' Strip - 2-lamp	Fluorescent	0
	CFL	CFL	60
	Exterior Post Lamp - CFL	CFL	0
	Exterior Street Lamp	Metal Halide	0
	Exterior Wall Pack	Metal Halide	6
	Occupancy control devices	Occupancy sensor	90

	Fixture Description	Lamp Type	Quantity
Bustamante Children Hospital	2' Strip - 1-lamp	Fluorescent	10
	2' Strip - 2-lamp	Fluorescent	2
	2x2 Troffer Lensed	Fluorescent	13
	2x4 Troffer Lensed (3-Lamp)	Fluorescent	31
	2x4 Troffer Lensed (4-Lamp)	Fluorescent	29

	2x4 Troffer Lensed (6-Lamp)	Fluorescent	16
	4' Strip - 1-lamp	Fluorescent	114
	4' Strip - 2-lamp	Fluorescent	160
	Recessed Can - CFL	CFL	4
	Recessed Can - Incan	Incandescent	14
	Wall pack - Incan	Incandescent	19
	Total		**412**

	Fixture Description	**Lamp Type**	**Quantity**
Port Maria Hospital	2' Strip - 1-lamp	Fluorescent	3
	4' Strip - 2-lamp	Fluorescent	14
	Wallpack - LPS	Wallpack - LPS	1
	Occupancy control devices	Occupancy sensor	30

	Fixture Description	**Lamp Type**	**Quantity**
Spanish Town Hospital	2' Strip - 1-lamp	Fluorescent	1
	2' Strip - 2-lamp	Fluorescent	10
	2x2 Troffer Lensed	Fluorescent	0
	2x4 Troffer Lensed	Fluorescent	4
	4' Strip - 1-lamp	Fluorescent	10

	4' Strip - 2-lamp	Fluorescent	46
	4' Strip - 3-lamp	Fluorescent	0
	CFL	CFL	35
	Occupancy control devices	Occupancy sensor	93

- Scope of works and minimum standards for lighting
  - Existing fluorescent ballast shall be removed from existing fixtures
  - Existing lamps shall be disposed of following best practices and regulations in Jamaica
  - New LED lighting equipment shall minimally maintain illumination levels as defined in the energy audits
  - New LED lamps shall be DLC-qualified & ENERGY STAR® or Underwriters Laboratory (UL) certified
  - LED light fixtures shall be Reduction of Hazardous Substances (RoHS)-compliant
  - LED lamps shall have a minimum lamp life expectancy of 50,000 hours and maintain lumen output according to reference standards Illuminating Engineering Society of North
  - LED drivers shall include the following features unless otherwise indicated:
    - Minimum efficiency: 85% at full load.
    - Minimum Operating Ambient Temperature: -20˚ C. (-4˚ F.)
    - Input Voltage: 120 - 240V (±10%) at 50 Hz.
    - Integral short circuit, open circuit, and overload protection.
    - Power Factor: ≥ 0.95.
    - Total Harmonic Distortion: ≤ 20%.
    - Comply with FCC 47 CFR Part 15.
  - LED modules shall include the following features unless otherwise indicated:
    - Comply with IES LM-79 and LM-80 requirements.
    - Minimum CRI: 80 or higher. Minimum Color Fidelity Index (IES Rf): 80 or higher.
    - Color temperature between 3500K - 5000K
    - Minimum Rated Life: 50,000 hours per IES L70, LM-80 or IES TM-21
  - In surgery/operating rooms, designer shall coordinate LED color temperature with surgical light. LED color temperature shall be consistent with that of surgical light
  - Housing, LED driver, and LED module shall be products of the same manufacturer
  - LED drivers, modules, and reflector shall be accessible, serviceable, and replaceable from below the ceiling
  - LED fixtures shall be approved by hospital building operators
  - Installation and fixation shall be done according to manufacturer specifications and best practices
  - Works shall also meet the National Building Code for Jamaica

- Scope of works and minimum standards for occupancy sensors.
    - Lighting sensors shall meet code requirements/restrictions for lighting control in respective space types
    - Sensors shall be compatible with existing or newly installed LED lighting equipment
    - Sensor mounting location (ceiling or wall mounted) shall be agreed upon with hospital building operations staff
    - Sensors to be wired wherever possible
    - Wall- or ceiling-mounting, solid-state units with a power supply and relay unit, suitable for the environmental conditions in which installed.
        - Operation: Unless otherwise indicated, turn lights on when covered area is occupied and off when unoccupied; with a 1 to 15 minute adjustable time delay for turning lights off.
        - Sensor Output: Contacts rated to operate the connected relay. Sensor shall be powered from the relay unit.
        - Relay Unit: Dry contacts rated for 20A ballast load at 110 volt and 277 volt, for 13A tungsten at 110 volt, and for 1 hp at 110 volt.
        - Mounting:
            - Sensor: Suitable for mounting in any position on a standard outlet box.
            - Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
        - Indicator: LED, to show when motion is being detected during testing and normal operation of the sensor.
        - Bypass Switch: Override the on function in case of sensor failure.
        - Manual/automatic selector switch.
    - Detection Coverage: Shall be sufficient to provide coverage as required by sensor locations
    - Final sensor equipment and design to be agreed upon by hospital building operations staff
    - The winning firm will be responsible of setting control parameters including time delay setting and calibrating operations
- Control based on occupancy and daylight sensing.

The bidders must offer a lump sum for the complete design and build of the project at each hospital.

Price for Works 3 at each hospital = lump sum for Works 3 at each hospital.

The Contract Price for Works 3 will be the sum of the Prices for works 3 at each hospital.

2. General Specifications

2.1 Introduction

Bidders are advised to carry out a thorough review of the all the Specifications contained in the bidding documents, in order to verify their compliance with current legislation and the Works.

Bidders must request any clarification they deem necessary, prior to the submission of bids within the deadline established for this purpose, since once the bids are opened no claims of any kind will be accepted, including those that may be based on any inconsistency within the Specifications and with the rest of the bidding documents. If there is any inconsistency, the specification more favorable to the Employer will prevail.

Any additional work, expansion, and preparation of studies that the bidder considers necessary for the correct execution of the Works will be the sole and exclusive responsibility of the Contractor and will not give rise to any additional payment or claim to the quoted price.

All the assets and materials to include in the Projects must be new, unused, state of the art models and include recent improvements made to design and materials. Wherever a make of a product is specified, it should always be qualified with the terms “or equivalent”.

The functional efficiency and the performance specifications may define the characteristics, nature and the completed project performance and any limitation that the Employer would wish to impose.

According to the definition of the Specifications (see GCC 1.1 (cc)) if the Contractor applies specifications greater and/or better than those established in the bidding documents, both in quality and/or scope, to comply with the provisions of this RFQ, said increase or improvement will not give rise to any payment or claim additional to payments defined in this RFB.

The Contractor shall provide the Project Manager with all certificates, test reports, inspection reports, manufacturer's instructions, manufacturer's field reports, project record documents, operation and maintenance data, warranties and bonds before project closeout and final payment.

2.2 Scope of Works 1 and 2

2.2.1 Contractor shall engineer, design, construct, operate and maintain the Project in accordance with the Technical Specifications.

2.2.2 Contractor’s Scope of Work is to engineer, design, procure, permit, construct, interconnect, commission, startup, operate and maintain and test a turnkey solar PV and Energy Efficient Air Conditioning Systems which is built to the capacity as indicated in Section VII 1. Project Description and meets commissioning and testing requirements identified by Contracting Agency.

2.2.3 Contractor shall design all aspects of the Project to meet the minimum Design Life of 15 years for all systems (Solar PV System and Energy Efficient Air Conditioning Systems).

2.2.4 It is the Contractor's sole responsibility to ensure that all aspects of Project design and construction comply with all local code requirements and all industry codes and standards. This includes, but is not limited to, the list specified in Annex VII.1.

2.2.5 Contractor shall perform, supply or cause to be supplied all equipment, materials, labor, services, supervision, testing devices, drawings, calculations, specifications, and manuals required for the Project.

2.2.6 Major components of the Scope of Work include:

a. Project management including, but not limited to:

- Project administration
- Scheduling
- Quality control
- Weekly and monthly progress reporting
- Coordination of Contractor's personnel and subcontractors
- Compliance with applicable permits and standard
- Operation and Maintenance

b. Engineering including, but not limited to, detailed design of:

- Solar PV design with Year 1 production estimate prepared using standard industry design software.
- Energy Efficient Air Conditioning System
- Electrical systems
- Control and instrument systems
- Civil and structural systems
- HVAC systems (if necessary, for equipment cooling)
- Mechanical systems
- Calculations, analyses and third-party review, where required, of all engineering documents
- Comprehensive design manual including all engineering drawings, calculations and analyses performed
- Comprehensive operation and maintenance manuals for the Project

c. Procurement of all equipment, materials and services, including but not limited to:

- Air Conditioning Equipment and Accessories for Installation and Commissioning
- Procurement of all materials, including but not limited to, PV Modules, PV Module mounting structures, inverters, combiner boxes, disconnect switches, current transducers, potential transducers, fuses, meters, meteorological stations, DAS equipment, foundations and foundation materials, hardware and fasteners, conduits and raceways, conductors, junction boxes, bonding and grounding equipment, and all related materials

- Procurement of all services including, but not limited to, subcontracted services required to prepare, install, construct, connect and test equipment at the site, if applicable.
- Development of specifications and bid packages for subcontracted work
- Bid evaluation and selection for subcontracted work
- QA/QC material inspections
- Obtaining all datasheets, relevant technical notes, installation, operations and maintenance manuals for all Project equipment
- Priced list of recommended Operating Spare Parts with manufacturer-recommended quantities based on the quantity installed at the Project Site in accordance with Section 11 of Annex VII.1.

d. Construction of all Project facilities including, but not limited to:

- Securing and controlling the Site and Site access
- Construction management and supervision
- Construction labour and training
- Construction and installation of all Project equipment
- Safety program
- Quality program
- Construction equipment
- Construction utilities such as electrical power, water and telecommunications
- Parking for construction crews
- Construction, maintenance, removal and restoration of all temporary construction needs such as material laydown and staging areas
- Construction lighting
- Construction sanitary facilities
- Surveying
- All consumables
- Site Clean-up

e. Inspection, testing and commissioning activities including, but not limited to:

- Commissioning as specified by Contracting Agency
- Acceptance testing as specified by Contracting Agency
- Energy performance testing as specified by Contracting Agency
- All personnel and test equipment required to perform the inspection, testing and commissioning activities

f. Defects liability for first two years after commissioning as outlined in Section 11 of Annex VII.1.

g. Contractor shall be responsible for disposal of all waste material from the Work.

2.2.7 Works design requirements will include:

- Detailed review of the Investment Grade Audits (IGA) for each of the six (6) facilities.
- Detailed review of existing installation (including the presence of asbestos) required for project procurement and implementation.
- Design of the Project including drawings and specifications.

- Asbestos remedial and/or abatement works may require approvals from the National Environment and Planning Agency (NEPA).

2.2.8 As part of the works requirements in each hospital, the Contractor will be required to:

- Safely handle, manage and transport/dispose of all waste, inclusive of hazardous waste (such as mercury, ban refrigerants from retired A.C. units and asbestos) that may be encountered during construction. A waste management plan should also be signed and adhered to by subcontractors.
- Supply, transportation, and installation of new energy efficiency equipment (replacement of existing inefficient equipment).
- Test, pre-commission and commission energy efficiency (EE) equipment to enable the facilities to achieve predetermined savings in energy consumption.
- Operate all the equipment during the first year of the Hospital Defects Liability Period.
- Provide operations and maintenance manuals and train the operators and maintenance managers at the hospitals on the effective operations and maintenance of the EE equipment installed.

2.3 Climatic Conditions

Below are the prevailing environmental conditions, typical of Jamaica, which may be relevant to the Contractor's work:

- Latitude: 17 Degrees
- Longitude: 80 Degrees
- Jamaica's electrical power is produced by diesel (bunker oil) generators. Small hydroelectric plants are located on the White River, Rio Bueno, Morant River, Black River (Maggotty) and Roaring River.
- In November 2008, Jamaica launched its E10 blended gasoline to motorists.
- Electrical Supply: 415V 3 phase, 220V/110 V, 50 Hz
- Mean Temperature: 83 °F (28 °C)
- Mean relative humidity: 80% morning, 71% evening
- Roughly 12 hours between sunrise and sunset
- Indoor Conditions: 74-76°F, 40-60% Relative Humidity
- Proximity to the sea varies; approximately 0 - 3 kilometers

Further climatological information can be obtained from the Meteorological Office in Kingston and Sangster International Airport.

The Contractor is reminded that this information on climatic conditions is provided only as a guide, and the Contracting Agency accepts no responsibility as to the accuracy or interpretation of the information given.

Bidders are required to obtain weather data for a specific location indicating temperature and relative humidity profiles measured hourly over a period to facilitate the accurate modeling of the cooling requirement as well as the projected energy consumption.

2.4 Technical Requirements

h. Electricity Supply

The Jamaica Public Service Company (JPS) is primarily responsible for the generation, transmission and distribution of electricity and also purchases power from the Jamaica Private Power Corporation (JPPC) and the Jamaica Energy Partners (JEP), two Independent Power producers and several small co-generators. The supplies available are as follows:

Secondary Metered Supplies:
- Single Phase, 110/220 Volts. 50 Hz.
- Three Phase, 220 Volts, Delta, 50 Hz.
- Three Phase, 240/415 Volts, Wye (Star), 50 Hz.

Primary Metered Supplies:
These are also available depending on location and include:
- Three Phase, 13.8/23.9 kV, Wye (Star), 50 Hz.
- Three Phase, 13.8 kV, Delta, 50 Hz.
- Three Phase, 11.95 kV, Wye (Star), 50 Hz.

Electrical Requirements

Item	Electrical Requirement	Minimum Specification
1.	Voltage Compatible	110V, 220V or 415V (AC)
2.	Frequency Compatible	50 Hz

2.5 List of Facilities with Approximate Energy Costs

	Hospitals	Location (Parishes)	Surface Area (m^2)	Energy Cost (USD, 2018)
1	Bustamante Children Hospital	St Andrew	14,448	506,000
2	St. Ann's Bay Hospital	St Ann	12,675	468,000

3	Spanish Town Hospital	St Catherine	13,305	403,000
4	Annotto Bay Hospital	St Mary	5,955	158,000
5	Port Antonio Hospital	Port Antonio	4,200	104,000
6	Port Maria Hospital	Port Maria	3,695	73,000

Electricity consumption

October 2021 to September 2022

Hospital	kWh
Annotto Bay Hospital	681,542
Bustamante Children's Hospital	1,601,868
Port Antonio Hospital	498,976
Port Maria Hospital	317,573
St. Ann's Bay Hospital	2,300,165
Spanish Town Hospital	2,137,115
Total	**7,537,239**

B. Codes and Standards

Wherever reference is made in the Contract or later defined by the Contactor and approved by the Project Manager to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Bidding Document, the Contract or defined by the Project Manager.

Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified shall be accepted subject to the Project Manager's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Project Manager at least 28 days prior to the date when the Contractor desires the Project Manager's consent. In the event the Project Manager determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

The Contractor is expected to meet construction, environment, health and safety regulations in effect at the time of project implementation, and in particular the following codes:

1. The Building Code of Jamaica.
2. The NRCA environmental regulatory framework (inclusive of all applicable legislation regulations and standards).
3. The National Occupational Safety and Health regulatory framework (inclusive of all applicable legislation, regulations and standards).
4. JS 21: Jamaican Standard Specification for Electrical Installations.
5. The Jamaica Bureau of Standards, Energy Efficiency Code (EEBC - 90)

C. Contract phases

1. Works 1 and 2

1.1 Phases of the Works

As defined in GCC 1 (kk), Works is all that the Contract requires to design, construct, install, repair if applicable under the Contractor sole responsibility scheme, and deliver to the Contracting Party. The Works must be developed in the following three phases.

1.2 Design

a. General considerations

The Contractor will carry out the Design for the implementation of the Works 1 and 2 at the six Hospitals complying with the Specifications indicated in this bidding document. For the information of the bidders, an Investment Grade Audit (IGA) of each hospital is attached to this RFB.

The Contractor must carry out the necessary basic studies, design and build the Works corresponding to the project, in a comprehensive manner, ranging from preliminary studies to the delivery of the Works, as established in the bidding documents.

The information provided by the Employer is a guide, and the Contractor must carry out studies and surveys of the site for verification as part of the Design Phase.

This phase includes the following subphases:

- Review of the IGA, proposal for environmental and social management plan and studies and surveys to be executed on site.
- Execution of studies and surveys.
- Concept Design (50 % Design Documents)
- Preliminary Design (90 % Design Documents).
- Issued For Construction Design.
- Final Issued for Construction Documents
- Permits, licenses, and certifications.

The development of the Design in subphases has the fundamental purpose of defining with a higher level of precision and detail the scope of the Works that will be required for the implementation of the deep retrofitting of the six hospitals, allowing the Employer to review and approve the products of each subphase, thus preventing the Contractor from advancing in definitions without approval, mitigating the risk of carrying out work that is not later used. Likewise, it is expected that executing the Design in subphases allows obtaining a solution that proposes a project that fulfill the requirements specified in this RFB.

As this is a design and build bid, that includes all the needed studies, it is recommended that, before submitting the offer, the person in charge of the preparation of the offer make a visit to the site to determine the scope of the studies and estimate the amount of them.

All the documents of the Design as well the “as built” will become the property of the Employer once delivered and approved.

For purposes of approving the Design, the Project Manager will have seven (7) days to issue its pronouncement, decision, rectification request, rejections, clarification request, acceptance, or dissent (see GCC 27.3) for each subphase.

Except the subphase b, that should begin at the Start Date, before initiating each phase the Contractor must receive the approval of the previous phase issued by the Project Manager. A timeline of the Design of Works 1 and 2 is included in Annex VII.4, where the time periods to execute each subphase are showed.

b. Review of the IGA, proposal of TOR for environmental and social management plan, studies, and surveys to be executed on site.

The Contractor must visit all the sites and propose all the additional studies and analysis that consider necessary to carry out the project. All specifications of the studies proposed by the Contactor should be checked against Jamaica regulatory requirements, that must be informed in the Review Report of IGA of the six hospitals.

Any payment that the Contractor must make to carry out basic studies must be included in the price proposal.

As part of this subphase the Contractor must prepared Terms of Reference (TOR) of an Environmental and social management plan for the construction of the works, which shall include the environmental management system for the implementation of the plan and the mechanism for dealing with requests, complaints and requests from the patients and/or communities surrounding the project. This plan must be based on the Environmental, Social, Safety and Health in the workplace Management Strategies and Implementation Plans (ESHS- MSIP) approved by the Employer.

The deliverables in this subphase are:

- Reviewed Reports of IGA of the six hospitals
- TOR of Environmental and social management plan
- Proposals of Studies and Surveys Report

These deliverables must be delivered within 7 days as of the Start Date. All documents must be delivered in an editable format and in pdf.

c. Execution of studies and surveys and implementation of the Environmental and social management plan

After the approval by the Project Manager of the deliverables of the previous subphase b, the Contractor must begin with the implementation of the Environmental and social management plan, and the execution of the studies and surveys. The term for all these activities is two weeks including the time for the draft of the deliverables.

The deliverables in this subphase are:

- Report of executed studies and surveys, and implementation of Environmental and social management plan (ESMP).

These deliverables must be delivered within 14 days as of the date of approval of the subphase b. All documents must be delivered in an editable format and in pdf.

d. **Concept Design (50 % Design Documents)**

The documents and plans of the Concept Design must include all the elements that are required for the total understanding of the works to be carried out.

The deliverable in this subphase is:

- Concept Design.

These deliverables must be delivered within 14 days as of the date of approval of the subphase c. All documents must be delivered in an editable format and in pdf.

e. Preliminary Design (90 % Design Documents)

In this subphase the Contractor shall develop the Preliminary Design that will include the Design documents and plans at 90 % of completeness.

The deliverable in this subphase is:

- Preliminary Design.

This Report must be delivered within 7 days as of the approval of the deliverables of the previous subphase.

f. Issued For Construction Design

The Issued for Construction Design shall be understood as the activity of finalizing the project, with all the necessary specifications, drawings, calculations, quantity list, and references, needed for the materialization of the Works, based on the Preliminary Design approved by the Employer.

In this subphase, the documents must be developed into a thorough and precise set of documents. The drawings and specifications should include all the details, dimensions, and notes necessary to communicate the entire design.

The entire Design should be adapted to current regulations, the Specifications, and best practices for design.

The deliverable in this subphase is:

- Set of issued for Construction Documents

The set must be delivered within 7 days as of the approval of the Preliminary Design

The plans must be delivered according to the following:

- One printed set: A3, A2, A1 or A0 will be accepted.
- PDF and in an editable format (DWG or REVIT).

Any other document must be delivered in an editable format and in PDF.

g. Final Issued for Construction Documents

After receiving comments and observations to the deliverables of the set of Issued for Construction Documents, the Contractor will have 7 days to consider the adjustments or modifications requested by the Project Manager to each of the products delivered in the previous subphase to produce the Final Issued for Construction Documents.

The deliverable for this subphase is:

- Set of Final Construction Documents (including Construction Specifications)

The set must be delivered within 7 days as of the approval of the Set of Construction Documents.

The plans must be delivered according to the following:

- One printed set: A3, A2, A1 or A0 will be accepted.
- PDF and in an editable format (DWG or REVIT).

Any other document must be delivered in an editable format and in PDF.

h. Permits, licenses, and certifications

The Contractor must process and obtain, with the competent public institutions, all the documents, consents, permits, licenses and authorizations necessary for authorizing the implementation of the project, prior to starting construction works. For such purposes, it will determine and manage, according to the regulations in force in Jamaica, all the procedures, queries, and formalities that are required.

All the necessary costs for the above will be considered included in the financial offer of the bidder. The Employer will not pay any additional amount of money for the processing and obtaining of the permits, authorizations, licenses and visas, and the Contractor must include all of this in his financial offer (see GCC 27.3).

The Contractor must guarantee that, at the conclusion of the final design, it will have the information and documentation required to start with the processing of the licenses and permits and begin it as soon as possible.

For all the products that require, for their use and full application, an inscription, approval, authorization, approval, license or visa, the product will be considered as not finished nor can it be received in conformity while such approval has not been issued by the competent entities. It is understood that the receipt in accordance with the Final Design assumes that they are duly registered, with full satisfaction of the complete permit procedures, in accordance with Jamaican legislation.

The deliverable in this subphase is:

- Report of all the permits, authorizations, licenses, and visas

They must be delivered within 7 days as of the approval of the deliverables of the previous subphase.

This Design phase begins on the Start Date and ends when the Final Construction Documents and Permits, licenses and certification are approved by the Project Manager who issues the Design Completion Certificate, that enables the construction phase.

1.3 Construction

The construction phase includes mobilization, implantation, all the external works, all the interventions in the six hospitals, including the total installation and commissioning of the equipment and their operational tests.

This phase begins when the Design Completion Certificate is issued by the Project Manager and ends on the Completion Date, when the equipment of the Works begins to function entirely.

1.4 Defects correction, operation, and maintenance

This phase begins on the Completion Date for each hospital, that is the day when the project is received and lasts 730 days, corresponding to the period of responsibility for defects, during which the Contractor must

be in charge of operating and maintaining all the Works during the first year and maintenance during the second year.

The Contractor shall provide the Preventive and Corrective Maintenance Program at least 10 days before the Completion Date of the Works at each hospital.

The activities of the aforementioned program will include a review by the Contractor, at least weekly, of the status of the Works and the correct operation of the equipment.

This phase ends when the Project Manager issues the Hospital Defects Liability Certificate of each hospital.

1.5 Information provided by the Employer

The Employer does not certify the representation of veracity or sufficiency of the information delivered in the bidding document, and particularly about the information attached listed hereinafter and included in Annex VII.2 (see GCC 12.3).

The following documents are attached to the RFQ document:

- Bustamante Children's Hospital – Final Report Version 2
- Port Antonio Hospital – Final Report Version 2
- Annotto Bay Hospital – Final Report Version 2
- Port Maria Hospital – Final Report Version 2
- St. Ann's Bay Hospital – Final Report Version 2
- Spanish Town Hospital – Final Report Version 2
- Risk Evaluation & Environmental and Social Management Plan, An extract from the Environmental Analysis for Jamaica Energy Management and Efficiency Program August 23, 2016 (Revised April 30, 2021)
- Roof Structural Assessment Report for each hospital

2. Works 3

2.1 Phases

As defined in GCC 1 (kk), Works 3 is all that the Contract requires to design, construct, install, repair if applicable under the Contractor sole responsibility scheme, and deliver to the Contracting Party. The Works must be developed in the following phases (a timeline is included in Annex VII.5, where the time periods to execute each phase are showed). The phases of Works 3 for each hospital are the following:

- Submission of Revised/Updated Workplan
- Submission of Designs/Specification for Approval
- Delivery Duty Paid and Storage
- Installation & Tests
- Commissioning
- One year of Operation & Maintenance and Hospital Defects Liability Period
- One year of Maintenance and Hospital Defects Liability Period

Annex VII.1

Scope of Work and Technical Specifications for Rooftop Solar PV Installations and Energy Efficient Air Conditioning Systems

1 Introduction

This document defines the scope of work and technical specifications required for Engineering, Procurement, Construction, and initial Operations and Maintenance of Rooftop Solar PV (Works 1) and Energy Efficient Air Conditioning Systems at six hospitals (Works 2).

Certain subsections within this Annex such as subsection 8.7 (Concrete Equipment Foundations) and subsection 8.8 (Trenches) may not be applicable for some or all sites.

The Project Owner will be The Government of Jamaica (GoJ) with the Project Execution Unit (PEU) being the Ministry of Science, Energy and Technology (MSET) providing project development and project management support as the Contracting Agency. The Rooftop Solar PV and Energy Efficient Air Conditioning Systems will be owned by the MSET and transferred to the hospitals eventually.

2 Works 1 and 2

Subject to the specifications herein, the Works 1 and 2 of the Project scope includes the following facilities:

- All equipment (including PV modules, mounting structures, inverters and related/ancillary equipment) to comprise PV systems with the minimum capacity indicated for each hospital in table VII.1.
- AC collection equipment to combine the output of each inverter and connect to the relevant utility Points of Interconnection.
- Data acquisition systems to allow for online or virtual monitoring.

The purpose of Works 1 is to Design, Procure, Construct, Operate and Maintain Grid Tied Solar Photovoltaic Systems on six hospitals. The aim of which is to obtain the minimum kWp of electricity defined in table VII.1 generated consistent with local utility interconnection and facility's power supply requirements.

Works 1 shall have the minimum total installed DC capacity of kWp of table VII.1, based on the nameplate rating of the PV modules.

Works 2 includes the installation of inverter-based split air conditioning units indicated in table VII.2.

3 Definitions for the Technical Specifications

All defined terms shall have the meaning prescribed to them in the Works Contract, or as defined below:

Term	Definition
AC	Alternating Current
AHJ	Authority Having Jurisdiction (e.g., Government Electrical Regulator)

Term	Definition
API	Application Programming Interface
Applicable Laws	All laws, rules and regulations applicable to the Works in the jurisdiction of Jamaica.
Applicable Standards	Governmental and industry standards and requirements to which the Works shall comply
Array	May describe the entire PV System or a portion of it, representative of all equipment necessary to facilitate PV power generation and delivery of electricity including but not limited to Modules, Racking, Combiner Boxes and all necessary wiring
Combiner Boxes	DC Combiner Boxes including UL listed enclosure, bus work and OCPD required to combine multiple DC source circuits onto a single, larger, set of conductors
Contractor	Engineering, procurement, and construction firm engaged to undertake the Project scope of work
CT	Current transformer
DAS	Data acquisition system
DC	Direct Current
Design Documents	Drawings, technical specifications and calculations prepared and packaged as the design basis for the Works.
Design Life	The required period of performance (without major repairs) of installed components, i.e., 25 years
DWG	Electronic data file format for AutoCAD drawings developed by Autodesk, Inc.
EPC	Engineer, procure, and construct
EER	Energy Efficiency Ratio (EER): The ratio of net cooling capacity is Btu/h to total rate of electricity input in watts under designated operating conditions (Btu hour/Watt).
Good industry Practices	Performance of the Work in a good and workmanlike manner in accordance with internationally accepted professional best practices, methods, techniques, and standards
HVAC	Heating, ventilation and air conditioning
Hz	Hertz
kV	Kilovolts
IEC	International Electrotechnical Commission
IFC	Issued for construction
kW	Kilowatts
kWh	Kilowatt hours
kWp	Kilowatt-peak
Limited Notice to Proceed Date	Date when written notice is given by Contracting Agency to Contractor authorizing Contractor to proceed with the Works in a limited manner as specified by Contracting Agency
LOTO	Lock-out, tag-out
LV	Low voltage, defined as less than 1,000 Volts
MET Station	Meteorological station, consisting of multiple sensors to record environmental conditions

Term	Definition
Module, Modules	Solar Panel(s)
Mounting Structure, Racking	A mechanical assembly of racking members used to support the PV modules and string wiring
MPPT	Maximum power point tracking
MSET	Ministry of Science, Energy and Technology
MV	Medium Voltage, defined as between 1,000 V and 35 kV
NEC	National Electrical Code
OCPD	Overcurrent Protection Device
O&M	Operations and Maintenance
Project Owner	The entity on whose property the solar PV and the air conditioning equipment will be installed and to which the benefits of energy/power generated by said equipment will redound.
Owner	Ministry of Science, Energy and Technology
Contracting Agency	The entity designated by Owner to interface with the Contractor on behalf of Owner on all matters related to the Project (the Project Execution Unit in this case)
PDF	Portable document format, an electronic data file format developed by Adobe Systems Inc.
POI, Point of Interconnection	The Point of Interconnection is the location at which the Project's power system is interconnected with the Utility's facilities. The Point of Interconnection is the physical termination point between the Contractor and the Utility's facilities. Unless otherwise indicated, the Point of Interconnection is the LV terminals provided by the Facility. Where a standby generator is in place for emergency power to entire site, the Point of Interconnection must be on the Utility side of the transfer switch in order to avoid PV inverter and standby generator interactions
PPE	Personal protective equipment
Project	The series of activities and tasks involved in the engineering, procurement, and construction of Energy Efficient Air Conditioning Systems and solar PV systems at the identified sites or the physical outcomes from the undertaking, i.e., the solar PV installations
PV	Photovoltaic
Safety Plan	A written document that describes the process for identifying the physical and health hazards that could harm workers, procedures to prevent accidents, and steps to take when accidents occur.
Scope of Work	A description of the work to be performed by the Contractor, including deliverables to be provided and end products, in order to achieve the objectives of the Project
Site	The specific facility/location at which a solar PV and the Energy Efficient Air Conditioning Systems Project is to be undertaken
SEER	Seasonal Energy Efficiency Ratio (SEER): The ratio of the total cooling output of an air conditioner during its normal annual usage period for cooling in Btu/h divided by total electric energy input in watts during the same period (Btu hour/Watt).

Term	Definition
STC	Standard Test Conditions (1000 W/m2, 25º C module temperature and AM1.5 spectrum)
String	Circuit of PV Modules connected in series
Technical Specifications	The set of engineering and functional requirements of the PV and the air conditioning system and their individual components that must be adhered to for system design, procurement, and installation
Test, Testing	Any visual, mechanical, electrical, or functional inspection or examination required to confirm Project equipment and/or systems have been installed in accordance with Technical Specifications, Good Industry Practices, Applicable Laws, Applicable Standards and manufacturer recommendations
Work, Works	The activities and tasks required to achieve the objectives of the Project
Works Contract	Contract between the Contracting Agency and the Contractor to execute, complete, operate and maintain the Works
Wp	DC capacity measured as the sum of the nameplate rating of each PV Module

Term	Definition
50% Design Documents	Design Documents intended to represent a reasonably complete design package. Many of the design submittals may be preliminary or conceptual in nature, without having all exact details defined. 50% Design Documents shall be provided as a single comprehensive submittal. To the extent possible, all PDF's shall be combined into a single file. 50% Design Documents shall include (at a minimum): ***Design Basis:*** ● Design criteria for each engineering discipline. ● Contractor's equipment and system designation methods. ● List of systems and system designations. ***Electrical Package:*** ● Schematics and single line drawings detailing: array and DC collection system circuits, LV AC collection system, site lighting, auxiliary and backup power, MET stations, DAS and communications systems, grounding design wiring details including: specifications for all conductor types, conduit, protective devices and relays; ampacity calculations for all directly buried conductors; voltage drop calculations for all conductor runs; trench details, Combiner Box wiring details (both DC and AC), minimum bend radius, conductor termination details, conduit fittings, etc. ● Equipment pad layout design including conduit entry. ● Supporting documentation for all components (transformers, modules, Combiner Boxes, etc.) including specification of all requirements for all components, manufacturer's datasheets, installation manuals, operations and maintenance manuals. ***Structural Package:*** ● Calculations in accordance with Section 8.5.2. ● Elevations depicting mounting configurations for all equipment.

Term	Definition
	● Structural designs for all mounting structures. ● Roof attachment layout and means of affixing to structural members. ● Torque requirements for all mounting structure and module fasteners. ● Corrosion analysis.
90% Design Documents	Design Documents intended to represent a nearly complete design package for final approvals prior to being issued for permit approval. The 90% Design Documents shall be provided as a single comprehensive submittal. 90% Design Documents shall include (at minimum): ● An updated version of the 50% Design Documents with revisions and additional detail where applicable. ● Equipment ratings for all power systems equipment, bus work, enclosures, protective devices, etc. ● All detailed information required to obtain all necessary construction permits from the AHJ.
IFC Design Documents	Design Documents intended to provide all required information for subcontractors to construct the Project. IFC Design Documents shall be provided as a single comprehensive submittal. IFC Design Documents shall include, at minimum, complete and fully detailed submittals (including all applicable drawings and calculations) for the following: ● An updated version of the 90% Design Documents with revisions and additional detail where applicable. ● Shall address any responses/comments from the AHJ.
As-Built Design Documents	Design Documents intended to reflect design changes after the release of the IFC Design Documents and to document the design of the as-constructed facility
MBTU	Millions of British Thermal Units per hour
JPS	Jamaica Public Service Company Ltd. (Electric Utility)

4 INDUSTRY STANDARDS AND CODES

4.1 Government and Jurisdictional Codes and Requirements

Contractor shall engineer and construct the Project in compliance with all applicable local building codes including the Jamaica Building Code, Third Edition (2003), and the National Electrical Code 2017 and JS 21. Additionally, the LED Lighting upgrade should conform to the national electrical standards as required by the equipment standards as outlined by the Bureau of Standards Jamaica (BSJ).

4.2 Industry Codes and Standards

Additional industry codes and standards include, but are not limited to, the following:

- AASHTO - Association of State Highway and Transportation Officials
- ACI - American Concrete Institute
  - ACI 318-05 - Building Code Requirements for Reinforced Concrete
  - ACI 301 - Specifications for Structural Concrete
- AEIC - Association of Edison Illuminating Companies
  - AEIC CS8 - Specification for Extruded Dielectric, Shielded Power Cables Rated 5 through 46kV

Air Conditioning, Heating, and Refrigeration Institute (ARI/AHRI):

- 495-//2005// Standard for Refrigerant Liquid Receivers
- 730-//2013// Flow Capacity Rating of Suction-Line Filters and Suction-Line Filter-Driers
- 750-//2016// Thermostatic Refrigerant Expansion Valves
- 760 //202014// Performance Rating of Solenoid Valves for Use with Volatile Refrigerants

- Air-Conditioning, Heating, and Refrigeration Institute (AHRI):
  - 210/240-//2017// Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment
  - 270-//2015// Sound Rating of Outdoor Unitary Equipment
  - 310/380-//2017// Standard for Packaged Terminal Air-Conditioners and Heat Pumps (CSA-C744-04)
  - 340/360-//2015// Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment
  - 520-//2004// Performance Rating of Positive Displacement Condensing Units
- AISC - American Institute of Steel Construction
- AISI - American Iron and Steel Institute

American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE):

- 15 //2019// Safety Standard for Refrigeration Systems (ANSI)
- 17 //2008// Method of Testing Capacity of Thermostatic Refrigerant Expansion Valves (ANSI)
- 63.1-//2001// Method of Testing Liquid Line Refrigerant Driers (ANSI)
- 63.2-//2010// Method of Testing Liquid Line Filter Drier Filtration Capability (ANSI)

- American National Standards Institute (ANSI):
  - A13.1-//2015//Scheme for Identification of Piping Systems
  - Z535.1-//2017// Safety Color Code
- ASCE - American Society of Civil Engineers
  - ASCE 7-10 Minimum Design Loads for Buildings and Other Structures
  - ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures

American Society of Mechanical Engineers (ASME):

- B16.22 //2018// Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings (ANSI)
- B16.24 //20016//Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500 (ANSI)
- B31.5-//2013// Refrigeration Piping and Heat Transfer Components (ANSI)
- B40.100-//2013//Pressure Gauges and Gauge Attachments
- B40.200-//2008//Thermometers, Direct Reading and Remote Reading

- ASTM - American Society for Testing and Materials
  - A126-//2014// Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
  - B32 08Standard Specification for Solder Metal
  - B88 //2016// Standard Specification for Seamless Copper Water Tube
  - B88M-//2018// Standard Specification for Seamless Copper Water Tube (Metric)
  - B280 //2019// Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
- American Welding Society, Inc. (AWS): Brazing Handbook
  - A5.8/A5.8M //2011// Standard Specification for Filler Metals for Brazing and Braze Welding
- Caribbean Uniform Building Code (CUBiC) – Wind and seismic loading
- IEC - International Electrotechnical Commission
  - IEC 61215 Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval
  - IEC 61646 Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval
  - IEC 61730 Photovoltaic (PV) module safety qualification
  - IEC61730-2 Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing
  - IEC TS 62548 – Photovoltaic (PV) arrays - Design requirements
  - IEC 60364-5-52, Selection and erection of electrical equipment – Wiring systems
  - IEC 60536 Classification of electrical and electronic equipment with regard to protection against electric shock
  - IEC 61140 Protection against electric shock - Common aspects for installation and equipment
  - IEC 61000-6-2:2005 - Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
  - IEC 61000-6-4:2006 - Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
  - IEC 62109 Parts 1 and 2 - Safety of power converters for use in photovoltaic power systems

- IEC 60269-6 Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
- IEC 62930 Electric cables for Photovoltaic systems
- IEC 60296 Mineral Insulating oils for transformers & switchgear
- IEC 60099, Surge Arrestors -
  - Part 4: Metal-oxide surge arresters without gaps for AC systems
  - Part 5: Selection and application recommendations
  - Part 6: Surge arresters containing both series and parallel gapped structures - Rated 52 kV and less
- IEC 61850 (Communication networks and systems in substations).
- IEC 60870-5-104 (Telecontrol equipment and systems - Part 5-104: Transmission protocols
- IEC 60529 Degrees of Protection Provided by Enclosures (IP Code)

· IEEE - Institute of Electrical and Electronic Engineers

- IEEE 1547-2018 - IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces

National Fire Protection Association (NFPA) Publications:

- 90A-//2018// Standard for the Installation of Air-Conditioning and Ventilating Systems

· NETA - International Electrical Testing Association

- ATS - Acceptance Testing Specifications
- ETT - Standard for Certification of Electrical Testing Personnel

· UL - Underwriters Laboratories

- UL 2703: Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels
- Standards for miscellaneous parts and components

U.L.207-//2018// Standard for Refrigerant-Containing Components and Accessories, Nonelectrical

- U.L.429-//2013//Standard for Electrically Operated Valves
- Illuminating Engineering Society Standard 90.1.
- Power Quality Standard IEEE 519-2014.
- ISO 8995/CIE S 008 Lighting for Indoor work spaces (International Committee on Illumination).

5 Project Details of Works 1

5.1 General Project Information

Solar PV Systems

- Site plan and other characteristics:

- Annotto Bay Hospital – Annex VII.2
- Bustamante Children Hospital - Annex VII.2
- Port Maria Hospital - Annex VII.2
- Spanish Town Hospital – Annex VII.2
- St. Ann's Bay Hospital – Annex VII.2
- Port Antonio Hospital – Annex VII.2

- Interconnection voltage: Contractor to determine.
- Point of interconnection: Contractor to determine.

5.2 Project Attributes Solar PV Systems

- DC Capacity (kWp) per Inverter: Contractor to determine.
- AC Inverter Nameplate Rating (kWac): Contractor to determine.
- Quantity of Inverter blocks: Contractor to determine.
- Minimum total DC Capacity (kWp): defined in table VII.2
- Minimum total inverter AC nameplate rating (kWac): Contractor to determine.
- DC: AC Ratio (kWp/kWac): 1.25 maximum.
- Expected year 1 project specific yield (kWh/kWp): Contractor to provide.
- Expected year 1 project 12-month energy production (kWh): Contractor to provide.

5.3 Design Conditions

- Maximum Design temperature: 50° C (Ambient).
- Minimum Design temperature: 10° C (Ambient).
- The complete generating system, support structure, and ancillary structures shall comply with 180 mile per hour basic design wind speed, Risk Category III or IV per ASCE 7 or greater requirements of the local building code requirements. The Contractor shall confirm all wind load requirements with the Ministry of Public Works and the Contracting Agency prior to initiating design activities.

5.4 Project Special Conditions

The building facilities are provided by Owner. The Contractor will be required to coordinate certain aspects of the interface between Contractor's Works and the facilities provided by Owner and Utility. Such interface shall include (but may not be limited to):

- Specification of the termination type for the low voltage output circuit to the POI at the Site.
- Specification of the number/type of communications required by the Contractor for the DAS system.
- Coordination on the final DAS points list.

6 General Requirements

This section provides explanation and lists an overview of the requirements of the Technical Specifications. The intent of this section is to illustrate that the Contractor is responsible for all activities to complete the Project except for those items not specifically identified and specified herein.

6.1 Safety

A Health and Safety Management Plan should be provided before the commencement of the construction works, together with an emergency/contingency plan. The Health and Safety Management Plan should assess the risks of all activities associated with he Work (such as working at height, electrocution, blows, cuts, wounds caused by machinery and equipment) and provide appropriate management measures for the works activities (prevention and protection measures). The emergency plan should provide specific workers' instruction and procedures to respond to emergency events (e.g. fire, hurricanes, tornadoes, explosions, severe workers' accidents).

The Health and Safety Management Plan should be aligned with the content of Annex VII.6.4 Occupational Health and Safety, the **IDB's Strategic Environmental and Social Assessment & Environmental and Social Management** and the emergency plan with the content of chapter Annex VII.5.3 Natural Disaster Management Plan and Annex VII.5.1 Emergency Preparedness and Response Management Plan / Contingencies.

Additionally, within Thirty (30) days following the Start Date, Contractor shall provide to Contracting Agency a Site-specific Safety Plan for the Work to ensure that appropriate measures are taken to support safe construction.

The Health and Safety Plan and the Emergency/Contingency Plan should be aligned with the requirements of The Jamaica Health and Safety at Work Act and the Jamaica Occupational and Safety Act 2017; and of the **IDB's Strategic Environmental and Social Assessment & Environmental and Social Management** as set out above.

The Health and Safety Plan should include a Code of Conduct for workers involved in the construction activities that includes the expectations and will define acceptable behaviours, regarding to topics such as use of Company's goods, privacy, safety, drugs and alcohol, internal behaviour and expected behaviour with the community, discrimination, sexual harassment and gender-based violence, forced labor and child labor, disciplinary actions see Annex VII.6.5 Gender Equality Plan.

The Contractor should nominate a person responsible for the health and safety supervision and management of the Work.

Before the commencement of the construction works, the Contractor should provide evidence that all workers have received appropriate health and safety and emergency training, and that adequate protective equipment is available for all workers performing the construction works.
During construction, the Contractor should provide evidence of the effective implementation the health and safety plan (providing photographs and a brief supervision).

Contractor shall provide safety supervision to maintain safe working conditions.

Contractor shall perform arc-flash calculations, and utilize appropriate PPE, for work performed in or near any live electrical components.

Contractor shall perform daily safety briefings and inform all workers of relevant hazards involved in the Works.

Contractor shall develop lock-out-tag-out (LOTO) procedures for performing the Work and operation of the Project.

6.2 Permits and Environmental Compliance

Contractor shall be responsible for providing all required engineering plans, designs and documents as needed to obtain all building and construction permits necessary to complete the Work including, but not limited to: a) Building permits issued through the AHJ; b) Electrical permits; and c) Temporary construction power, fire, and sanitation permits. Contractor shall bear any cost/fees associated with obtaining the above-identified approvals and permits.

Contractor shall comply with all conditions of approval and all mitigation measures required by the AHJ and demonstrate compliance as required by the AHJ. Any mitigation measures that require substantial physical work may be cause for a change order as per the Contract.

Within thirty (30) days following the Start Date, Contractor shall provide an Environmental Compliance and Protection Plan. This plan shall describe the environmental protection measures that will be implemented for the Project (e.g., waste management/disposal, environmental protection measures inspection schedule, etc.)

The Contractor should develop a Work's waste management plan aligned with the content of Annex VII.6.2 Hazardous Solid Waste Management Plan and the **IDB's Strategic Environmental and Social Assessment & Environmental and Social Management**; during construction, the Contractor should provide evidence of its effective implementation.

6.3 Schedule

Contractor shall develop a detailed (Level 3 or 4 critical path method) Project Schedule of the Work to include all key milestone dates (subject to approval by Contracting Agency) and Contractor deliverables no later than thirty (30) calendar days following the Start Date.

Contractor shall provide weekly updates to the Project Schedule that shall indicate at a minimum the following:

- Major changes in scope.
- Activities modified since previous submission.
- Revised projections of progress and completion.
- Other identifiable changes.

Contractor shall provide schedules in electronic format.

Contractor shall provide immediate written notice to Contracting Agency at any time that Contractor becomes aware of a change to the Project Schedule that is expected to impact any of the milestone dates. Contractor shall have five (5) days to provide Contracting Agency with a mitigation plan and revised Project Schedule.

6.4 Project Management

Contractor shall submit a Project Management Plan within 10 days from the date of the Letter of Acceptance meeting the following requirements:

- Designated engineering, procurement, and resident construction managers who will be responsible for each portion of the Project.
- Project reporting procedures and frequencies.
- Chain of communication.
- Change control plan.

Contractor shall identify a single point of contact (Project Administrator) within Contractor's organization for Contracting Agency to communicate with regarding the Work.

The Project Administrator shall convene weekly conference calls or site meetings with the Contracting Agency and other stakeholders designated by the Owner to communicate status of the Work.

The Contractor shall maintain and issue progress reports on a bi-weekly basis (once every two weeks) and/or as requested by the Contracting Agency to communicate the status of the Work.

The progress reports shall include:

- Safety report.
- Report on construction progress.
- Updated schedule of values.
- Updated schedule for the Work.
- Meeting minutes.
- Action item list.
- Construction progress photographs.

Submittal Log including submittals from Contractor to Contracting Agency for approval and Requests for Information (RFIs) from Contracting Agency to Contractor. The proposed format of the Submittal Log shall be included in the Project Management Plan (subject to approval by the Contracting Agency).

Risk matrix identifying potential risks and actions taken by the Contractor to mitigate such risk.

Before any work is performed, a pre-construction conference call or in-person meeting shall be held to review contract requirements; establish a detailed schedule of operations; discuss the Contractor's safety rules and policies and the contractor's site safety plan; discuss material handling; introduce various members of the Contractor's, Contracting Agency's, and engineer's staffs; and resolve any questions raised by any of the parties.

During construction, weekly progress meetings shall be held to review job progress; review project work schedules; review requests for payment; resolve problems that may arise; discuss any accidents or near accidents since the last meeting; and address any other matters of concern to any of the parties.

The Contractor shall prepare a summary of each meeting within two (2) working days of the meeting, especially noting any decisions made, and shall deliver a copy of same to the Contracting Agency.

6.5 Engineering

Contractor is responsible for all electrical, structural, mechanical and civil engineering and design. All drawings, studies and documentation submitted to any AHJ shall be signed and sealed by a professional engineer registered in Jamaica.

The design basis for the Project shall be the Project specific information included in this RFB.

Contractor shall include in the Design Documents a general arrangement drawing, to scale, indicating the location of all major Project equipment. The general arrangement drawing shall include, at a minimum:

- PV arrays.
- Inverters.
- Underground low voltage cables.
- Low voltage switchgear.
- Meteorological stations.
- Disconnect switches.
- Point(s) of interconnection.
- Staging and laydown areas.
- Equipment building(s)/room(s).

Contractor shall perform all engineering and design Work within the scope defined and in accordance with all applicable building, electrical, safety and fire codes.

Contractor shall provide full turnkey engineering design for all PV systems and ancillary Site civil Work.

Contractor shall designate an engineering manager who will be responsible for the overall management and administration of engineering and design Work.

Contractor shall work with the Contracting Agency to apply for and obtain all required construction permits in order to construct the Project.

Contractor shall provide submittals to Contracting Agency pursuant to agreed Project Schedule. Engineering submittals shall be provided at intervals sufficient for Contracting Agency to review and comment on design decisions. Submittal milestones include:

- 50% Design Documents.
- 90% Design Documents.
- IFC Design Documents.
- As-Built Design Documents

Power generated by the Project shall be compatible with the electric power system to which the Project is interconnected.

Contractor shall complete the final detailed engineering drawing package (IFC Design) required for all construction permits within 11 weeks following the Start Date.

An up-to-date printable index listing of all Contractor Design Documents including specifications, drawings, calculations, and as-built revisions organized by document number, title and revision shall be maintained by Contractor and shall be available to Contracting Agency at all times.

All engineering and design calculations prepared by Contractor during the design of the Project shall be available for Contracting Agency to review electronically. Such calculations shall include structural, electrical, mechanical and instrumentation and control details. Contractor shall make calculations available for Contracting Agency within thirty (30) days of the Start Date.

All vendor documents received by Contractor shall be maintained by Contractor and available to Contracting Agency at all times.

Contractor shall make all engineering documentation available in editable and PDF format.

Contractor shall make all drawings available in DWG (AutoCAD) and PDF format.

6.6 Procurement

Contractor shall be responsible for the procurement, handling, shipping costs and delivery of all equipment, materials, and services, including, without limitation, locating, negotiating, inspecting, expediting, shipping, shipping permits, unloading, receiving, verifying, customs clearance, and transportation and delivery to Site.

Packing lists shall be maintained by Contractor at the Project and shall be available for Owner‘s Agent review.

Contractor shall update a schedule of values maintained in electronic format that accurately describes the quantities of all Project equipment received at the Project. The schedule of values shall be updated within seven (7) days after each delivery of equipment. The schedule of values shall be available for Contracting Agency review.

All freight costs for all equipment shall be the responsibility of the Contractor.

All applicable taxes, service charges, and import duties shall be the responsibility of the Contractor unless otherwise agreed with the Contracting Agency.

Contractor shall work with Contracting Agency to secure any available customs concessions on the goods imported for the project.

All customs documentation and fees shall be the responsibility of the Contractor.

All equipment stored at the Site shall be in accordance with Good Industry Practices and manufacturer’s recommendations. Contractor shall use all reasonable measures to keep the equipment free from dirt and debris.

Contractor shall perform all inspection and pre-installation maintenance activities to ensure compliance with manufacturer’s recommendations. Contractor shall maintain a log of such maintenance activities, such log to include the date of such activities and the names and

signatures of the personnel performing such activities. Such log shall be available to Contracting Agency for review.

Contractor shall obtain all warranty information for all Project equipment. All key equipment warranties shall permit assignment to Contracting Agency without consent.

Contractor shall obtain all installation, operations and maintenance manuals for all Project equipment.

Contractor shall secure all equipment located at the Site prior to each Phase Completion Date.

6.7 Construction

Prior to any Work at the Site, Contractor shall demonstrate or provide to Contracting Agency:

- All safety requirements of Section 6.1 have been met.
- All engineering and design requirements of this document have been met.
- Structural analysis and calculations have been completed.
- Contractor has received all installation manuals and requirements for all Project equipment.
- Contractor has provided to Contracting Agency an up-to-date procurement and construction schedule indicating firm commitment dates for all Project equipment.
- Contractor has obtained all required permits necessary to conduct the Work at the Site.

All workmanship shall comply with Good Industry Practices, Applicable Laws and Applicable Standards, including but not limited to those specified in Section 4 of this Annex VII.1.

For each portion of the Work, the contractor shall provide at least one person per shift who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the referenced standards and requirements of the work, and who shall personally direct and/or inspect all work performed.

For each portion of the work, sufficient skilled workers shall be provided who are thoroughly familiar with the type of construction, materials, and techniques specified.

No allowance will be made in the acceptance or rejection of any portion of the work for lack of skill on the part of the workers.

Where regulatory requirements mandate that one or more workers performing a task have specialized training or certification, Contractor shall provide workers that possess such training or certification.

Contractor is responsible for on-site security until Project Completion.

Contractor shall provide all required temporary construction utilities such as electric power, water for concrete and dust control and telecommunication service.

Contractor shall provide all fuels required for construction activities.

Contractor shall provide adequate lavatory facilities for the maximum quantity of people at the Site. Contractor is responsible for all service and waste removal.

Contractor shall utilize dust suppression systems and procedures to minimize fugitive dust.

Contractor is responsible for properly containerizing, removal and disposal of all solid waste, including any Hazardous Materials waste generated during the Work.

6.8 Quality Assurance and Control

Contractor shall implement a quality assurance and quality control (QA/QC) program to ensure the necessary measures are taken to support successful execution of the Contract.

Contractor shall provide QA/QC supervision to maintain quality control in line with industry standards for similar work.

Within thirty (30) days following the Start Date, Contractor shall provide to Contracting Agency a Site-specific, detailed QA/QC Plan. The Plan, at a minimum, shall address all aspects of:

- Procurement of equipment, including inspections
- Construction of the Project, including inspection and testing procedures to verify the construction complies with the AHJ-approved design and permit conditions
- Commissioning and testing of the Project
- Corrective action procedures that address defective materials, chain of supply, discrepant system components and field issues.

Contractor shall have the QA/QC Plan reviewed and approved by the Contracting Agency to ensure all testing and inspection procedures satisfy Applicable Standards and regulations.

Contracting Agency may perform an audit of the Plan at any point during the Work.

The Plan shall include a continuous improvement program. All improvements shall be logged as lessons learned and made available to the Contracting Agency.

Contractor shall perform inspections and field quality control testing throughout the construction process including:

- Assessing existing conditions.
- Construction installation placement and qualification measurements.
- Final inspections and tests.

Testing shall comply with Good Industry Practices, Applicable Laws and Applicable Standards.

Testing shall include, but is not limited to:

- Commissioning and testing including:
    - PV string voltage measurements at inverter inputs.
    - PV string IV curve tests at inverter inputs.
    - AC voltage measurements at inverter outputs.
    - Inverter anti-islanding tests.
    - PV system rapid shutdown tests.
- NETA ATS standards.

- Confirmation of racking system roof attachment or ballast design parameters (e.g., bolt penetration depth into concrete slabs or roof structural members, concrete ballast weight and placement, etc.)
- Underground cabling for burial depth, spacing, tape placement and insulation resistance.
- Photographs shall be taken of each open trench with all conductors prior to backfill.
- Any other tolerance requirements as outlined in the approved engineering drawings and/or manufacturer's recommendations.

Torque:

- Contractor shall ensure all fasteners are torqued properly according to the manufacturer's instructions.
- Torque marks shall be provided on all structural fasteners and electrical terminations to indicate torque has been verified.
- Proper torque shall be achieved through the use of non-powered, calibrated torque wrenches. Electric and air-driven tools shall not be relied upon to provide final torque without Contracting Agency approval.
- Contractor shall compile a torque chart for the Project that includes the required torque settings for all fasteners and electrical terminations.
- Contractor shall coordinate and document all QA/QC requirements and inspection and test results.
- Contractor shall provide a three (3) Business Day notice to Contracting Agency prior to the following events for Contracting Agency review of the QA/QC inspection and testing results required of each:
    - Installation of mounting structure posts.
    - Backfill of first trench of each trench type.
    - Installation roof attachment fasteners (if applicable).
    - Installation of mounting structure.
    - Installation of mounting structure ballasts (if applicable).
    - Installation of inverters.
    - Installation of PV modules.
    - PV system commissioning.
    - Backfeed to the Utility.

6.9 Commissioning

Commissioning shall be performed in accordance with the manufacturer's installation, commissioning, and O&M manuals, and in accordance with industry best practice and specifications provided by Contracting Agency.

6.10 Manuals

Contractor shall provide comprehensive Project Manual which shall contain the following as a minimum:

- Final Contract Agreements.

  - Contract (including Exhibits).
  - Completion Certificates.
  - Warranties.

- Project Overview and As-Built Drawings.
  - PV Module Database complete with model number, serial number, power and voltage rating, flash test data, etc. for all modules.
  - Balance of System Database complete with model number, serial number, applicable rating for all equipment including but not limited to inverters, switchgear, and breakers.
- Studies and Reports
- Commissioning Reports, Test Reports, Inspection Reports and QA/QC Documentation
- Capacity Test Reports.
- Availability Test Reports.
- Module Factory Test Results.
- Independent Laboratory Test Results.
- QA/QC Documentation.
- Applicable Permits
  - Owner Permits.
  - Contractor Permits.
  - Permit Compliance Matrix.
- Contractor shall provide comprehensive Operating Manual, detailing all services to be provided through the duration of the life of the system.
- Complete Project Manual and Operating Manual shall be submitted to Contracting Agency no later than Substantial Completion.

6.11 Community Relations

Contractor shall maintain positive relations with the community and neighbors during the Work. Contractor shall take appropriate steps to minimize disturbance to local residents.

6.12 Security Requirements

The contractor shall provide a Security Plan. At a minimum, the Plan shall address the following:

  - Security measures to protect equipment, materials, and personnel.
  - Work zone access and controls.
  - Coordination with local law enforcement agencies.
  - Warning signs of the presence of hazardous substances and the potential of hazardous work activities, as appropriate.
  - Lighting requirements for working during non-daylight hours, as applicable.

7 ELECTRICAL REQUIREMENTS

7.1 General

It is the Contractor's sole responsibility to ensure that all aspects of electrical design for the Project comply with all local code requirements, Applicable Standards, and the following System Operating Conditions:

- Voltage range: Per Jamaica Public Service Interconnection Technical Guidelines (See Annex VII.3).
- Frequency range: Jamaica Public Service Interconnection Technical Guidelines (See Annex VII.3).
- Harmonics: Jamaica Public Service Interconnection Technical Guidelines (See Annex VII.3).

All electrical design including conductors and equipment design attributes shall comply with the National Electrical Code 2011 including, but not limited to, ampacity rating, jacket type, conditions of use, conductor color conventions, labeling, terminations, conduit fill, protection and isolation, disconnecting means, signage and labeling requirements.

Equipment specifications shall comply with Section 10 of this Annex VII.1.

Contractor is responsible for electrical system studies for design of all electrical components and systems, including but not limited to, protective device coordination, grounding assessment, DC and AC voltage drop calculations, cable sizing, and thermal ampacity calculations for conditions of use.

Contractor is responsible to engineer and install all aspects necessary for a fully functional Project, including but not limited to, the following items:

- PV array & DC collection system circuit: Modules, DC cabling, combiner boxes, protection and isolation devices, complete grounding design, surge/lightning protection, and inverters.
- AC LV collection system: LV cabling between inverters and LV switchgear, protection and isolation devices, surge/lightning protection, as applicable.
- Operations and Maintenance (O&M): DAS, backup power, auxiliary power, protection and isolation devices, as applicable.

7.2 PV Array Design

7.2.1 Project Layout

Contractor shall provide a design layout of the PV Module configuration in compliance with the technical specifications.

Contractor shall provide adequate space between roof edges and array modules in order to allow for walking space and/or compliance with applicable codes and standards.

PV Modules shall be oriented in portrait or landscape orientation based on manufacturer's recommendations and installation instructions.
Contractor shall provide adequate space between rows of PV Modules to reduce row-to-row shading impacts.

Contractor shall provide adequate space around rooftop objects to prevent shading of solar PV Modules.

7.2.2 Modules

If PV Modules with multiple nameplate ratings are used, the PV Modules shall be grouped such that all PV Modules connected to an inverter have the same nameplate rating. Contractor shall organize PV Module serial numbers by inverter.

All PV Modules shall utilize the same brand and model connector even if different types of PV Modules are used.

All PV Modules supplied for the Project shall have a positive power tolerance of 0-3% of its nominal factory power output as measured at Standard Test Conditions (STC). Contractor shall provide Module manufacturer flash test data results to Contracting Agency 30 days prior to Module installation in the field, or as soon as it is available thereafter.

7.3 DC Collection System

7.3.1 General DC requirements

The maximum voltage of the DC collection system shall be 1,000 Vdc, unless otherwise approved by Contracting Agency. All components utilized in the DC collection system shall be rated for the maximum voltage of the DC system, 1,000 Vdc.

The DC collection system circuits shall be designed to limit total electrical losses at STC conditions to no more than 1.5%.

7.3.2 DC Cabling

Wiring shall be secured to the PV Module mounting structures utilizing UV-resistant devices and secured in a manner such that no exposed wiring is in direct contact with unfinished metal edges.

- UV resistant zip ties shall be allowed for the purpose of securing cabling to racking only for 1 or 2 individual conductors. Zip ties shall not be used to secure cabling to racking, for groups of more than 2 individual conductors.
- Stainless steel zip ties with protective backing or stainless-steel wire clips may be used, but shall be installed in a manner not to deform or compress the cable insulation.

All conductors shall be protected by conduit from the array up to the electrical enclosure termination point and in any locations where they would be exposed to the elements. Conduit shall comply with IEC or UL requirements.

No splices shall be permitted.

For the purposes of establishing cable ampacity for direct buried DC circuits NEC 2017 procedures shall be followed. Calculations shall be subject to review by the Contracting Agency during the execution phase.

Warning tape shall be provided in all trenches.

7.3.3 Combiner Boxes

Conduit and cable entry into combiner boxes shall be through the bottom or sides of the enclosure only.

Contractor shall provide universal key locks for all combiner boxes.

7.3.4 Disconnect Switches

Disconnect switches shall have visible blades and be rated for full load disconnect.

7.4 AC Collection System

7.4.1 General AC requirements

The AC collection system shall encompass all equipment from the inverter output to the POI.

For LV Switchgear that collects multiple circuits, it shall include a circuit breaker and protective relaying for the combined output.

The low voltage AC collection system shall be designed to limit electrical losses at STC conditions to no more than 0.5%.

AC collection system cabling shall be installed in conduit or duct-bank when crossing under all vehicle roadways.

Warning tape shall be provided in all trenches.

For the purposes of establishing cable ampacity for direct buried AC circuits NEC 2017 procedures shall be followed. Calculations shall be subject to review by the Contracting Agency during the execution phase.

No splices shall be permitted, except with Contracting Agency approval.

Minimum electrical clearances from energized parts shall be in accordance with NEC 2017 requirements.

A disconnecting means shall be provided for each circuit at the AC collection system. The intent of this provision is to ensure that a fault occurring within the AC collection system can be isolated, to the extent possible, such that the remainder of the system can continue to operate while the faulted section is repaired.

A 480V circuit breaker shall be provided by Contractor at the point of interconnection at the Owner LV switchgear. Contractor shall be responsible for terminating the output circuit at the Owner LV switchgear.

All switchgear shall be rated for the environment and conditions of use and shall meet all Applicable Standards.

The AC collection system shall be equipped with all appropriate isolation mechanisms, including but not limited to: overcurrent protection, breakers, and surge arrestors.

7.5 Project Wiring

To calculate total array wiring and transformation losses, each run (modules to combiners boxes, combiner box to DC disconnects, etc.) will be individually calculated. Conductor type, current at maximum power, voltage at maximum power, estimated length of line (one-way) and associated voltage drop will be shown in a table.

7.6 Inverter Station

Inverter station, consisting of inverters and switchgear shall be an appropriately sized and ventilated room or a suitable exterior location.

Inverters shall be housed in an appropriate manner that protects internal hardware and circuitry based on the Design Conditions indicated in Section 5 of this Annex VII.1.

Inverter station shall include any required HVAC to ensure the inverter performance is not de-rated due to temperatures above or below the temperature at which the inverter is rated for full nameplate operation. If HVAC is required to maintain the temperature inside a shelter housing the inverters, the HVAC system shall be designed to maintain a temperature within the range required for the inverter's full-power operation.

If HVAC is required to meet the requirement of the previous paragraph the inverter supplier shall approve the thermal design.

Contractor shall select inverter output to match the building's or facility's electricity supply (JPS) and any other internal power supply system.

7.7 Conduit

Conduit shall comply with the requirements of the NEC 2017 standards for the conditions of use.

Where required, PVC conduit shall be a minimum schedule 40 PVC for individual conduits direct-buried in the ground and schedule 80 where exposed to physical damage.

Conduit that is used outdoors shall be rated for continuous outdoor exposed use.

7.8 Protection and Isolation Devices

Overcurrent protection devices shall be appropriately rated for the voltage and current as specified by the NEC 2017 standards.

Overcurrent protection devices shall be rated for reverse flow.

7.9 Lightning Protection

Contractor shall evaluate the need for lightning protection using Good Industry Practices which shall include the requirements of the NEC 2017 standards.

Lightning arrestors shall be provided at each inverter on the AC and DC sides.

Lightning arrestors shall be provided on above ground electrical power line poles, if provided by the Contractor.

7.10 Electrical Grounding

Contractor shall provide an overall electrical grounding schematic of the Project. The grounding schematic shall indicate the primary connections to earth and the manner in which all components are grounded.

Grounding design shall comply with all requirements of the NEC 2017 standards. All metal objects, likely to be energized, including but is not limited to module frames, all racking structure members, metal conduit, metal enclosures, fencing, etc. shall be grounded.

The Project shall include remote ground fault detection within each inverter block.

All grounding and bonding conductors shall be stranded copper.

Hardware utilized in grounding design shall avoid risk of galvanic corrosion from contact of dissimilar metals.

All ground lugs and ground terminations shall be CSA or UL Listed for use in the environment installed. Grounding connections terminated below grade shall be CSA or UL Listed specifically for direct burial applications.

Equipment grounding conductors shall be routed with the associated phase or DC conductors.

A grounding system shall be installed at each inverter station and at each pad-mount electrical enclosure. Such grounding system shall consist of a grounding electrode and buried copper ground ring at least 36 inches below grade.

7.11 Signage, Equipment Marking and Labeling

Signage shall be provided on all electrical equipment in accordance with requirements of the NEC 2017.

Signage shall be weather-proof, corrosion-proof, UV-stabilized and fade-resistant and shall be capable to last the duration of the minimum Design Life.

Signs shall be attached using non-corrosive materials suitable to meet the Design Life.

All combiners, re-combiners, inverters, transformers, disconnect switches and circuit breakers shall have an engraved permanent identification label visible and readable from distance of 1.5 m that provides the unique identification number as indicated on the electrical drawings and in the LOTO procedure.

All conductors, including DC conductors utilized in the PV Module string circuits and for conductors between combiners and inverters, shall bear permanent cable labels at each end that uniquely identify the cables and are traceable to the electrical drawings.

Permanent labels shall be suitable for wet locations and rated for UV resistance if exposed.

Each row of PV Module mounting structures shall be permanently marked at each end indicating both the combiner box and inverter identification numbers to which that row is connected.

A DC and AC single line diagram shall be posted inside the system (at or near the main AC switchgear) that clearly identifies the DC and AC disconnect locations. If not apparent from the single line diagrams, a Project map shall also be provided indicating the approximate locations of the disconnect switches. DC and AC disconnect switch designations shall match the electrical drawings, device labels and LOTO procedures.

8 CIVIL, STRUCTURAL AND ELECTRICAL REQUIREMENTS

8.1 General

It is the Contractor's sole responsibility to ensure the Project structural and architectural facilities comply with all local code requirements and all industry codes and standards.

Contractor is responsible to determine all Site data necessary for the design and construction of the Project. This includes, but is not limited to, determination of local design wind speed, seismic design coefficients, and any areas restricted from construction.

In table VII.1.1 are included the existing roof structures at the relevant site on which PV arrays are to be installed.

Contractor must calculate the capability of the roof structures to bear the load of PV arrays under normal circumstances and during high wind speed events and any roof reinforcement required prior to the installation of PV arrays.

The Contractor shall provide all structural calculations and drawings to the Contracting Agency with the 50% Design Documents.

The drawings and calculations to support the design of all Structural elements shall include, but are not limited to:

- Array rack mounting structures, and array roof attachments where applicable.
- Inverter station and any other ancillary structure foundations (if ground-mounted) or means of attachment (if mounted on building).
- Product specifications, installation manual, operations, and maintenance manuals and other commissioned or forthcoming reports.
- The Contracting Agency will review documents and submit comments. The Contractor shall address in writing any and all comments received from Contracting Agency.

Contractor shall conduct detailed electrical assessments after contract signing to finalize designs.

8.2 Structural Steel and Fasteners

Steel members of any structural system shall be Grade 50 and meet the requirements of the applicable local or ASTM standard based on the application.

Stainless steel hardware shall conform to local standards or ASTM F593.

Mechanical fasteners used in any structural or support system shall meet the requirements of local standards or ASTM A325 or A490 for bolts nominally ½" diameter and larger, or ASTM A449 for bolts smaller than ½" diameter.

Anchor bolts used to secure any structural member to the building shall be galvanized and specifically identified by the structural engineer and include installation requirements, minimum projection, material grade, appropriate local standard or ASTM standard and torque specification. Anchor bolts shall conform to local standards or ASTM A449, ASTM F1554, Grade 36, or A307. Anchor bolt sleeves shall conform to local standards or ASTM A501.

All structural welding shall conform to the requirements of local standards or AWS D1.1.

8.3 Aluminum

Design of structural and miscellaneous aluminum shall be in accordance with local standards or the latest edition of the Aluminum Association – "Aluminum Design Manual" and "Aluminum Standards and Data."

Materials for structural and miscellaneous aluminum, including structural shapes and plate, shall conform to local standards or ASTM B209 and ASTM B308.

8.4 Corrosion Prevention

All Project equipment shall be protected from corrosion due to known or expected atmospheric conditions local to the Site in accordance with the Design Life and Good Industry Practices. Consideration shall be given to humidity, salinity, acidity, condensation, air particulates and other conditions likely to cause or accelerate corrosion of materials.

A service life analysis shall be completed that takes into account atmospheric conditions at the Site in order to estimate corrosion rates. The service life shall meet or exceed the required minimum Design Life.

Structural design calculations shall be based on the reduction in steel thickness over the Design Life of the Project.

Contact of dissimilar metals and finishes shall be avoided or intentionally managed to prevent premature galvanic corrosion.

Aluminum shall not be in direct contact with concrete or copper.

Fasteners and hardware shall be stainless steel (300 series, if available with required mechanical strength) or hot-dipped galvanized steel.

Galvanizing of steel products shall conform to the requirements of ASTM A123, ASTM A153 or ASTM F2329, as appropriate.

For any components where the galvanization is disturbed due to factory processing or during installation, those surfaces shall be repaired in accordance with ASTM A780 and A780M-09.

8.5 Structural Design Requirements

8.5.1 Structural Design Loads

The design loads and other information pertinent to the structural design – including, but not limited to, wind design data, and earthquake design data – shall be indicated on the construction documents.

Load combinations shall be determined in accordance with local standards or ASCE 7, Design Loads for Buildings and Other Structures, and from appropriate material codes. Load combinations found in the Jamaican Building Code that differ from those found in ASCE 7 and material codes shall govern over those found in ASCE 7 and material codes.

Dead loads shall include all gravity loads due to self-weight of permanent structural and nonstructural components, including permanent hung loads.

Wind loads shall be in accordance with the Caribbean Uniform Building Code (CUBiC) and the current edition of ASCE 7 as modified by any locally adopted code. The Module rack shall be designed in such a way that deflections due to wind will not damage the Modules.

Seismic loads shall be in accordance with the Caribbean Uniform Building Code (CUBiC) and the current edition of ASCE 7 as modified by any locally adopted code.

Structural design shall account for thermal loads including thermal expansion, contraction and cycling. Structures shall be designed for forces and/or displacements resulting from changes in ambient temperature. Induced thermal loads (i.e., thermal loads induced by equipment operating temperatures) shall be considered in design of applicable structural elements.

8.5.2 Structural Design Calculations

The structural analysis shall conform to the Jamaican Building Code, the CUBiC and ASCE 7.

Contractor shall provide a complete and comprehensive report demonstrating structural adequacy of the PV module mounting structure that considers all structural components, hardware, and connections, in a complete load path to the building attachments. The structural analysis shall conform to the locally adopted code, using design loads determined according to ASCE 7.

Structural systems and members thereof shall be designed to have adequate stiffness to limit deflections and lateral drift.

Structural analysis shall consider the static and dynamic effects of wind. Structural design shall not result in dynamic excitation of the structural system during wind events. The Project must resist wind loading without damage due to resonance or fatigue.

Wind and other environmental loads must be calculated for individual PV modules as well as all structural components in the System.

Worst-case wind loads on individual modules shall be calculated using an effective wind area of one PV module and must not exceed the wind rating of the PV module.

Structural design calculations shall consider loss of material due to corrosion.

8.6 Solar Array Building Attachment

Types of roof attachments required shall be as recommended by Contractor’s structural engineer.

Contractor shall use a mounting structure, in accordance with the conditions of the roofs to mount the PV arrays.

The PV Module mounting structure manufacturer shall approve Contractor’s design and installation to ensure that the mounting structure warranty remains in effect.

8.7 Concrete Equipment Foundations

Design of structural concrete shall be in accordance with local standards or the latest version of the American Concrete Institute (ACI) 318. All concrete formwork shall conform to local standards or ACI 347.

Construction of the concrete shall be in accordance with local standards or ACI 301.

Steel reinforcement shall be grade 60 minimum and conform to local standards or ASTM A615. Welded steel mesh shall conform to local standards or ASTM A185. Plain wire shall conform to local standards or ASTM A82. Placement shall be in accordance with local standards or Chapters 7 and 12 of ACI 318 and the Manual of Standard Practice of the Concrete Reinforcing Steel Institute.

Concrete shall conform to local standards or ASTM C150 with a 28-day compressive strength of 4,000 psi minimum.

Aggregates for normal weight concrete shall conform to local standards or ASTM C33.

Concrete mix proportions, including documentation of materials, admixture product information, and compressive strength of mix, shall be submitted and approved by the Owner‘s Agent prior to placing concrete.

Water used for concrete shall be clean and potable.

8.8 Trenches

Cables and conduits installed in trenches shall comply with requirements of the NEC 2017.

Direct burial of cables is not permitted. All buried cables shall be in conduit.

All buried cables in conduits shall include a marker tape below grade continuously over the conductors.

Trench backfill shall comply with local standards. An engineered fill shall be used if required based on the cable ampacity calculations.

A sand bed of at least 5 cm shall be used as the base layer for all trenches housing conduit and cables. The sand bed shall be clean natural sand and should not include other objectionable materials.

Trenches shall be backfilled in layers of no more than 15 cm each and mechanically compacted at each layer.

Contractor shall take appropriate measures to minimize the time that trenches are left open.

Trenches shall not be backfilled while there is any standing water in the trench.

Contractor shall inspect and, if necessary, repair sand beds in open trenches after rainfall events.

Conduit stub-ups and sweeps shall be used as needed for conductors entering and exiting a trench.

Open conduit ends shall be equipped with bushings and approved sealant to reduce intrusion of water, rodents, and insects.

Trenches shall be designed and constructed, to the extent possible, in straight lines.

9 DAS, Communications and Metering Requirements

9.1 General

Data acquisition system (DAS) requirements include design, engineering, labor, material, products, guarantees, training and services for, and incidental to, the complete installation of a new and fully functional DAS for the Project.

Contractor shall be responsible for all DAS equipment, software and programming for all DAS-related communications equipment to communicate with all Contractor-provided equipment.

The DAS shall include all instrumentation, hardware and capability to support the required data acquisition of the Project.

Contractor shall provide the following DAS submittals within 30 days following the Start Date:

- Hardware and software manufacturer and specification sheets
- Single line drawing, including devices, interconnection of devices, wiring types and protocols used.
- Data list with device name and individual addresses of data points.
- Installation, Operation and Maintenance manual.
- Software manuals.

9.2 DAS Equipment

Enclosures located outdoors shall be IP54 rated or better.

Fuse holders shall be finger safe.

Equipment shall be rated for continuous operation at 50°C ambient temperature unless located in a controlled environment building.

9.3 Acceptable Manufacturers

Equipment manufacturer and software suppliers shall be approved by the Contracting Agency.

9.4 Delivery & Identification

Contractor shall provide an identification nameplate for each device and enclosure with the designated tag number. The enclosure nameplate shall be engraved UV resistant material and attached to the front cover with rivets or stainless-steel screws. Device nameplates shall be adhesive labels with ¼" lettering that are moisture resistant.

Shipment and handling of materials shall be in a manner that avoids damage.

Equipment shall be inspected for damage prior to installation. Damaged equipment shall be repaired or replaced.

9.5 Communication System

The communication system shall consist of the following:

- Communication cables including twisted pair copper or fiber optic cables as needed.
- Ethernet switches.
- Fiber to Ethernet converters (if necessary).

At nodes in the network, managed switches shall be used.

- Switches shall be approved by Contracting Agency .
- Switches shall have a minimum of one spare port.

The communication protocol between the primary DAS location and inverter station(s) shall be Ethernet TCP/IP with MODBUS TCP.

Contractor shall be responsible for interfacing the Contractor-provided communication network to the Owner.

9.6 Component Level Communication

Communication between nodes and equipment at each node (such as inverters and data loggers) shall be copper Ethernet.

- Transmission speed shall be 100BASE-T.
- Ports shall be standard Ethernet RJ-45
- Cabling shall be a minimum of CAT 5E with a jacket rating of CMR or CMP.

Communication between components such as data loggers, sub meters, inverters, weather station and Sensor I/O components shall comply with the component manufacture's installation instructions.

- The cable shield shall be grounded on one end of the cable only.
- Termination resistors shall be used at each end of any daisy chain connections in accordance with device manufacturer instructions.

Inverters that have a proprietary communication protocol shall be ordered with conversion devices to connect them to an Ethernet network.

9.7 Sensor Level Communication

Cabling shall be specified by the component manufacturer or provided with the sensors.

Sensor cabling that is not completely contained within enclosures and conduit shall be outdoor and UV rated.

Sensor cabling shall not exceed the manufacturer's recommended maximum length.

9.8 Metering

AC Metering shall be provided by Contractor and located at the LV Switchgear. The Contractor DAS shall communicate with meters.

The measurement of the energy produced by the photovoltaic systems shall be integrated into the DAS. For the purpose of using and processing the measurement data, the monitoring system shall present the information taking into account the following considerations:

- Frequency (resolution): Generation data in kWh of the PV solar system should be available at least in hourly resolution, ideally every 15 minutes.
- Availability: ideally data for the period (h-1)-h is available at time h.
- Data Format: Instantaneous power meter readings should be available in a cumulative format with date and time recording, not in increments.
    - Example accumulated readings: (09h00;120kWh;ID)-(09h15;150kWh;ID)- (09h30;170kWh;ID)-
    - Example of incremental readings: (09h00;0kWh;ID)-(09h15;30kWh;ID)- (09h30;20kWh;ID)-
- Data collection: The measured data must be available in a cloud service in order to be accessed through an API.
- Meter Type: In order to facilitate the integrity and security of the electricity generation measurement data, it is recommended to use an intelligent meter with asymmetric encryption (optional).

9.9 Monitored Data Points

9.9.1 Meteorological Stations

- Irradiance (horizontal and plane of array).
- Ambient air temperature.
- Back of module temperature.
- Wind speed.
- Wind direction.

9.9.2 Inverter Performance

Real time AC and DC electrical characteristics, including power, energy, voltage, current, frequency, power factor, inverter status, fault codes and diagnostics, and all data available from inverter system.

DC circuit earth fault monitoring at the inverter input

9.9.3 Combiner Boxes and Strings

DC string current, if available.

DC string voltage, if available.

Combiner enclosure temperature, if available.

Combiner status and fault codes, if available.

9.10 Meteorological Stations

The total number of meteorological stations shall be determined by the Contractor for the Site to be strategically located throughout the facility.

The meteorological station shall be compatible with the DAS.

9.10.3 The meteorological station shall include, at minimum, the following:

- Data logger shall be equipped/capable of the following:
  - Sample each sensor at no greater than 5 second intervals.
  - Calculate minimum, maximum, average and standard deviation values for the measurements at 1, 5 and 15 minute intervals.
  - Local data buffering.
  - Battery backup power.
- One (1) global horizontal (GHI) secondary standard pyranometer.
- One (1) plane of array (POA) secondary standard pyranometer.
- One (1) back of module temperature sensor.
- One (1) Ambient air temperature sensor housed in a solar shield, with an accuracy of ±1ºC.
- One (1) Wind speed sensor, with an accuracy of 1 m/s, installed at or above 3-meter height.
- One (1) Wind direction sensor with an accuracy of ±5º.

9.11 DAS Control Equipment

System data shall be recorded with the following detail:

- The main AC Meter data shall be recorded at 1-minute intervals.
- DC meter data shall be recorded at 1-minute intervals.
- Inverter data and fault codes shall be recorded at 1-minute intervals.
- Environmental data shall be recorded at 1-minute intervals.

The DAS shall have provisions for full remote access.

A firewall shall be installed between the Project network and the incoming connection.

Single pair instrument cable shall be rated 300/500V minimum according to the relevant local standards, with XLP or PVC insulation.

Multiple pair instrument cable shall be rated 300/500V minimum according to relevant local standards, with XLP or PVC insulation.

Single or multiple twisted shielded pair cable shall include a drain wire and an overall PVC jacket.

Data communications cable shall be stranded copper 0.34 mm2 minimum, twisted pair, shielded.

External Interfaces

- An external interface shall be available to authorized users to view the DAS screens through an Internet browser.

Calculated Points

- The DAS shall allow user to create calculated data points that calculate new values based on the values of any monitored or calculated data points.
- Calculated data points shall be available for alarming and trending.

10 EQUIPMENT SPECIFICATIONS

10.1 General

All equipment located outdoors shall have enclosures complying with CSA, IEC and/or NEMA requirements for wet and high salinity locations.

All equipment shall be new.

Enclosures shall have a minimum rating of IP54 for electromechanical equipment and IP54 for electronic equipment and be corrosion resistant.

All equipment shall be specified with the Project-specific design conditions indicated in Section 5 of this Annex VII.1.

All equipment shall be specified to ensure all required System Operating Conditions defined in er Section 7 of this Annex VII.1.

10.2 PV Modules

PV Modules shall have glass covered with antireflective coating.

PV Modules shall be listed as Tier 1 in the Q2 2020 Bloomberg New Energy Finance solar PV module list.

PV Modules shall be of either monocrystalline or polycrystalline type.

PV Modules shall have a minimum efficiency of 19.5%.

PV Modules shall have wind pressure uplift rating of at least 4,000 Pa.

PV Modules shall be certified to CSA or UL standards or IEC 61730 and the applicable part of IEC 61215.

PV Modules shall be installed according to the manufacturer's installation instructions and in compliance with the NEC 2017.

PV Module manufacturer shall be certified to ISO9001:2000 and ISO140001:2004.

PV Modules shall have a minimum 10-year manufacturer's warranty covering defects and workmanship that provides for all shipping costs and parts required to replace or repair warranty-eligible failures.

PV Modules shall have a minimum 25-year manufacturer's warranty covering product performance that incorporates a linear degradation guarantee with peak power rating at year 25 not less than 80% of the original peak power rating identified on the product nameplate.

PV Modules shall be marked with a unique serial number.

PV Modules shall be supplied with original factory flash test data including, at minimum, serial number, model number, manufacture date, Isc, Voc, Imp, Vmp and Pmp.

PV Modules shall be supplied with a copy of CSA, UL and/or IEC certification reports indicating compliance for the model numbers used and indicating the certification is in force as of the dates of module manufacture.

PV modules shall be supplied with documentation confirming that the PV modules have been manufactured in accordance with the manufacturer's specifications.

PV modules shall be installed so as to achieve the wind load requirements indicated in Section 5.3.3.

10.3 PV Module Mounting Structures

PV Module mounting structures should comply to the extent possible with the grounding and bonding requirements of the UL 2703.

PV Module mounting structures shall be designed in accordance with applicable building code requirements.

PV Module mounting structures shall be aluminum or hot dipped galvanized steel in accordance with ASTM A123.

For any components where the galvanization is disturbed due to factory processing after the galvanization, those surfaces shall be repaired in accordance with ASTM A780 and A780M-09.

PV Module mounting structures shall be supplied with installation manuals, list of required fasteners and a torque chart for all fasteners providing structural support.

Where nuts and bolts are used as means of fastening PV Modules to mounting structure the nuts shall be vibration resistant.

The PV Module mounting structures shall have a minimum 5-year manufacturer's warranty covering defects and workmanship that provides for all parts and labor required to replace or repair warranty-eligible failures.

10.4 Combiner Boxes

Components within combiner boxes shall be certified to IEC 61439-2 or IEC 50178, or alternatively to UL 1741.

Combiner boxes shall be rated IP54.

Combiner boxes shall be equipped with approved means of drainage for accumulated moisture which does not compromise enclosure warranty or allow entrance of contaminants or rodents into the enclosure.

Combiner boxes shall have provisions for a universal pad lock.

Combiner boxes shall incorporate overcurrent protection for each String.

Combiner boxes shall utilize "touch-safe" fuse holders.

Combiner boxes shall be equipped with a load-break disconnect switch.

Combiner boxes shall include a touch-safe barrier over exposed terminations or buses.

Combiner boxes shall be compatible with the inverters.

Combiner boxes terminals for DC output cables shall include provisions to accommodate compression ring lugs.

Terminal ratings for the DC output cables shall be 90ºC and rated for copper and aluminum.

Combiner boxes shall be labeled to comply with the requirements of the NEC 2017 or relevant IEC standards and at minimum include:

- Maximum voltage.
- Operating voltage.
- Operating current.
- Short-circuit current rating.
- Short-circuit current rating per pole.
- Warning language that fuses are energized if the PV Modules are exposed to light even if the inverter is not running.

10.5 Re-Combiner Boxes

These requirements apply to the inverter if the re-combiner function is supplied as part of the inverter.

Re-combiner boxes shall comply with IEC 61439-2 or IEC 50178, or alternatively UL 1741.

Re-combiner boxes shall be rated IP54 or better.

Re-combiner boxes shall be equipped with approved means of drainage for accumulated moisture which does not compromise enclosure warranty or allow entrance of contaminants or rodents into the enclosure.

Re-combiner boxes shall have provisions for a pad lock.

Re-combiner boxes shall incorporate overcurrent protection for each combiner circuit.

Re-combiner boxes shall be of the “smart” type with current monitoring of each combiner box circuit.

Re-combiner boxes shall be compatible with the inverters.

Re-combiner box monitoring shall be compatible with the DAS.

Re-combiner boxes terminals for DC cables shall include provisions to accommodate compression ring lugs.

Terminal ratings for the DC cables shall be 90ºC and rated for copper and aluminum.

Re-combiner boxes shall be labeled to comply with the requirements of the NEC 2017 or relevant IEC standards and at minimum include:

- Maximum voltage
- Operating voltage
- Operating current
- Short-circuit current rating
- Short-circuit current rating per pole

- Warning language that circuit breakers are energized if the PV Modules are exposed to light even if the inverter is not running.

Re-combiner boxes shall also be labeled to comply with the DC disconnect marking requirements of the NEC 2017 or relevant IEC standards.

10.6 Inverters

Inverters shall be as specified in Section 5 of this Annex VII.1, unless otherwise approved by Contracting Agency.

Inverters shall be utility-interactive (not standalone).

Inverters shall meet the requirements of UL 1741.

Inverters and power and control electronics shall be housed in enclosures rated IP54 or above.

Inverters shall have a 3-phase AC output.

Inverters shall not include an integrated transformer and shall be designed for operation with an external medium voltage transformer.

Inverters shall have a California Energy Commission-weighted efficiency of at least 97.5%.

Inverters shall have a maximum DC voltage rating of 1,000 Vdc.

String configuration and inverter selection shall be reviewed and approved by Contracting Agency.

Inverters shall have an operating temperature range of 15ºC to 40ºC at full rated power.

Inverter shall be capable of operating with a power factor of 0.90 leading to 0.90 lagging.

Inverters shall be capable of completely automatic unattended operation, including wake up, sleep mode, synchronization and disconnect.

Inverters shall have Rapid Shutdown capability.

Inverters shall be capable of being configured with Hawaii frequency ride through settings.

Inverters shall be capable of communicating with the DAS and allow for monitoring and control of set points.

Inverter manufacturer shall be certified to ISO9001:2000 and ISO140001:2004.

The inverter shall not generate audible noise exceeding 68 db(A) at 10 meters during operation at full-rated power. Inverter noise shall comply with applicable local ordinances.

Inverters shall be supplied with installation, operations and maintenance manuals in hard copy and PDF formats.

Inverters shall be supplied with a complete points list that provides sufficient information for a DAS engineer to communicate with the inverter and interpret all data points, including read/write status and data type.

All inverters shall be of identical manufacturer and model number unless approved by Contracting Agency.

Inverters shall also comply with Section 10.5 of this Annex VII.1 if the re-combiner function is integrated into the inverter.

Inverters shall be completely factory-built, assembled, wired and tested as a complete unit. If it is necessary to disassemble the units for ease of transportation, all materials and instructions shall be provided for field re-assembly.

Inverters shall have a minimum 10-year manufacturer's warranty covering defects and workmanship that provides for all shipping costs, parts and labor required to replace or repair warranty-eligible failures.

Inverter warranty shall allow for unlimited usage at full rated power during the term of the warranty.

10.7 Low Voltage Cable and Terminations (1,000 V or less)

All conductors shall be stranded, single conductor cables.

All conductors shall be rated for 90ºC in wet locations.

Conductors utilized in PV circuits shall be specified in accordance with the applicable requirements of the NEC 2017.

Ungrounded conductors utilized in PV circuits shall have red (if positive) or black (if negative) insulation or jacketing.

Grounded conductors utilized in PV circuits shall have green insulation or jacketing.

All conductors between PV Modules and combiner boxes shall be copper.

Conductors between combiner boxes and inverters shall be copper.

Terminations for all conductors shall be rated for 90ºC and for the conductor material (copper).

10.8 Low Voltage Switchgear for AC Collection System and Junction Enclosures

Switchgear shall be in a IP54 enclosure.

Switchgear shall conform to appropriate standards for purpose and other applicable parts for metal-enclosed switchgear.

Switchgear shall be metal enclosed made of steel with protective coating against salt corrosion.

Switchgear shall be provided with LOTO capabilities including pad-lockable with ON – OFF and OFF - Earth switch positions.

Switchgear shall provide visible indication of switch position.

10.9 Surge Arrestors

Surge arrestors shall be station class.

Surge arrestors shall conform to IEC 60099, Parts 4, 5, and 6.

10.10 Meters

Meters shall be ANSI C12.2 revenue grade meters.

Meters shall support the Modbus and DNP 3.0 communication protocols.

10.11 Air Conditioning (AC) Equipment

Energy Efficiency Ratio (EER): Energy Efficiency Ratio shall be not less than 12.0 for unit smaller than 6 kW (20,000 Btu/hr), and not less than 13.0 for unit 6 kW (20,000 Btu/hr) and larger. Technical specifications regarding energy efficiency of proposed air conditioning equipment shall be provided with the bidder's quote. Installed units shall be of inverter type with multi speed fan motors.

Applicable AHRI Standards: Units shall be listed in the corresponding ARI Directory of Certified products using the following testing procedures (or equivalent procedure):

1. Air Source Unitary heat pumps with capacity less than 19 KW (65,000 Btu/hr), Comply with AHRI 210/240 (Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment).

2. Air Source heat pump with capacity above 19KW (above 65,000 Btu/hr, Comply with AHRI 340/360 (Performance Rating of Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment).

Refrigerant Circuit: A minimum of two circuits is required. Each refrigerant circuit shall have independent fixed orifice or thermostatic expansion devices, service pressure ports, and refrigerant line filter driers factory installed as standard. An area shall be provided for replacement suction line driers.

Install air conditioning equipment according to manufacturers printed instructions.

Refrigerant piping shall be sized, selected, and designed either by the equipment manufacturer or in strict accordance with the manufacturer's published instructions. : A separate circuit for each compressor, with externally equalized thermal-expansion valve with // adjustable superheat //, filter-dryer, sight glass, high-pressure relief valve, and charging valves.

1. Install piping as short as possible, with a minimum number of joints, elbow and fittings.

2. Install piping with adequate clearance between pipe and adjacent walls and hangers to allow for service and inspection. Space piping, including insulation, to provide 25 mm (1 inch) minimum clearance between adjacent piping or other surface. Use pipe sleeves through walls, floors, and ceilings, sized to permit installation of pipes with full thickness insulation.

3. Locate and orient valves to permit proper operation and access for maintenance of packing, seat and disc. Generally, locate valve stems in overhead piping in horizontal position. Provide a union adjacent to one end of all threaded end valves. Control valves usually require reducers to connect to pipe sizes shown on the drawing.

4. Protect refrigerant system during construction against entrance of foreign matter, dirt and moisture; have open ends of piping and connections to compressors, condensers, evaporators and other equipment tightly capped until assembly.

Insulation: Minimum 25-mm (1-inch) thick, // neoprene coated// aluminum foil faced// glass fiber duct liner on cabinet interior and control panel.

Perform startup checks according to manufacturer's written instructions.

The Commissioning Agent will observe startup and contractor testing of selected equipment. Coordinate the startup and contractor testing schedules with the Commissioning Agent. Provide a minimum of 7 days prior notice.

Test controls and demonstrate its compliance with project requirements. Replace damaged or malfunctioning controls and equipment and retest the equipment to the satisfaction of the Commissioning Agent.

Furnish test reports.

11 Defects Liability, Performance Verification, Operation & Maintenance, and Operating Spare Parts and Tools

This section outlines post-commissioning requirements as it pertains to repair of equipment and workmanship defects, verification of the Energy Efficient Air Conditioning Systems and PV system energy production performance, and system operation and maintenance. It also outlines information to be provided by the Contractor regarding operating spare parts that would be required for the long-term operation and maintenance of the PV system.

11.1 Defects Liability

There shall be a defects liability period of 24 months commencing from the Completion Date. During the defects liability period the Contractor shall do the following at no additional cost to Owner:

- Contractor shall perform the services set forth in Section 11.1.2, in a prudent, reasonable, and efficient manner and in accordance with the operating data, design drawings, specifications, vendors' manuals, warranty requirements, maintenance and safety procedures.

- Contractor shall provide all labor as is required to perform the services as set forth in Section 11.1.2. All individuals retained by Contractor to perform the services shall be employees or subcontractors of Contractor.

- Contractor shall maintain the PV system operating logs, records, and reports that document the operation and maintenance of the PV system. Contractor shall maintain current revisions of drawings, specifications, lists, clarifications and other materials related to operation and maintenance of the Energy Efficient Air Conditioning Systems and the PV system provided.

- Contractor shall provide the Owner with reasonably necessary assistance in connection with Owner’s compliance with any reporting requirements to funders, the Utilities Regulation or any other parties to which Owner is obligated to provide information relating to the PV system.

- If an emergency endangering the safety or protection of persons, the Energy Efficient Air Conditioning Systems and the PV system, or property located near the PV system occurs, Contractor shall promptly notify Owner and take all necessary action to attempt to prevent or mitigate any such threatened damage, injury or loss.

- Contractor shall provide all the needed consumables.

11.1.2 Contractor Defects Liability Minimum Requirements

Preventative Maintenance for the PV system

Item Number	Service Description	Frequency
1.	Remotely monitor all PV system data and communications including production and any system errors.	Continuously
2.	Address any system errors within 5 business days of alert.	Upon Occurrence
3.	Visual inspection of racking, frames, and overall mounting structure for damage or fatigue. Also, confirm that base/roof attachment is stable to manufacturer's recommended standard.	Once every six months
4.	Visual inspection of PV Modules, inverters, DAS equipment, meteorological station, combiner boxes, LV switchgear, AC meter and electrical systems including ensuring that PV wiring is secure, ground connections are intact, weatherproof boxes are sealed and dry, and conduit is undamaged.	Once every six months
5.	Visual inspection of general site conditions. Note any shading concerns.	Once every six months
6.	Record AC meter readings.	Monthly
7.	Perform inverter preventive maintenance per manufacturer's operating guidelines including cleaning cooling fins, fans and screens.	Once every six months
8.	Document inspection findings, AC meter readings and inverter preventive maintenance activities and provide report to Owner.	Once every six months

Issue Resolution

- Contractor shall within three (3) business days of being made aware, respond to a request from Owner or an issue detected by PV system sensors, meters, or monitoring, or a defect identified during preventive maintenance inspections.

- Contractor shall repair any workmanship defects in a manner reflective of Good Industry Practices.

- Contractor shall perform troubleshooting on any malfunctioning equipment and shall repair or replace defective equipment at no additional cost to Owner.

Preventative Maintenance for the Energy Efficient Air Conditioning Systems

Item Number	Service Description	Frequency
1.	Check and confirm refrigerant level to keep its efficiency at factory standards.	Once every six months.
2.	Inspect and confirm that fins and coils are kept to their efficiency at factory standards.	Once every six months.
3.	Inspect and ensure filters are at factory standards.	Once every six months.

Issue Resolution

- Contractor shall within three (3) business days of being made aware, respond to a request from Owner an issue detected or a defect identified during preventive maintenance inspections.
- Contractor shall repair any workmanship defects in a manner reflective of Good Industry Practices.
- Contractor shall perform troubleshooting on any malfunctioning equipment and shall repair or replace defective equipment at no additional cost to Owner.

11.2 Performance Verification

During the defects liability period, the Contractor shall be responsible for the monitoring and documenting of the Energy Efficient Air Conditioning Systems, Lighting System, and the Solar PV system. The PV system energy production shall be via the Contractor-supplied AC metering system in order to verify that projected energy production is being achieved. Additionally, the Contractor shall define and implement strategies to measure the energy savings for the Air Conditioning and Lighting interventions to be implemented and provide timely reports on the energy savings base on the implemented strategies.

Contractor shall provide to Owner on a quarterly basis a report comparing the monthly energy production recorded with that projected by the Contractor's solar PV system model that was provided by Contractor to Contracting Agency during the Project's detailed engineering phase.

11.2.1 Shortfall in Energy Savings

Contractor must provide evidence (weather records, grid outage data, etc.) justifying any shortfalls in energy production or savings, i.e., where actual energy production is lower than projected energy production or savings for the quarter in question.

Should it be determined that the energy production shortfall is due to a technical issue with the solar PV system, Air Conditioning or Lighting systems the Contractor must immediately correct the issue at no additional cost to Owner and provide evidence to Owner that said corrections have been made.

11.3 Operating Spare Parts Priced List

Contractor shall submit to Contracting Agency, not later than 60 days as of the Completion Date a priced list of recommended Operating Spare Parts for the operation of the Project.

The recommended Operating Spare Parts list shall incorporate manufacturer- recommended components for all Project equipment.

The recommended Operating Spare Parts list shall incorporate consumable items required to perform the manufacturer-recommended preventative maintenance for Project equipment.

If Operating Spare Parts require special storage requirements, special tools, vehicles or other non-standard equipment in order to replace such Operating Spare Parts, these conditions shall be noted on the Operating Spare Parts list.

If Operating Spare Parts require calibration while in storage, the calibration requirements shall be noted on the Operating Spare Parts list.

Operating Spare Parts quantities shall be based on the quantity required for the first 5 years of operation after the Defects Liability Period and based on the quantity of associated equipment installed at the Project.

Annex VII.2

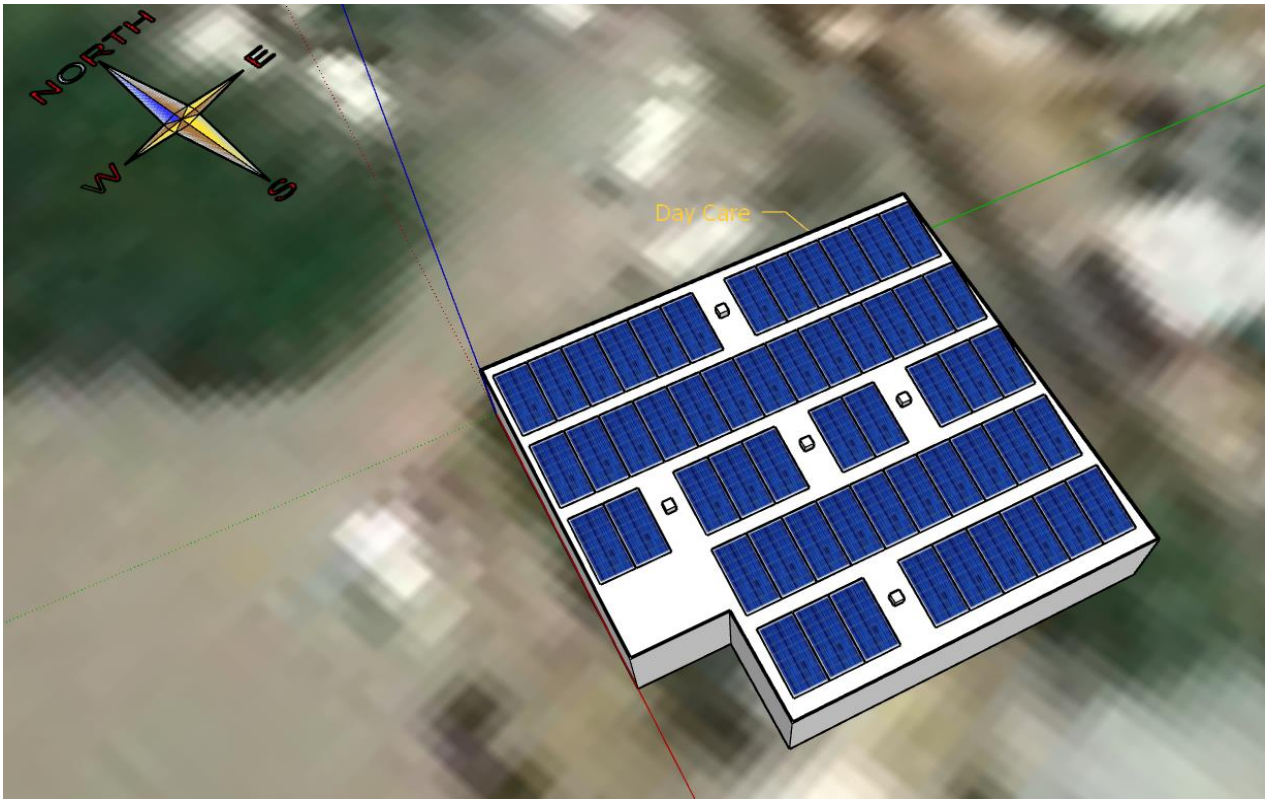
Works 1 Rooftop Solar PV systems

Site Plan and Other Characteristics

Annotto Bay Hospital

Site Plan for Annotto Bay Hospital, showing the locations of the buildings with the proposed rooftop solar PV modules.

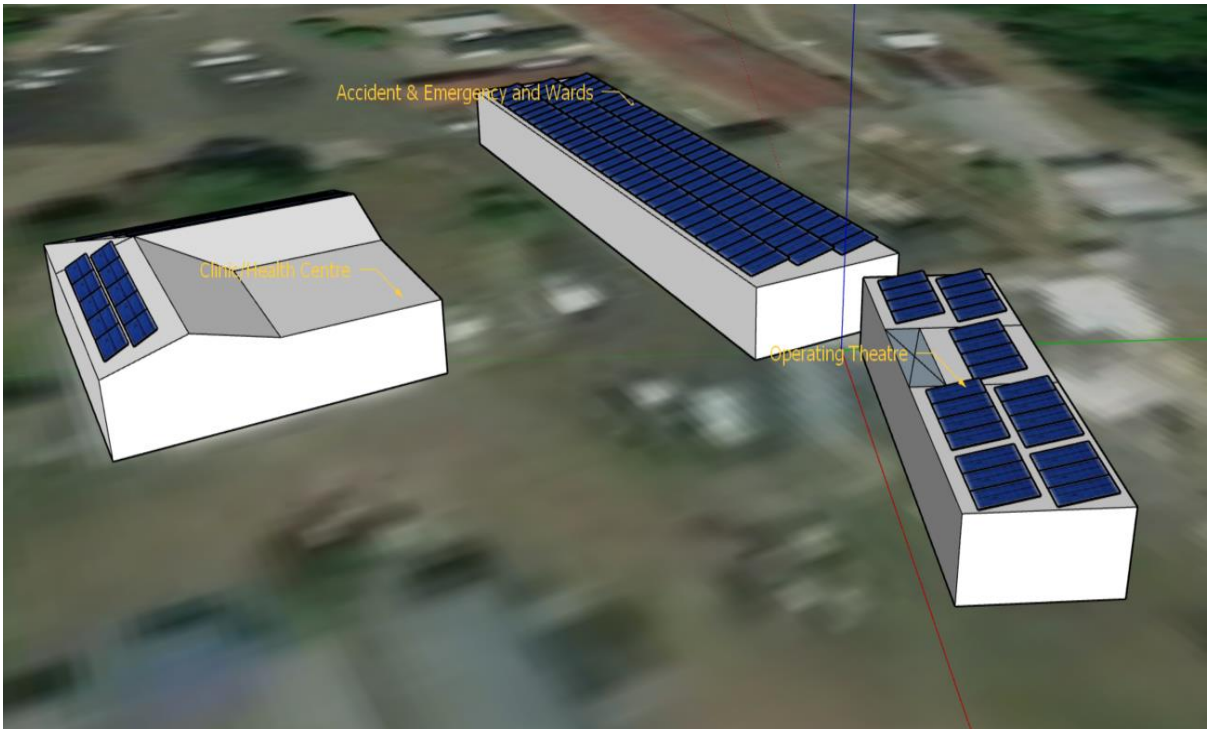
Bustamante Children Hospital



Site Plan for Bustamante Children Hospital, showing the location of the Day Care building with the proposed rooftop solar PV modules.

Port Maria Hospital

Site Plan for Port Maria Hospital, showing the locations of the buildings with the proposed rooftop solar PV modules.

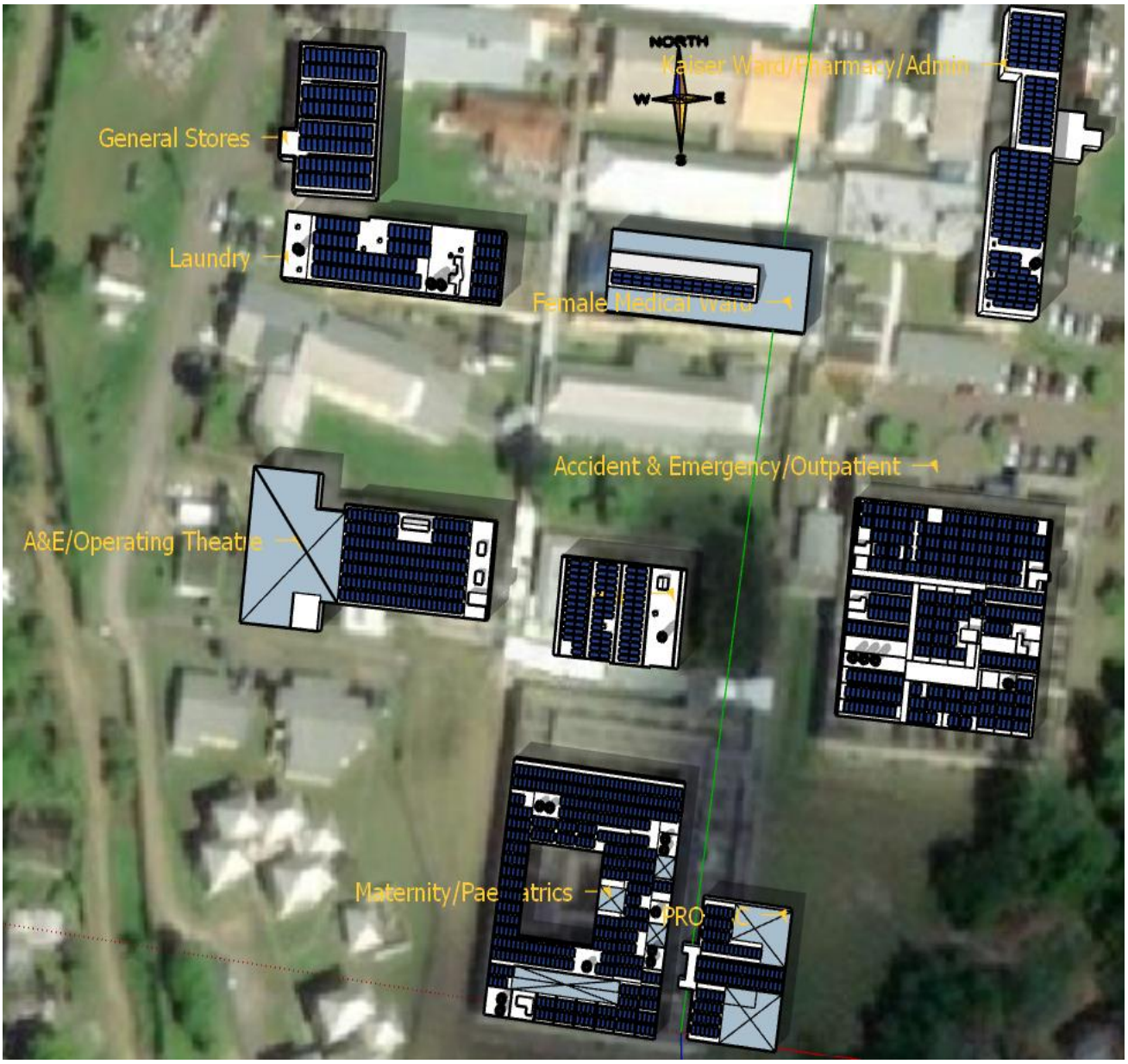


Side view of the proposed rooftop solar PV modules.

Spanish Town Hospital

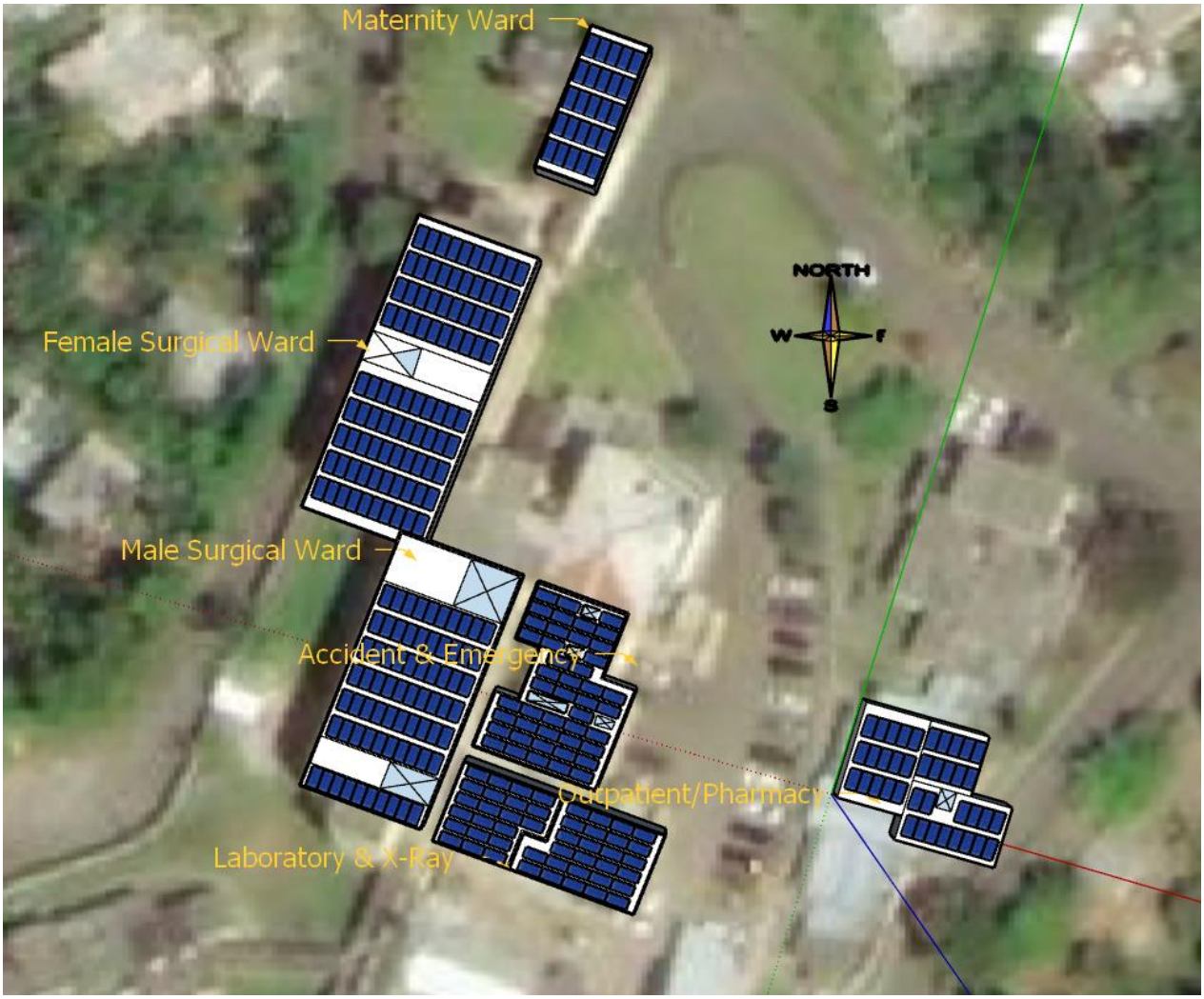
Site Plan for Spanish Twon Hospital, showing locations of buildings with the proposed rooftop solar PV modules.

St. Ann's Bay Hospital



Site Plan for St. Ann's Bay Hospital, showing locations of buildings with the proposed rooftop solar PV modules.

Port Antonio Hospital



Site Plan for Port Antonio Hospital, showing locations of buildings with the proposed rooftop solar PV modules.

Annex VII.3

JAMAICA PUBLIC SERVICE INTERCONNECTION TECHNICAL GUIDELINES

Summary of Interconnection Technical Guidelines for
Renewable Energy Systems 0-100 kW under Standard Offer Contract

(Extract from JPS Guide to Interconnection of Distributed Generation)

This document is a summary of the JPS Guide to Interconnection of Distributed Generation. Reference must be made to the JPS Guide to Interconnection of Distributed Generation for full details of the JPS Interconnection Technical Guidelines.

1.0 Overview

The requirements and specifications outlined in this paper are applicable to all classes of distributed generation, unless otherwise specified. The minimum protection and safety devices and other requirements imposed in this document are intended to provide protection for the JPS system and its other customers. They are not imposed to provide protection for the customer's generation equipment; this is the sole responsibility of the customer. These requirements are in addition to requirements outlined in the JPS Guide to Interconnection of Distributed Generation.

Beyond the requirements presented here in this document, the Distributed Generator (DG) facility must meet all applicable national, local and other JPS safety and construction codes.

2.0 General Characteristics of JPS Distribution Grid

All distribution feeders in the JPS' distribution system are supplied radially from a single source (substation). In some cases, some feeders may have alternate points of supply, but will be operated with more than one source of supply only momentarily during switching operations. JPS' distribution feeders operate at the following voltages:

Primary Voltage

Phase-phase/phase-neutral: 24/13.8 kV star, 13.8 kV delta, 12/6.9 kV

star. Secondary Voltage

Single phase 110/220 V, three phase 220 V delta or 415/240 V

star System Voltage

JPS' distribution system operates within the range of ±5% of the nominal voltage. The System shall be designed to ensure that under normal and planned contingency conditions, voltages at all connection points and buses are to be within:

a. ± 5% of nominal voltage under normal conditions
b. ±6% of nominal Voltage under planned contingency

conditions System Frequency

The nominal frequency of JPS' system is 50 Hz. During normal operation (steady state), the frequency may deviate between 49.8 and 50.2. Under contingencies, the frequency deviations may be larger.

Fault and Line Clearing

JPS uses automatic reclosing to maintain the reliability of the Distribution Network. The DG operator needs to be aware of line reclosing when designing or purchasing protection schemes to ensure that the DG ceases to energize before the automatic reclosing of JPS substation reclosers (recloser closes 2 seconds after opening). Grid-tied inverters manufactured to the UL 1741 Standard are recommended for this purpose. Systems manufactured to other international standards may be accepted subject to approval of JPS/BSJ.

3.0 General Technical Requirements for DG Facilities

3.1 Electrical Diagrams

The applicant shall submit an electrical single-line schematic diagram, a three- wire protection diagram and a tripping logic diagram that shall be reviewed and approved by a Professional Electrical Engineer registered in Jamaica with the completed standard application form. ANSI symbols shall be used in the electrical diagrams to show the following:

(a) Generator and/or inverter.

(b) Point where the DG facility is electrically connected to the customer's electrical system (interconnection point). JPS will determine the point of electrical connection to the grid, or the point of common coupling (PCC). Please reference Appendices 2-7. All interconnections must be compliant with the NEC and all local electrical standards. (c) Lockable interconnections disconnect switch.

(d) Method of grounding, including generator and transformer ground connections.

(e) Protection functions and systems.

(f) Generator disconnect switch/breaker Drawings are not limited to the above items.

3.2 Anti-Islanding Systems

Upon loss of voltage in one or more phases of the JPS distribution system, the DG facility shall automatically disconnect from JPS' distribution network prior to the enclosure of JPS protection equipment. Local islanding detection is required.

3.3 Voltage

Voltage variations at the PCC are limited to ± 5% of the nominal voltage under normal operating conditions and ± 6% under contingency conditions. However, extreme operating conditions may occur causing voltages to go in the region of ± 10%. The DG must be capable of operating satisfactorily within the extreme voltage limits. The DG facility shall not actively regulate the system voltage.

Table 1

System Voltages	Voltage Variation Limits for Secondary Distribution Voltages			
	Extreme	Operating		Conditions
		Normal and Contingency Operating Conditions		
Single Phase	(-10%)	(-6%)	(+6%)	(+10%)
110V	99.0V	103.4V	116.6V	121.0V
220V	198.0V	206.8V	233.2V	242.0V
Three Phase-Delta				
220V	198.0V	206.8V	233.2V	242.0V
Three Phase-Wye				

240V	216.0V	225.6V	254.4V	264.0V
415V	373.5V	390.1V	439.9V	456.5V

3.4 Frequency

The generators at the DG facility must operate at a nominal frequency of 50Hz (±0.2 Hz). For frequencies outside of this band, as given in table 3, the DG is required to trip off JPS Distribution System.

3.5 Power Factor

The DG facility shall be capable of operating in the power factor range of 0.90 lagging to 0.95 leading.

3.6 Power Quality

The DG facility must not negatively impact the power quality of JPS' distribution system. IEEE Std. 519 should be consulted to determine industry standards for power quality along with the requirements in this document. Power quality parameters to be taken into consideration are:

- Harmonics
- Flicker
- Voltage sags and swells
- Voltage and current imbalance

3.7 Grounding Issues

It is the responsibility of the interconnection customer to provide the required grounding for the generation system. The DG must be grounded as per the manufacturers' recommendations and shall be in accordance with the requirements of the Government Electrical Inspectorate (GEI). The recommended standard for this is the IEEE Std. 142-1991.

3.8 Disconnect Switch (Point of Disconnection)

The DG facility shall install and maintain a visible open, manually- and gang- operated load-break disconnect switch ("disconnect switch") capable of being locked in a visibly "open" position by a standard JPS padlock that will completely isolate the customer's generating facility from the JPS system, in order to establish the safety isolation required for work on the distribution system.

3.9 Protection Requirements

Abnormal conditions in the DG facility and on JPS' distribution system require that the DG facility respond and protect itself and JPS distribution system. This response contributes to the safety of JPS' and the DG personnel and the general public and avoids damage to DG facility, JPS and JPS customers' equipment.

At a minimum, the DG facility shall incorporate the following protective functions:

- Anti-Islanding
- Under/over-voltage trip
- Over-current trip
- Under/over-frequency trip

3.10 Voltage and Current Imbalance

The DG facility must not further deteriorate existing unbalance conditions at the PCC and the distribution system. The phase-phase voltage unbalance of three phase distributed generators must not be greater than 1% as measured with balanced three phase loading and with no load. The current imbalance for a three-phase system as measured at the customer's service entrance section shall not be greater than 10% at any time.

3.11 Synchronization

The DG that can generate an AC Voltage Waveform independent of JPS's grid shall be connected in parallel only in combination with its synchronizing capabilities. The DG shall synchronize to JPS's Grid while meeting the stipulated interconnection technical requirements.

4.0 Interconnection of Grid-Tied Inverters

General

Inverter connections represent a continuous parallel connection with the Distribution System. The design of such inverters shall either contain all necessary protection to prevent unintentional islanding, or the DG owner shall install conventional protection to affect the same protection. Grid-tied inverters are required to produce a sine wave output and be synchronous with JPS Distribution Grid. See Appendix 1 for the net billing application process and Appendices 2-7 for the various grid-tied inverter arrangements.

Inverter Certification

Prior to installation, the inverter shall be Type-Certified for interconnection to the electrical power system. The certification will confirm its anti- islanding protection and power quality related levels at the Point of Common Coupling. Also, utility compatibility should be approved through UL listing of the model

(UL 1741). Systems manufactured to other international standards may be accepted subject to approval of JPS/BSJ.

Three Phase Operation

For three-phase operation, the inverter control must also be able to detect and separate for the loss of one phase.

Disconnect Switch

The inverter shall not be used as a safety isolation device. A visible disconnect is required for safely isolating the Distributed Generation when connecting with an inverter. (Please see Appendices 2-7).

Transformer vs Transformerless

Grid-tied inverters of both the transformerless and transformer type are accepted for interconnection to the JPS Distribution Network, providing that they are compliant with the stipulated interconnection requirements. For inverters whose output does not match the voltage of the Distribution Network at the Interconnection Point, transformers may be required to bring the output voltage within a suitable operating range for synchronism with the JPS Distribution Grid.

For split single phase services, due to the configuration of the Grid, a split-phase transformer is strongly recommended for interconnection of European type 240V (L - N) 50 Hz single phase inverters. However, some manufacturers state that, based on their inverter design, the transformer may be excluded. In this event, JPP requires that:

(i) The inverter is equipped with ground fault protection; and

(ii) The manufacturer of the inverter or his agent must supply a statement approving the interconnection of same inverter with a split-phase grid configuration.

JPS will not accept responsibility for any equipment malfunction or damage arising from the Customer-Generator’s choice of configuration.

Over/Under Voltage Protection

On detection of a system over or under voltage, the DG shall cease to energize the Distribution Network according to the following table 2:

Table 2

Voltage Condition (% of nominal voltage)	Maximum time to disconnect
V<50%	0.16 secs – (8 cycles)
50% < V < 88%	2 secs – (100 cycles)
110 % <V <120%	1 sec – (50 cycles)
V > 120%	0.16 secs – (8 cycles)

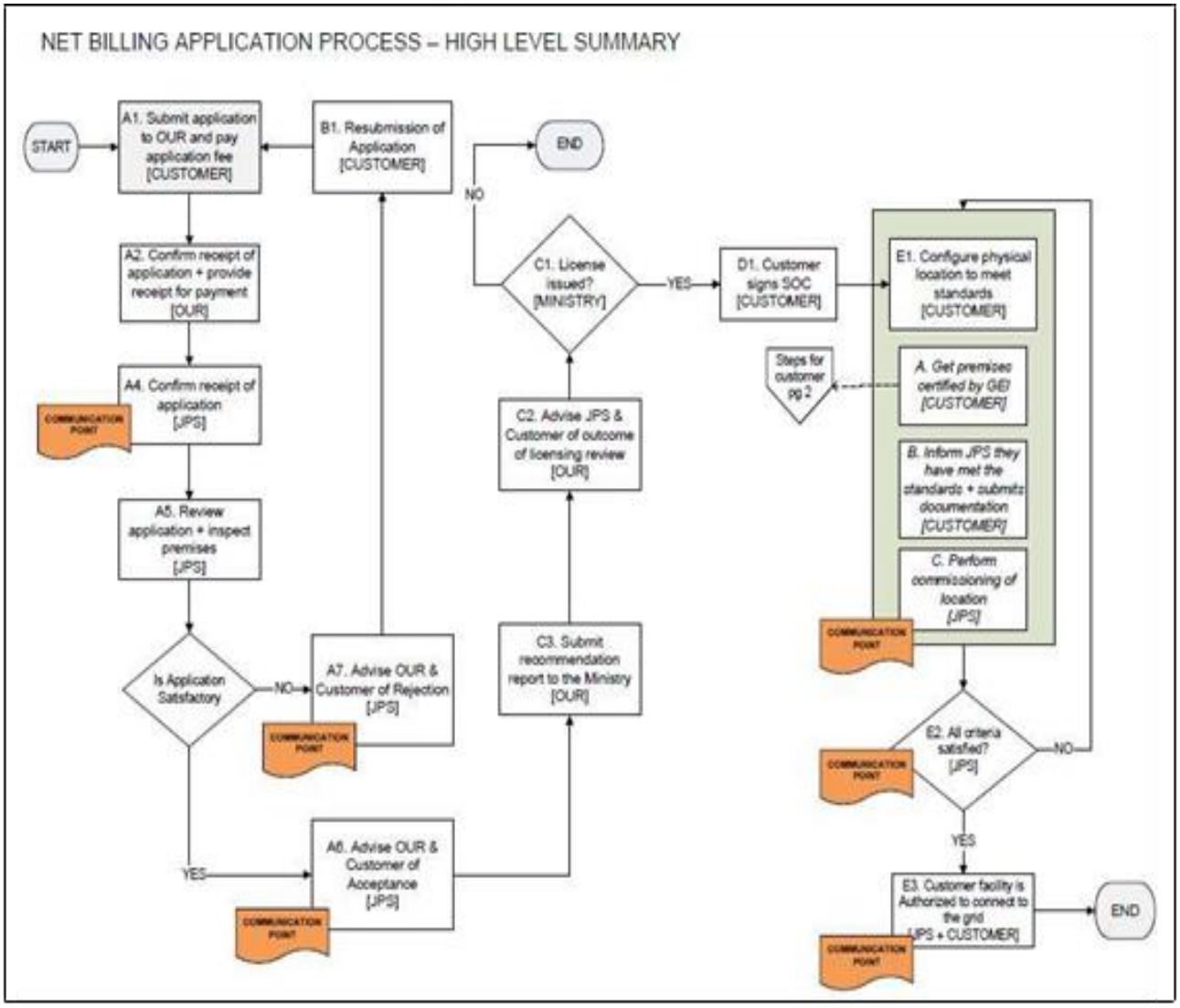
Over/Under Frequency Protection

The DG shall cease to energize during over/under frequency conditions within the maximum delay times shown in table 3 below and shall not reconnect until JPS's Grid has stabilized.

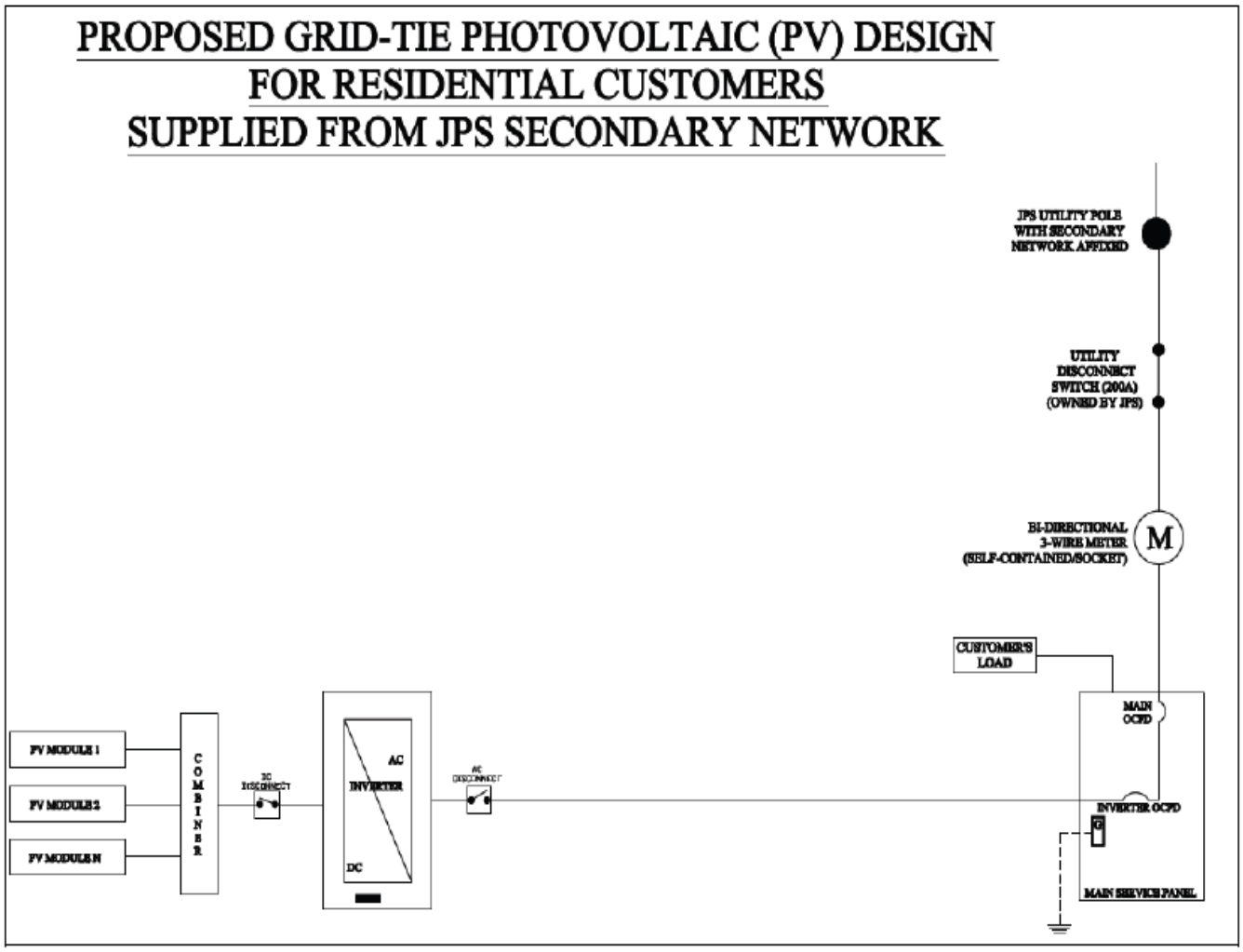
Table 3

JPS Distribution System Voltage Condition	Frequency Condition	Maximum Time to Disconnect
Rated Voltage	Frequency < 48Hz	0.16 secs – (8 cycles)
Rated Voltage	Frequency > 50.5Hz	0.16 secs – (8 cycles)

APPENDIX 1


NET BILLING APPLICATION PROCESS – HIGH LEVEL SUMMARY
START
A1. Submit application to OUR and pay application fee [CUSTOMER]
B1. Resubmission of Application [CUSTOMER]
END
NO
A2. Confirm receipt of application + provide receipt for payment [OUR]
C1. License issued? [MINISTRY]
YES
D1. Customer signs SOC [CUSTOMER]
E1. Configure physical location to meet standards [CUSTOMER]
Steps for customer pg 2
A. Get premises certified by GEI [CUSTOMER]
B. Inform JPS they have met the standards + submits documentation [CUSTOMER]
C. Perform commissioning of location [JPS]
A4. Confirm receipt of application [JPS]
C2. Advise JPS & Customer of outcome of licensing review [OUR]
A5. Review application + inspect premises [JPS]
Is Application Satisfactory
NO
A7. Advise OUR & Customer of Rejection [JPS]
C3. Submit recommendation report to the Ministry [OUR]
E2. All criteria satisfied? [JPS]
NO
YES
A6. Advise OUR & Customer of Acceptance [JPS]
YES
E3. Customer facility is Authorized to connect to the grid [JPS + CUSTOMER]
END

APPENDIX 2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FOR RESIDENTIAL CUSTOMERS
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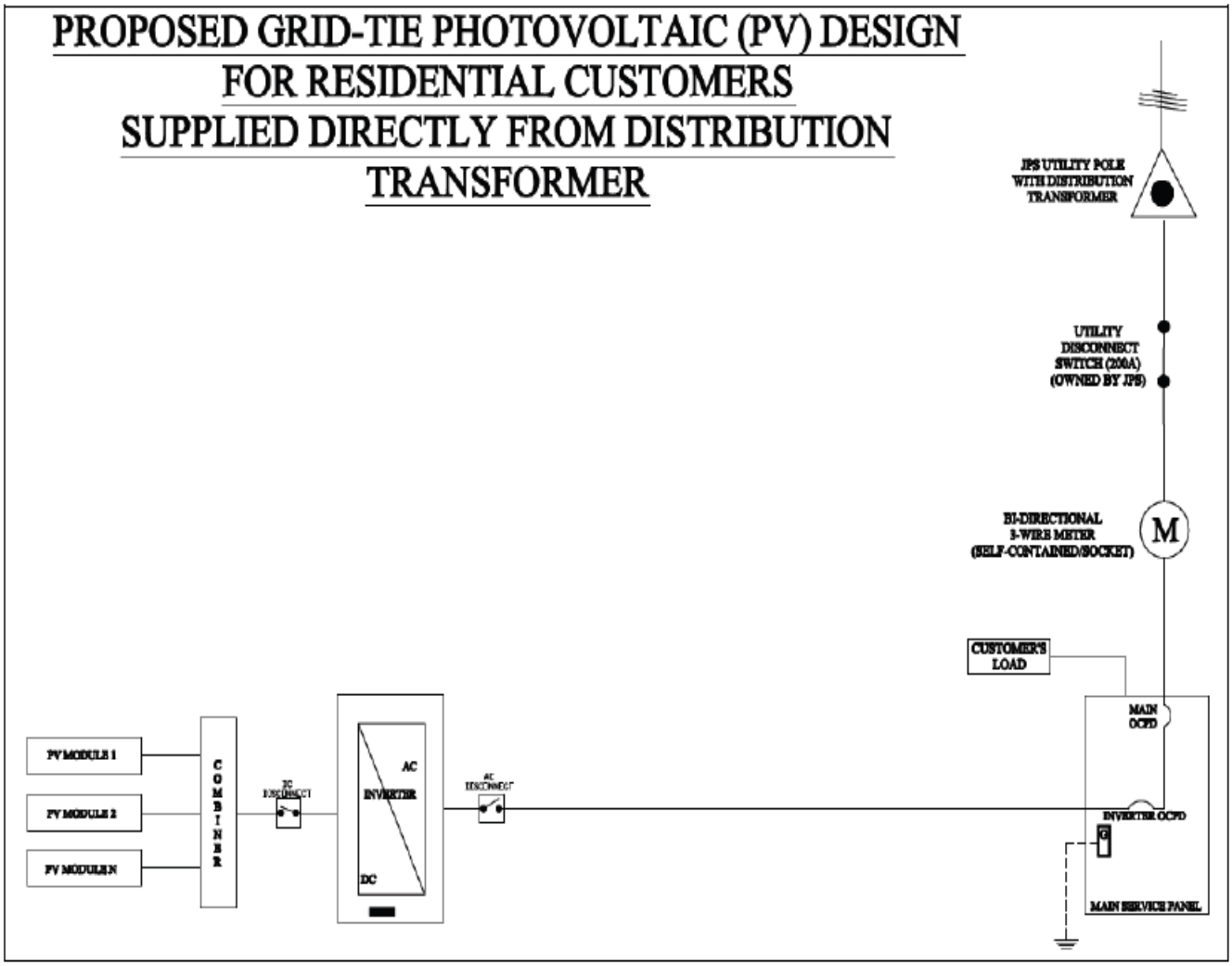
JPS UTILITY POLE WITH SECONDARY NETWORK AFFIXED
UTILITY DISCONNECT SWITCH (200A) (OWNED BY JPS)
BI-DIRECTIONAL 3-WIRE METER (SELF-CONTAINED/SOCKET)
M
CUSTOMER'S LOAD
MAIN OCPD
INVERTER OCPD
MAIN SERVICE PANEL
PV MODULE 1
PV MODULE 2
PV MODULE N
COMBINER
AC
INVERTER
DC

APPENDIX 3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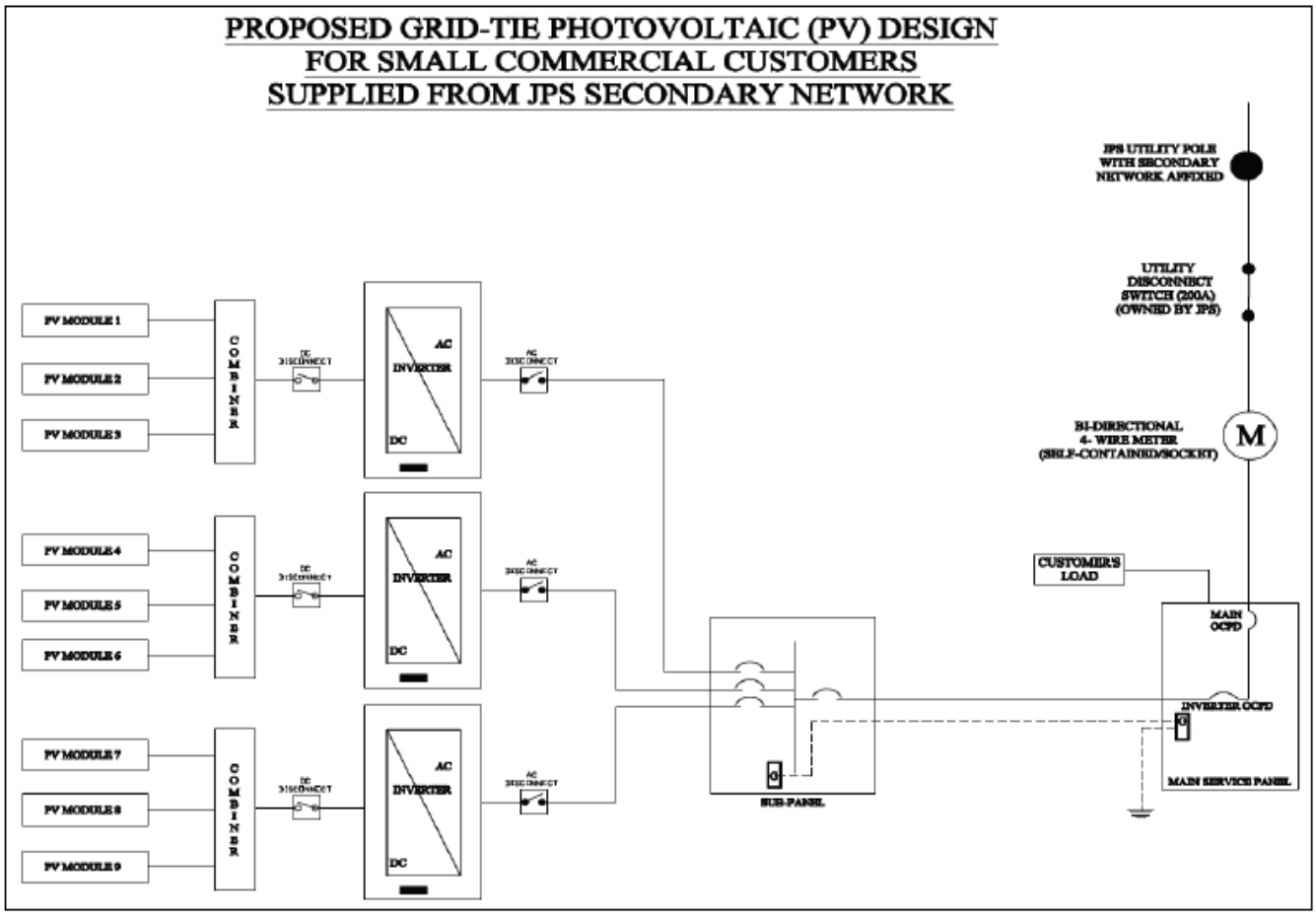
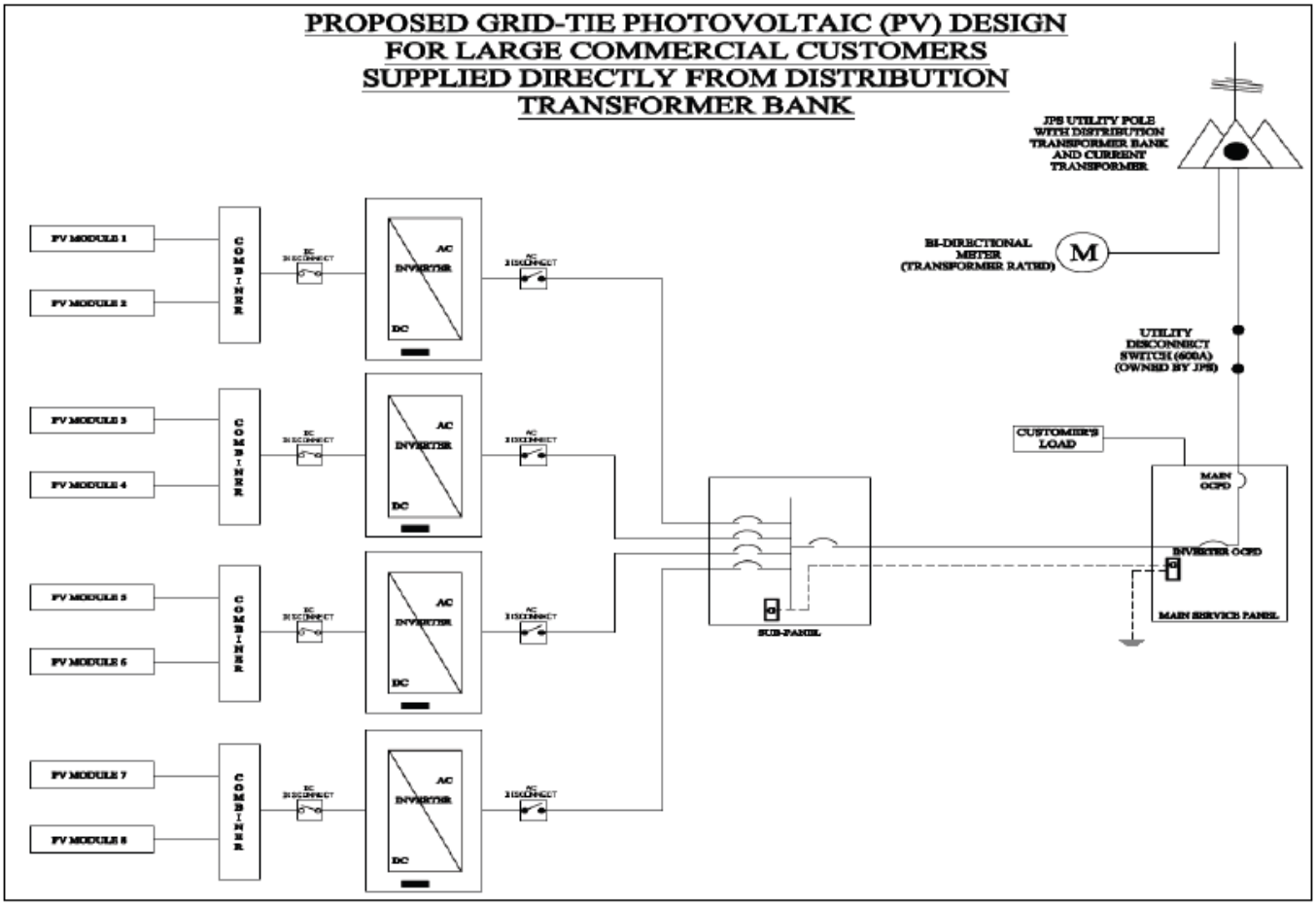
FOR RESIDENTIAL CUSTOMERS
SUPPLIED DIRECTLY FROM DISTRIBUTION
TRANSFORMER
JPS UTILITY POLE WITH DISTRIBUTION TRANSFORMER
UTILITY DISCONNECT SWITCH (200A) (OWNED BY JPS)
BI-DIRECTIONAL 3-WIRE METER (SELF-CONTAINED/SOCKET)
M
CUSTOMER'S LOAD
MAIN OCPD
PV MODULE 1
PV MODULE 2
PV MODULE N
COMBINER
DC DISCONNECT
AC
INVERTER
DC
AC DISCONNECT
INVERTER OCPD
G
MAIN SERVICE PANEL

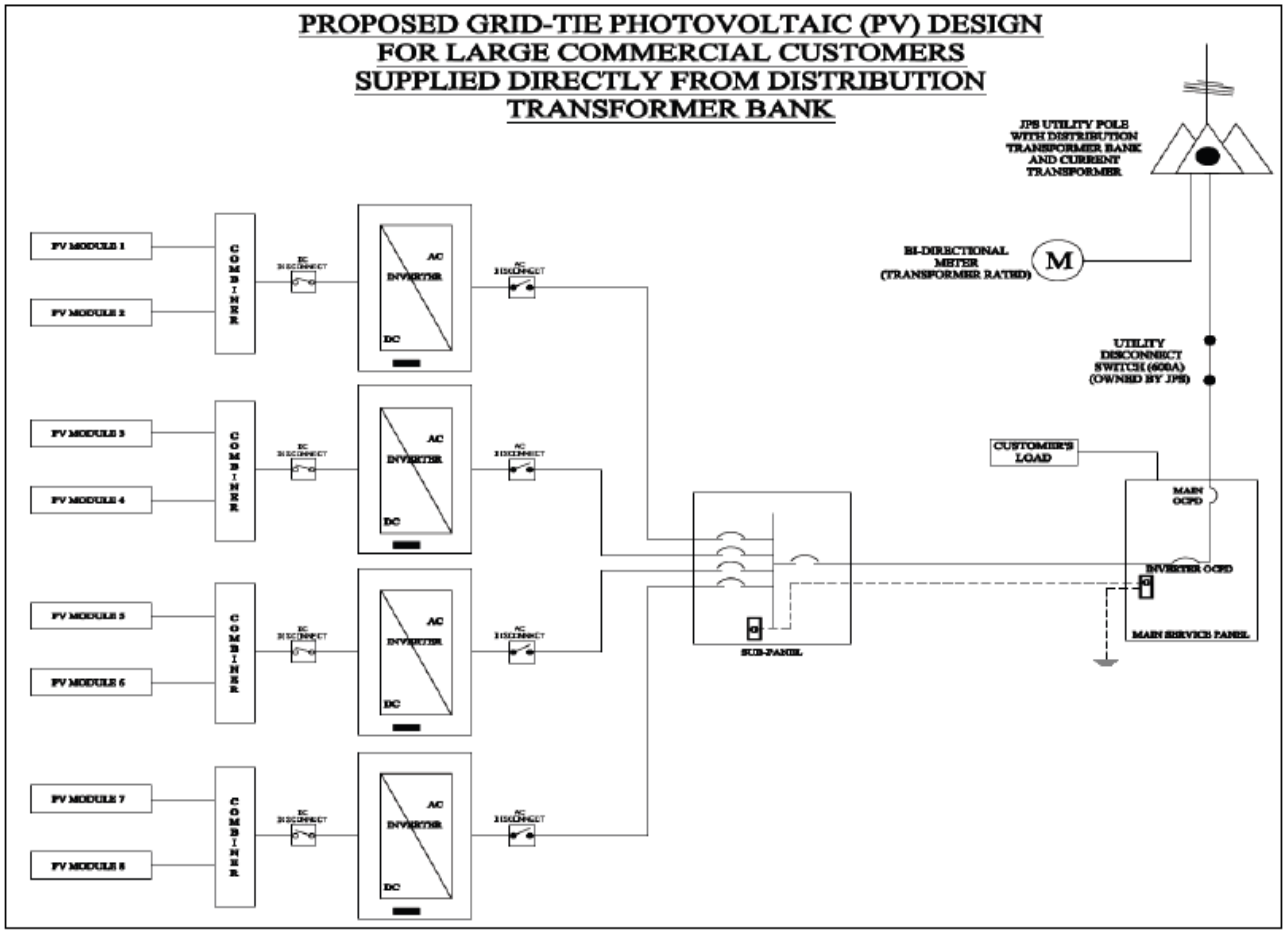
APPENDIX 4


PROPOSED GRID-TIE PHOTOVOLTAIC (PV) DESIGN
FOR SMALL COMMERCIAL CUSTOMERS
SUPPLIED FROM JPS SECONDARY NETWORK
JPS UTILITY POLE WITH SECONDARY NETWORK AFFIXED
UTILITY DISCONNECT SWITCH (200A) (OWNED BY JPS)
BI-DIRECTIONAL 4- WIRE METER (SELF-CONTAINED/SOCKET)
M
CUSTOMER'S LOAD
MAIN OCPD
INVERTER OCPD
MAIN SERVICE PANEL
SUB-PANEL
PV MODULE 1
PV MODULE 2
PV MODULE 3
PV MODULE 4
PV MODULE 5
PV MODULE 6
PV MODULE 7
PV MODULE 8
PV MODULE 9
COMBINER
COMBINER
COMBINER
DC DISCONNECT
DC DISCONNECT
DC DISCONNECT
AC
INVERTER
DC
AC
INVERTER
DC
AC
INVERTER
DC
AC DISCONNECT
AC DISCONNECT
AC DISCONNECT

APPENDIX 5


PROPOSED GRID-TIE PHOTOVOLTAIC (PV) DESIGN
FOR LARGE COMMERCIAL CUSTOMERS
SUPPLIED DIRECTLY FROM DISTRIBUTION
TRANSFORMER BANK
JPS UTILITY POLE WITH DISTRIBUTION TRANSFORMER BANK AND CURRENT TRANSFORMER
BI-DIRECTIONAL METER (TRANSFORMER RATED)
M
UTILITY DISCONNECT SWITCH (600A) (OWNED BY JPS)
CUSTOMER'S LOAD
MAIN OCPD
INVERTER OCPD
MAIN SERVICE PANEL
SUB-PANEL
PV MODULE 1
PV MODULE 2
PV MODULE 3
PV MODULE 4
PV MODULE 5
PV MODULE 6
PV MODULE 7
PV MODULE 8
COMBINER
AC
INVERTER
DC

APPENDIX 6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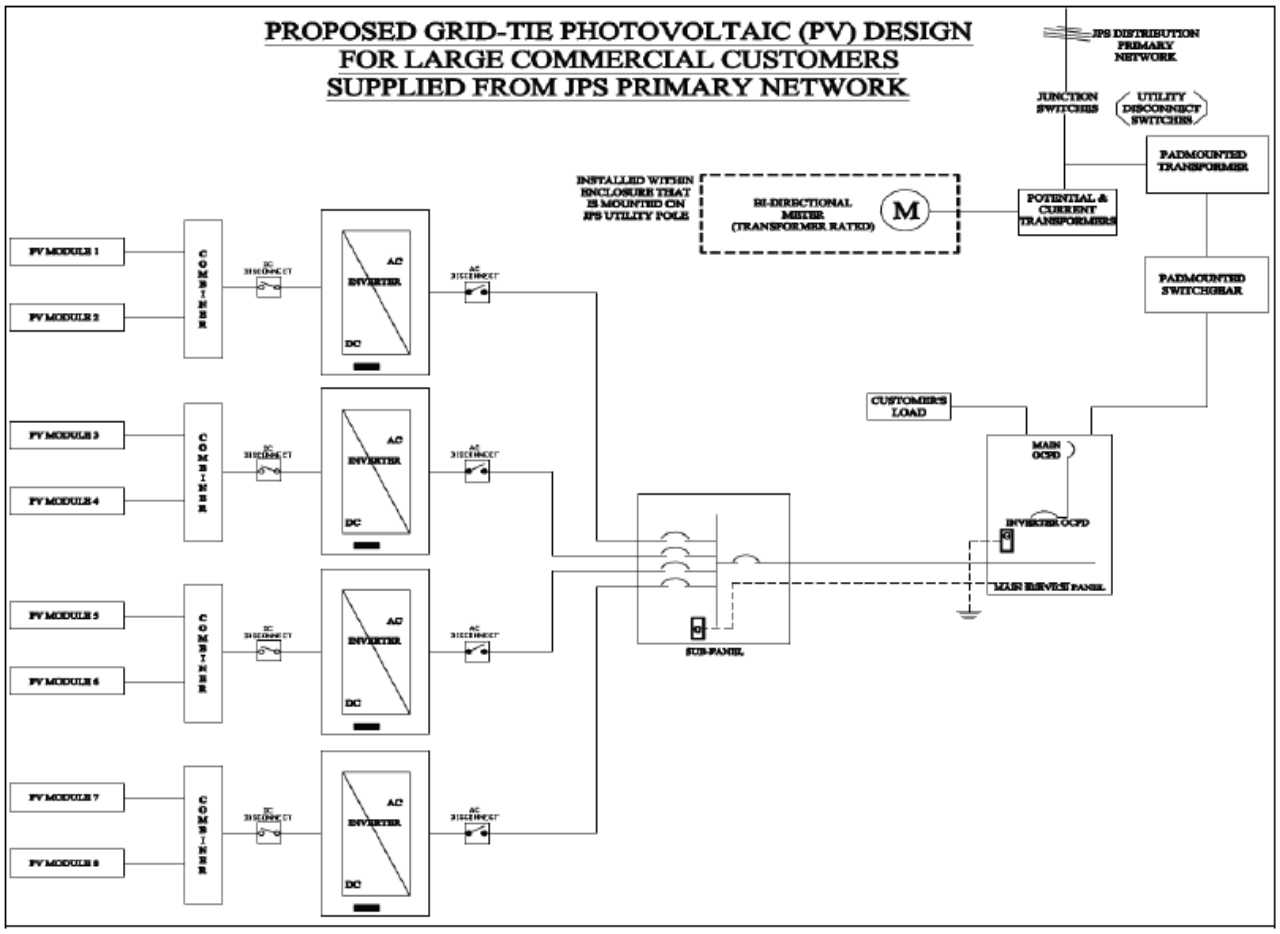
FOR LARGE COMMERCIAL CUSTOMERS
SUPPLIED DIRECTLY FROM DISTRIBUTION
TRANSFORMER BANK
JPS UTILITY POLE WITH DISTRIBUTION TRANSFORMER BANK AND CURRENT TRANSFORMER
BI-DIRECTIONAL METER (TRANSFORMER RATED)
M
UTILITY DISCONNECT SWITCH (600A) (OWNED BY JPS)
CUSTOMER'S LOAD
MAIN OCPD
INVERTER OCPD
MAIN SERVICE PANEL
SUB-PANEL
PV MODULE 1
PV MODULE 2
PV MODULE 3
PV MODULE 4
PV MODULE 5
PV MODULE 6
PV MODULE 7
PV MODULE 8
COMBINER
DC DISCONNECT
AC
INVERTER
DC
AC DISCONNECT

APPENDIX 7


PROPOSED GRID-TIE PHOTOVOLTAIC (PV) DESIGN
FOR LARGE COMMERCIAL CUSTOMERS
SUPPLIED FROM JPS PRIMARY NETWORK
JPS DISTRIBUTION PRIMARY NETWORK
JUNCTION SWITCHES
UTILITY DISCONNECT SWITCHES
PADMOUNTED TRANSFORMER
PADMOUNTED SWITCHGEAR
INSTALLED WITHIN ENCLOSURE THAT IS MOUNTED ON JPS UTILITY POLE
BI-DIRECTIONAL METER (TRANSFORMER RATED)
M
POTENTIAL & CURRENT TRANSFORMERS
CUSTOMERS LOAD
MAIN OCPD
INVERTER OCPD
MAIN SERVICE PANEL
SUB-PANEL
PV MODULE 1
PV MODULE 2
PV MODULE 3
PV MODULE 4
PV MODULE 5
PV MODULE 6
PV MODULE 7
PV MODULE 8
COMBINER
DC DISCONNECT
AC DISCONNECT
AC
INVERTER
DC

Annex VII.4 Timeline of the Design Phase of Works 1 and 2

Activities	R	Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Subphase VII C 1.2 b																						
Review of IGA of the six hospitals	C	2																				
TOR of ESMP	C	2																				
Proposals of Studies and Surveys	C	2																				
Approval of the Reports of Subphase VII C 1.2 b	PM	1																				
Subphase VII C 1.2 c																						
Execution of studies and surveys and implementation of ESMP	C	2																				
Approval of the Reports of Subphase VII C 1. 2 c	PM	1																				
Subphase VII C 1.2 d																						
Concept Design.	C	2																				
Approval of the Reports of Subphase VII C 1.2 d	PM	1																				
Subphase VII C 1.2 e																						
Preliminary Design	C	2																				
Approval of the Reports of Subphase VII C 1.2 e	PM	1																				
Subphase VII C 1.2 f																						
Set of Issued for Construction Documents	C	2																				
Approval of the Reports of Subphase C 1.2 f	PM	1																				
Subphase VII C 1.2 g																						

Set of Final Issued for Construction Documents	C	1																				
Approval of the Reports of Subphase VII C 1.2 g	PM	1																				
Subphase VII C 1.2 h																						
Consents, permits, licenses and authorizations	C	2																				
Issue of the Design Completion Certificate	PM	1																				

Notes:
R – Responsible
C – Contractor
PM – Project Manager

Annex VII.5 Timeline of the Works 3

Activities	R	Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Submission of Revised/Updated Workplan	C	2																																											
Approval of the phase		1																																										
Submission of Designs/Specification for Approval	C	4																																										
Approval of the phase	PM	1																																										
Delivery Duty Paid and Storage	C	18																																										
Approval of the phase	PM	1																																										
Installation & Tests	C	12																																										
Approval of the phase	PM	1																																										
Commissioning	C	4																																										
Approval of the phase	PM	1																																										

Notes:
R – Responsible
C – Contractor
PM – Project Manager

Annex VII.6

Annex VII.6.1 Emergency Preparedness and Response Management Plan (Contingencies)

1. Emergency Preparedness and Response Management Plan (Contingencies)

The Contingency Plan (the Plan) general scheme considers the global actions to be taken into account, in the case of project-related eventualities. In some of them we can work on its prevention, such as in the case of spills, fires, explosions, etc.; on the other hand, there is the other category in which no control is exercised, as is the case of natural phenomena eventualities: hurricanes and flooding that, however, must have actions or contingency plans associated. Risk management by natural phenomena was described in the previous section. In addition, as part of the contingency Plan, a formal procedure for recording and reporting internally any environmental incident will be set up.

The Contingency Plan will always remain active, by carrying out training activities and periodic simulacrum with personnel, as well as by taking actions of physical and operational data review and update, along with equipment and product inspection.

This Contingency Plan is closely intertwined with the Framework of the Disaster Management Plan, which is based on the operational policy OP-704 (Policy on Disaster Risk Management) of the IDB.

1.1 Objectives

The main objectives of this Contingency Plan are:

- Prevent or control operational emergencies or possible industrial accidents that may take place during the construction and operation phases of the projects.
- Establish procedures and response plans to attend in a timely, efficient and with the necessary resources to fires, accidents, attacks and any other emergency situation that arises.
- Prevent the consequences of a major event (fire, spillage of dangerous products) resulting in damage to human lives and property.
- Perform a permanent control over equipment and facilities through periodic inspections.

The contingency plan presents the most important guidelines for subsequent adoption and implementation by contractors. One of the fundamental purposes is to protect and safeguard the life of all personnel involved and reduce public and private property losses.

There are three elements that significantly influence the success of any contingency plan, which are:

- Resources: appropriate staff and equipment;
- Strategies, techniques and action plans; and
- Response management: leadership, cooperation and communication.

1.2 Emergency Levels

For the operation of the Contingency Plan, it is proposed to classify three levels of emergency and whose quality of response is appropriate to the seriousness of the situation:

Source: ERM, 2019.

Figure 1-1: Emergency Levels

1.3 Procedures to follow during the Application of the Contingency Plan

Considerations for the Design of Response Measures:

- **Identification of Available Resources.** The most important resource to respond to possible contingencies is the human being. The response groups work in situations that have high demands, for which reason the actions to be developed will depend to a large extent on the knowledge, confidence and capacity of the staff to perform the actions previously assigned in the respective plan. It is imperative to meet the needs of training, information and provide them with the appropriate personal protective equipment to fulfill their mission.
- **Access to information.** Have all the necessary information, combine it and evaluate it to minimize confusion, rumors and exaggeration. Obtaining timely and up-to-date information is a dynamic process, and in a timely manner, it is the best way to feedback the plan.
- **Communication.** The problems associated with communication are mainly related to the content of the messages, the means of transmission and the message interpretation of who receives it. Generally, internally used communication systems are prepared to handle a specific amount of information in an incident.
- **Priority setting.** In the place of the incident, the brigade or technical personnel in charge of responding to the emergency must be able to quickly alter the threats, in order to face possible changing and / or unexpected situations.
- **Coordination between the Authorities.** The emergency coordinator of the project site will be the shift operator during the operation stage or the contractor during the construction stage. In each project it should be determined which will be the national emergency coordinator, based on the location of the project and its type (sector).
- **Communication with the communities.** Throughout the construction phase, contractors must take communication initiatives with the communities for their safety. These initiatives may include an emergency alert system, a method to provide information on project findings and how to respond, and collaborate with communities to establish action plans, organize demonstrations or training on how to respond to emergencies, and / or introduce the emergency response team to the communities to establish a relationship before an emergency occurs.

Construction Phase

The responsibility in risk management will be the responsibility of the contractors of each project, being shared with subcontractors if applicable. However, the construction company will have their participation in the responsibility, as supervisors and owners of the projects, guaranteeing that the actions of responsibility in the management of risks and contingencies are carried out in a timely manner. Therefore, it will be established that contractors and / or subcontractors must follow the safety, occupational health and environmental procedures to complete and deliver the work with a record of zero accidents and minimize health effects. During the construction phase, the program may be reviewed so that, if necessary, it is adapted according to the appropriate requirements for the activities.

Contractors will ensure compliance with the rules in each of their works, by jobs or disciplines, and this will be mandatory clause. Among such obligations:

- Guarantee workers conditions of prevention, health, safety and well-being in the workplace.
- Instruct and train workers regarding the prevention of accidents, occupational diseases, the risks to which they are exposed; as well as in relation to the use of personal protective equipment, if applicable to the work performed, through talks, posters, etc.
- Design an occupational health and safety program according to the activity to be carried out and containing the measures to be implemented, in order to avoid personal injury or property damage.
- Provide workers with personal protective equipment, according to the work done, to prevent injuries.
- In the area of vehicles, machinery and equipment, comply with preventive and / or corrective maintenance programs and safety requirements.
- Organize and maintain services such as first aid kit equipped in accessible places and staff knowledge.
- Hear and take in writing the statements made by the workers in relation to the unsafe conditions and workplace, and taking the corresponding participation and corrective action immediately.
- Report occupational diseases, work-related accidents and any other unsafe condition that is present within the workplace.

Workers will also have obligations to fulfill:

- To exercise the specific functions derived from the employment contract, in relation to the risks associated.
- Report to their immediate supervisors, directly and quickly, any unsafe condition that could threaten their physical integrity or health and/or that of other workers.
- Mandatory use, claim, accept and maintain in good condition personal protective equipment, giving immediate account to the person responsible for its supply, the loss, deterioration or expiration thereof.
- Report to your superior, when with good reasons, the implements do not correspond to the risk to be covered.
- Comply immediately with any observations made for the benefit of your safety and that of others.
- Take care of and maintain the sanitation and safety facilities facilitated for the development of their work-related activities, etc.
- Respect the posters and notices placed for information and security.
- Accept the provisions of the medical service and the competent bodies in the field of occupational safety for the prevention, rehabilitation treatment of occupational or non-occupational diseases and accidents at work.

Next, the actions and procedures to be considered in case of emergencies and undesirable events are described.

Emergency Procedures

The general procedure to follow when facing an emergency is depicted in the following Figure.

Source: ERM, 2019

Figure 1-2: General Procedure in an Emergency

The sequence of the actions to be followed in case of an unwanted event or accident, an emergency notification will be made, which may be as follows:

- Notification: Report the accident to the organization's personnel.
- Verification and evaluation: Confirm the notification of the current state of the installation and the associated risk for the moment the event notification is received.

The Plan must include a notification before the main authorities scheme that may include: the municipalities where the projects are developed, the relevant ministries of environment and natural resources, the local and national police, the general fire department, and/or the civil defense.

Calling Plan

The calling plan consists of three types of communications, internal, external and support:

- Internal Calls: The internal calling plan contemplates the emergency communication to senior management personnel, as well as to the members of the Contingency Plan that are outside the facilities.
- External Calls: Consider the communication of the emergency to the Government Authorities involved with the supervision of the company's activities, depending on the type of occurrence.
- Support Calls: In the control of emergencies they collaborate decisively and as members of the Contingency Plan, for example the units of the fire department, the national police, ambulance service, medical care if necessary, and government authorities.

Emergency Committee Organization

An Emergency Committee must be organized by the Contractor for the construction and operation stages. It is recommended that the Committee be made up of:

- Environmental Supervisor
- Security Supervisor
- Maintenance Supervisor

1.4 Contingency Types

The contingency of sinister that may occur in project areas are classified according to their origin in:

- Natural phenomena, such as hurricanes, flooding, etc. (see previous section).
- Operational emergencies or incidents normally caused by operations, fires, falling machinery, etc.
- Industrial accidents of own personnel or contractors, normally caused by unsafe acts, unsafe conditions or as a consequence of the natural phenomena or operational emergencies listed above.
- Social phenomena such as sabotage, terrorism, theft, etc.

1.5 Phases Considered for Each Event

Prevention Process

The best way to control any unwanted event and the impact they may have on the environment is to prevent them from happening. For this, it is necessary to apply preventive measures aimed at reducing the probability of occurrence of the event. The main preventive measures are described below.

Work Permits - All projects must comply with the requirements and procedures established by Law, including those related to work permits, in order to prevent unnecessary risks and/or accidents, and must comply with the following:

- In all areas with risk where work is carried out, prior authorization of work permits will be required, in order to perform them, and must be issued by authorized personnel.
- No work will be initiated without first issuing the respective work permit and verifying that the recommendations and requirements made therein have been complied with.
- Supervisors authorized to issue and receive work permits will be responsible for their correct issuance. They will also be responsible for ensuring that safety conditions are maintained for the time required to perform the work.
- A work permit covering several areas with different risks, will not be issued. As a general rule, each specific job will require a separate permit.

Personal Protective Equipment (PPE):

- Personal protective equipment will be mandatory. They will not prevent accidents but will eliminate or reduce the severity of an injury.
- It is the responsibility of contractors to provide their workers with the personal protective equipment required in the execution of any work that generates risks that are difficult to control by other means.
- The equipment will be new and of good quality.
- It is the responsibility of the immediate supervisor of each worker, to determine the need for personal protective equipment and to ensure that the worker makes use of them.
- The worker will be responsible for the care, conservation and proper use of any equipment entrusted to him.

Order and Cleaning - Prior to the start of the work, the Contractor will develop a safety, order and cleaning program, where indicated, from inspections to detect failures to collection and/or garbage containers that must be arranged for different types of organic, inorganic waste, waste, debris and liquid waste. The disposition forms must be indicated according to the national regulations and the final disposition of these. Additionally, the following will be complied with:

- Each employee will keep their workplace clean, thus collaborating with the success of the order and cleaning programs.
- The employee will notify his supervisor of spills of oil, grease, etc., and they will be cleaned as soon as they occur.
- All tools, or any other material equipment used in the performance of a job will be kept well organized, and these objects should be avoided in places where they may be dangerous.
- Waste of flammable substances will not be allowed to spread, as there is a risk of spontaneous fire.
- Flammable liquids will be handled and stored safely.

- An adequate yard or space must be available to neatly store bulky objects or materials.
- All workplaces must be provided with fresh and potable water in sufficient quantity for the use of the workers.
- The toilets and bathrooms will be kept in optimal cleaning conditions and with sufficient provision of toilet paper, water and soap.
- If employees eat on the job site, no waste and debris will be left on site.

Training - Every worker, new or old, will receive operational training from their immediate boss (supervisor), in order to develop knowledge and skills for the safe execution of the assigned work, through talks at the beginning of the day on:

- Industrial safety corresponding to construction.
- Occupational health.
- Fire prevention.
- First aid.
- Personal protection equipment.
- Order and cleaning.
- Accident prevention.
- Accident analysis.
- Protection against fires.
- Works that require written permission for execution.
- Emergency control.
- Physical risk factors (electrical, mechanical, noise and vibration, lighting, heat, ventilation, etc.)
- Chemical risk factors (smoke, ambient gases (vapors, fumes), toxic, alkaline and corrosive substances, etc.)
- Other risk factors (health, third party actions, environmental, etc.).

Actions to be taken in case of an Emergency

General actions before an emergency:

- Upon receiving notice of an emergency, proceed immediately to its evaluation and the level of emergency reported. Then, determine what measures are necessary to apply for its solution, notifying the corresponding response groups.
- If necessary and according to the magnitude of the event, you can order the evacuation of the area or facilities and will initiate the respective procedures for its proper performance.
- Notify the relevant authorities.
- Consult the emergency response procedures to verify, apply and record the descriptive information of the event.
- Restrict access to the event area.

Communications must be carried out by portable radio transmitters, either between vehicles that move or with the base station.

Spills

Equipment and Materials Needed for Spill Response

Contractors will have the following materials to deal with spill incidents:

- Absorbent material, such as sand, sawdust, absorbent cloths (depending on spilled material).
- Safety equipment such as gloves, plastic aprons, goggles, boots.

- Containers for the collected material.
- Camera to document the incident.

Fires and/ or Explosions

A fire means the possibility of serious damage to equipment or personnel, so the action of the organization of the Contingency Plan to proceed has the mission of attacking the fire in a timely manner, to quell the fire in the minimum possible time. Therefore, the projects must comply with the following actions:

Before the Fire

- Training of operating personnel through fire courses, accident practices and simulations, use of fire extinguishers, etc.
- Have fire and protection infrastructure and equipment, and fire extinguishers that work in different environments depending on the type of project (for example, portable and rolling CO_2 and PQS type BC for high voltage transformers).
- Develop rigorous preventive maintenance programs for all types of equipment, review and recharge of extinguishers, etc.
- Identification and signaling of safe areas and establish evacuation routes in all facilities or work fronts.
- Keep fire extinguishers in good condition.
- Have a first aid kit, battery powered flashlights, extra batteries, etc.

During the Fire

- Evacuate the work area and/or facilities to safe areas.
- Communicate with the Fire Department, National Police and other entities depending on the severity of the emergency.
- Protect mouth and nose with damp cloths.
- Stoppage of any area that is running.
- Keep calm and avoid running.
- Take care of affected people immediately, if any.
- If appropriate, try to put out the fire with the use of fire extinguishers and other existing means. For this purpose, they must always and periodically be checked to determine the mechanical quality of the extinguishers and the product used against fire.
- If any equipment is involved in a fire or explosion, the operator must manually disconnect the electrical power that supplies the equipment, only if it can be done safely and without risk to human life.

In the event that the fire cannot be fought directly with fire extinguishers, or it is a danger to personnel, the actions to be taken are:

- Notify firefighters immediately for help.
- Evacuate the place to the meeting point previously agreed in the training and risk simulation plan.
- That the substation protection mechanisms act automatically and clear the substation.
- Once the Firefighters determine that the emergency has ended, the emergency coordinator of the project affected must be informed.
- Proceed with the maintenance brigade to an inventory of damages and then make a detailed report in this regard.

1.1.a.i.1.1 After the Fire

- Cleaning of the affected area.
- Debris removal and elimination.
- Repair and/or demolition in case of major damage.
- When the fire is extinguished, proceed with the maintenance brigade to conduct an inventory of damages and then make a detailed report in this regard.

1.1.a.i.1.2 Adequate Staff Training

Practices or drills will be carried out every six-months, in coordination with the local Fire Department for on-site exercises, behavior of personnel not involved in firefighting, as well as surveillance personnel.

1.1.a.i.1.3 Availability and Use of Fire Extinguishers

- Fire extinguishers should be located in appropriate places and easily accessible.
- Every fire extinguisher must have a plaque with information about the kind of fire for which it is suitable and expiration date. Also, it must have the operating and maintenance instructions.
- Each fire extinguisher must be inspected on a bi-monthly basis, tested and maintained in accordance with the manufacturer's recommendations; similarly, it must have a label with the test date and expiration date.
- If a fire extinguisher is used, it will be refilled immediately; or if necessary it will be replaced immediately.

High Falls, Puncture Wounds, Electrocution, Burns

1.1.a.i.1.4 Before

- Training of personnel in industrial safety so that they do not commit unsafe acts and they use their protective equipment, such as helmet, boots, safety glasses, support strap, etc.
- Likewise, training of personnel in the course of first aid, in order to prepare them to help the injured fellow, until the arrival of the medical or paramedical personnel at the accident scene or their transfer to a hospital for their professional care.
- Provision of personal protective equipment to all operations and maintenance workers.

1.1.a.i.1.5 During

In the event of an accident on the premises, the staff will act as follows:

- If it is a minor accident, apply first aid to the injured person and transfer him/her immediately to the nearest clinic or hospital to be seen by a doctor, in order to rule out possible sequelae afterwards.
- If it is a fall in height with serious symptoms, shelter the injured and request an ambulance for immediate transfer to a hospital.
- If the injured person symptoms of suffocation, give artificial respiration by mouth and also request an ambulance for urgent medical attention.
- In case of a burn, do not apply home remedies to the injured person, only apply water. Request an ambulance to transfer the patient to a clinic or hospital as soon as possible.
- If the person has hemorrhage from a puncture wound, hold a gauze in place to prevent blood loss, if it is located in the extremities, make a tourniquet to cut the blood loss, loosening the

tourniquet every 10 minutes to avoid gangrene and have the injured transfer to a nearby health center.

- If caught with weight on the chest, leverage the heavy element and remove it so that the injured person does not suffocate, until the arrival of the ambulance.
- If the person has suffered an electric shock, take care that he/she breathes, otherwise give mouth-to-mouth breathing to resuscitate and simultaneously request medical assistance or transfer to a clinic or hospital.
- Immediate care for the injured by means of First Aid knowledge can save their lives, as well as their rapid transfer to a health care center.

1.1.a.i.1.6 After

- Analyze the causes of the accident and the actions taken to help the injured on site, as well as the delay in the arrival of the ambulance or medical assistance, if applicable.
- Finally, prepare the preliminary and final report of the accident.

Equipment or Infrastructure Failure

- The person detecting the fault will immediately notify the Supervisor or Chief of Operations identifying and indicating the place and type of emergency.
- If possible, try to isolate the area or prevent vehicles or people from approaching.
- After the problem is overcome, the causes of the failures will be analyzed.
- Preliminary and final reports to government authorities will be complied with in a correct and timely manner.

Attacks and Sabotage

- Rigorous control of the entry of personnel to the facilities by a contracted Security Company, as well as surveillance in strategic areas outside the facilities.
- In the event of an attack or sabotage, the person who detects it will immediately notify the emergency supervisor of the emergency indicating the place and the affected equipment.
- If personnel outside the company are detected and armed, the personnel will be covered to safeguard their safety.
- The manager in shift will immediately inform the Delegation of Police and personnel in charge of monitoring the facilities, to neutralize the aggressors.
- Depending on the event caused by the attack, the response strategy to the specific emergency type will be determined and the external support units will be instructed to act, as described in the action guidelines for fires, spills, cable drops, etc.
- The preliminary and final report to the government authorities will be complied with.

Annex VII.6.2 Hazardous Solid Waste Management Plan

1. Hazardous Solid Waste Management Plan

Every construction project executed under the loans of this Program has the capacity to generate solid and hazardous waste. It is necessary to design and implement a solid and hazardous waste management plan (the Plan) in order to mitigate potential sources of waste throughout the duration of the projects. The Plan should describe the measures and best management practices proposed for each phase of the projects, which will be used to protect the environmental and social communities affected from adverse impacts. The implementation and application of the guidelines of this Plan will allow the proper management, mitigation and recycling of the various types of waste generated.

This Plan defines the various potential sources of waste, and establishes how they will be controlled and monitored throughout the duration of the project.

In addition, the Plan will outline a system for determining the quantities of different solid waste materials disposed. It will promote the minimization of waste production, and the use of satisfactory disposal routes where recycling is not possible. Also, a waste oil management procedure will be set up to record the quantities of waste fuel and lube oil that will be generated and the storage and disposal method that will be used. The information will be collected by the manager and collated by the Safety and Environment Manager. A general guide procedure will be drafted to adopt, and the procedure covers a number of different disposal options.

1.1. Objectives

The objectives and goals of the Solid and Hazardous Waste Management Plan are:

- Avoid and control the generation of Project related waste during the construction and operation phases;
- Define procedures, integrated controls and mitigation measures to be used in the activities during the construction and operation phases that have the potential to affect the environment and communities;
- Comply with the local and national requirements regarding the management and disposal of different types of waste.

1.2. Procedure

Each project must present an outline of the Plan and establish its objectives and goals following the steps in the figure below.

Figure 7-1: Procedure for the Solid and Hazardous Waste Management Plan

1.3. General Approach

Projects executed under the Program will comply with local and national laws and standards as well as international best practices for waste management. It is important to minimize the generation and transport of waste to waste disposal facilities. The general approach to waste management is described below:

Reduction: whenever possible, the generation of waste will be minimized, not only in order to save money but also to reduce the need for transportation and storage resources, as well as to foster sustainable working environments. During the construction phase of the projects, the contractors and operators of the construction works will be obliged to provide specific waste reduction plans and procedures. Workers and operating companies will avoid excessive use of materials in their work activities. During the project operation phase, operators, maintenance managers, and users will work in a sustainable manner and encourage members of the surrounding communities to do the same.

Reuse: it is expected that during the construction and operation phases of the projects multiple types of waste will be generated. When possible, any waste material that is salvageable and practical will be reused.

Recycling: recycling not only reduces the volume of waste, but also protects wildlife, reduces water pollution, creates jobs and fosters sustainable behavior. When possible, the following items will be recycled: plastics, cans and all the remains of glass, paper, cardboard, wood and metal. All recycling items will be collected, classified and stored at the point of origin and placed in different containers or containers clearly identified with marks and colors. After classification, the items will be transported to pre-approved recycling centers.

Classification: all waste materials (hazardous and non-hazardous) will be classified at the point of origin in separate areas for each type. Materials that can be reused or recycled will be separated into additional places or containers in order to minimize transport and waste disposal. Examples of acceptable materials for recycling were listed above. The monitoring of hazardous and non-hazardous waste will be done and will be handled separately.

Recovery: some waste materials can be used for power generation, by incineration. Suitable materials for incineration include: used oils, non-liquid waste, pungent waste and non-pungent waste.

Transportation for disposal: Waste materials that cannot be reused, recycled or rescued will be taken to previously designated sanitary landfill and waste management facilities. Such facilities must satisfy and comply with all relevant standards; as established by local laws. Contractors will document and record all transportation of waste, which will include information such as the following: the type of waste, the amount, the source of the waste, the location of the disposal site and the receiving facilities.
Household waste, such as garbage (bottles, cans, clothing, compost, disposable items, food packaging, food waste, newspapers, magazines, others) will be classified at the point of origin, placed in containers of different colors (supplied by contractors) or containers and clearly identified, such as:

- Blue: plastic items;
- Green: cans and glassware;
- Red: residual waste;
- White: paper and cardboard; and
- Brown: food waste.

During both phases (construction and operation) of the Project, industrial waste will be classified at the point of origin in stacks or in properly identified steel containers and containers. Examples of types of waste include:

- Metal waste;
- Plastics;
- Concrete;
- Wood waste;
- Contaminated oil rags;
- Paperboard;
- Used oils and fats;
- Batteries;
- Paint containers; and
- Residues of chemical compounds (paints, adhesive materials, etc.).

1.4. Sources of Impacts

Solid waste generated during the construction phase of the projects will include domestic and industrial waste. Most of the waste (hazardous and non-hazardous) will be generated in the areas of the construction sites while smaller portions of waste will be generated in the offices and camps of the project staff.

If not handled properly, the potential impacts associated with waste include:

- Visual impacts in the areas of construction works;
- Pollution of soils and water resources;
- Impact on animals;
- Impact on human health;
- Unpleasant odors of residues in surrounding areas; and

- Waste due to poor management of recyclable waste.

1.5. Management Implementation

The Contractors of each individual project will be responsible for the management and implementation of the solid and hazardous waste management plan. It will be mandatory that all major contractors of the construction and operation phases of the projects develop their own waste management plans, specific to each activity that demonstrate compliance with the following (at a minimum):

- Measures to avoid the generation of waste or to minimize it;
- The mechanisms for collecting, transporting, identifying and temporarily storing the waste before moving out of the Project areas;
- The responsible parties;
- Measures for the reuse of waste;
- The options for recycling, treatment and disposal of waste, including the proposed final destinations of those that cannot be reused;
- Procedures for registration entry and documentation of waste transfers;
- Specific management measures for hazardous waste;
- Requirements and regulatory classification;
- The expected types and volumes of waste; and
- Training for staff awareness.

Government contractor companies must be used to ensure that the transportation, treatment and / or disposal of project waste is done correctly.

1.6. Training and Communication

Before the project and works begin, all project personnel must have or receive specific training for their work, as well as participate in various induction training. Detailed information about the importance of proper waste management, including classification, must be provided to employees and contractors.

1.7. Responsibilities

As the construction and operation phases of the projects develop, contractors will be responsible for overseeing the implementation of the Waste Management Plan. Contractors must prepare and deliver a list of all waste management procedures, specific to each function.

Prior to the start of work involving the generation of waste, each contractor must prepare its own management plans and inspection procedures. The contracting companies that carry out work in both phases of the projects (construction and operation) must provide specific plans for each task in each of the phases. They should create separate waste management plans for each phase, or a single plan of greater scope if each phase is clearly detailed. Said management plans will be reviewed and approved by the executing agency before the start of the works, in order to ensure consistency between the waste management plans. In addition, contractor companies will also coordinate in accordance with all standards and regulations including the correct classification, disposal and reuse of waste.

Workplace supervisors will supervise health and safety factors for contractor companies in relation to waste management and enforce established practices for the prevention of environmental and safety incidents. They will provide supervision of the activities of classification, control, mitigation, transportation and disposal of all waste generated by the projects.

1.8. Control and Monitoring Measures

The monitoring and documentation of the generation, transport, and disposal of waste materials is essential for the construction and operation phases of the projects. Measures and standards that ensure compliance and that allow non-conformities with those standards have to be implemented. When a nonconformity is detected, a formal investigation will be carried out to determine its origin and establish the corrective actions necessary to comply with the standards.

Contractors must perform inspections, audits, monitoring and sampling activities (if necessary) in all areas associated with the generation and receipt of waste. Checklists will be written for use in each inspection and will also be documented for reporting and monitoring purposes.

Inspection lists will include:

- All spills, leaks, absence of identification marks, containment problems and any other factor that may require corrective actions.
- It will be registered and document any corrective action and follow-up of the problems.

Additionally, inspections of all the buildings related to the facilities will be carried out, in order to establish their current conditions, cleanliness and order, the performance of the contractors, the classification process, the maintenance, and the conditions of the buildings and the study of additional areas of processing.

Annex VII.6.3 Natural Disaster Management Plan

1. Natural Disaster Management Plan

The Natural Disaster Risk Management Plan (the Plan) must be aligned with national regulations and be designed taking into account the characteristics of the type of operation and location of the specific project. The Plan presents the guidelines and procedures to follow in the event of a natural disaster.

Disaster response planning involves determining, increasing and organizing resources and capabilities in order to achieve a level of preparedness that allows timely and effective response to a potential disaster. When a disaster ensues, plans must be monitored, evaluated and adapted to a given situation.

Source: ERM 2019

Figure 1-1: Preparation of the Natural Disaster Management Plan

1.1 Objectives

The main objectives of this Plan are:

- Minimize or control the damage caused by natural disasters that may occur at the facilities of each project;
- Establish procedures and response plans to respond in a timely, efficient and with the necessary resources to a natural disaster;
- Prevent damage to human lives and property of the company and third parties; and
- Perform permanent control over the equipment and facilities, through periodic inspections.

1.2 Responsibilities

1.1.a.i.1.7 Planification stage

During the development or planning stage, the Project Owner must take into consideration the level of risk or vulnerability to natural disasters. So that, as far as possible, the necessary integrated controls from the design stage are included, as well as the corresponding specifications so that the project is resistant to the type of natural disaster to which it is exposed (e.g., winds of hurricane, storm surge, flooding, or excessive rain).

1.1.a.i.1.8 Construction stage

In cases where the Project is carried out through Contractors, the responsibility in risk management is the responsibility of the Contractor, being shared with the different contractors and subcontractors involved. However, the Project Owner will be responsible for ensuring that the actions of responsibility in the management of risks and contingencies are carried out. Therefore, it will be established that contractors and/or subcontractors must follow the procedures of this plan. The Project owner is also responsible for communication and coordination with local authorities for the response to a natural disaster. During this phase, the program may be reviewed so that, if necessary, it is adapted according to the appropriate requirements for the activities.

The Contractor will ensure compliance with the rules in each of its works, for jobs or disciplines and this will be mandatory compliance clause. Among such obligations are mentioned:

- Provide workers with personal protective equipment appropriate for the activities to be carried out;
- Create an emergency brigade, which will receive specialized training in preparation and response to the different types of natural disasters to which they could be exposed depending on the location of the Project;
- Periodic training and training of Project staff regarding plans and procedures in an emergency generated by a natural disaster; and
- Coordination of drills.

1.1.a.i.1.9 Operation stage

During the operation stage, the Project Owner is responsible for leading the risk management of natural disasters. New specific plans and procedures should be developed, which are consistent with the processes and vulnerabilities particular to each operation.

The operation must also have a properly trained emergency brigade, staff must receive periodic training and drills will be conducted for each type of natural disaster to which the particular project is exposed.

1.3 Procedures to be followed during a Natural Disaster Emergency

1.1.a.i.1.10 General actions in case of hurricanes

In the case of threats due to extreme weather conditions, the following actions should be considered.

<u>How to prepare before a hurricane:</u>

- Train operational personnel to act in case of hurricane emergencies, so that personnel are prepared for these events.
- Emergency equipment will be inspected and kept ready for use. It will be guaranteed to have potable water and canned food on site.
- Secure with rope or chains all equipment that cannot be insured inside the building.
- Place vehicles protected against hurricane winds.
- Call the relevant authorities for the Project or the Operation, the Police and the security company, if any, and indicate that the place will be left with only the minimum emergency personnel on the site.
- For projects in operation, once the notification is received, the Emergency Coordinator, in case of meteorological risk, operators should go to the protected areas indicated within the control building.
- The Coordinator will determine, according to the prevailing or progressive conditions, whether the procedure for emergency stop should be executed.

<u>After the hurricane:</u>

- Equipment will not be energized until it has been checked by electricians.
- In case of spills, dripping or fire, proceed according to the sections related to these problems in the contingency plan.
- Take a tour and determine the damages caused.
- Proceed to repair minor damages and those necessary to provide immediate service.
- Proceed to clean the debris and artifacts that obstruct its operations.

- Prepare a written report at the end of the emergency. This report will contain the results of estimating damages to the company's property, affected people, damage to private property, and the environment.
- Plans for before and after a hurricane will be kept up to date to be effective.

1.4 Evaluation

When evaluating the response to an emergency, there is an opportunity to determine whether the concept of the management systems, procedures and processes of the Plan effectively addresses the problems and needs of the operation.

After the emergency is over, damage to personnel or facilities must be assessed and a report must be prepared to the corresponding authorities. Likewise, the Emergency Committee must analyze the actions of personnel and evacuation coordinators

The Emergency Committee should use previously established indicators and criteria to evaluate the different aspects of the plan in order to draw conclusions and lessons learned, and determine the actions necessary to improve it and that the responses to future emergencies address the problem-raising areas.

Annex VII.6.4 Occupational Health and Safety

1. Occupational Health and Safety

1.1 Objectives

The objectives of the Workers Health and Safety Plan are:

- Protect the health and safety of all workers and employees of the projects;
- Be proactive in identifying risks and activities that may affect the health and safety of workers; and
- Prevent the incidence of accidents and incidents due to project activities.

1.2 Activities or Key Actions

1.2.1 Prevention

The Workers Health and Safety Plan should identify and prioritize prevention measures and establish actions to mitigate the risk of accidents occurrence.

1.2.2 Protection Equipment

Collective and personal protective equipment must be provided to all employees of each project. Priority should be placed to collective measures. This equipment must:

- Provide adequate and effective personal protection against the risks that motivate its use, without causing additional risks or unnecessary inconvenience.
- Be available to all personnel and always keep in conditions that allow immediate use.
- Establish the conditions of use of collective and personal protective equipment and, in particular, its time of use, taking into account:
  - The severity of the risk
  - The time or frequency of risk exposure
  - The conditions of the job
  - The benefits of the team itself, taking into account its useful life and its expiration date.

Additionally, the following aspects will be taken into account:

- It will be the obligation of the workers to use the collective and personal protective equipment made available to them. Contractors must ensure that workers make use of it.
- All personnel who are in the work, regardless of the position, level or body to which they belong, will wear the protective helmet.
- Personnel who require it depending on their work, in addition to the helmet must have their sashes with safety belts, harnesses for heights, boots with steel tips, gloves and safety glasses.
- There should be a reserve of protective helmets to ensure compliance with this requirement.
- The necessary measures must be taken to provide quick first aid to any injured personnel during the working day.
- All first aid kits must be easily accessible and clearly marked, in order to provide first aid to any worker who has an accident during their work. First aid kits must be in charge of a responsible person, and trained to provide first aid.

1.2.3 Permanent Services or Sanitary Equipment

- The specific labor national regulations will be followed, however, by way of reference, for shifts of 25 workers or more, the contractor will guarantee a dining room so that the workers can eat their food comfortably and safely, this room will have enough tables and chairs or stools. Adequate facilities for preparing food will also be available when local conditions or custom require it.
- Construction workers will have toilets and / or latrines in sufficient quantities (for example, as a reference and if not established by the labor regulations of each country, 1 toilet will be installed for every 20 workers) and will be in good condition of conservation, hygiene and cleaning and will remain free of unwanted emanations. Separate facilities for men and women are required to a reasonable distance. For women, it will be one for every 15 women, unless the labor regulations establish a different number for these cases.
- In all construction work, the contractor will guarantee sufficient sources of drinking water so that the workers can adequately replenish and avoid dehydration. These water sources will be close to the jobs.

1.2.4 Environmental Protection

- It is strictly forbidden to burn waste from works or fuels. The waste must be deposited in the sites approved by the corresponding municipal authorities.
- Similarly, the installation of dumps or sites for the final disposal of wastes 200 meters or less from the banks of surface sources is prohibited. The corresponding municipality must previously authorize the location of dumpsites.
- In case of storing fuels in the work area, precautionary measures should be taken for potential spillage, such as placing the dispensers on pallets and these must be on a waterproof area. Maintain sand to contain any spillage. In case of spills, the material must be extracted, stored, treated, and disposed of by a qualified company authorized for such purposes. For fire prevention smoking ban signs should be displayed and sites should be entered only with authorization and / or authorized personnel. ABC category extinguishers will be available on site, which should be used by previously trained personnel.
- Equipment maintenance and repair activities should preferably be carried out in the contractor's workshop away from water courses.

1.2.5 Contractors' Obligations

- According to the national labor regulations, project owners, contractors, subcontractors at all levels, are obliged to comply with all current legal provisions regarding occupational health and safety.
- Each of the contractors, together with their sub-contractors, if any, is responsible for the occupational safety and behavior of their workers within and outside working hours, establishing penalties for those who incur in acts that threaten the moral and good behavior of the local population. The necessary basic services such as hygienic services, etc. must be guaranteed for all workers. Contractors are also responsible for the collection and disposal of the waste generated.

- The maintenance of the vehicles, machinery and equipment used in the projects should be carried out as far as possible from the water sources. Likewise, used oils, spare parts or the like that affect the quality of the environment may not be discharged to the ground or water sources, under any circumstances.
- In order to avoid air pollution, the contractor must perform periodic maintenance of construction equipment and machinery.
- The contractor should provide, whenever possible, employment to the local population.
- Ensure the placement of security signs and symbols that are required, as well as demand the care, conservation and replacement of them.
- Guarantee the acquisition and delivery of personal and collective protection equipment, as well as demand their use, care and conservation of them.
- Ensure compliance with the necessary measures to eliminate the causes of occupational accidents and occupational diseases, in coordination with union representatives.
- The contractor will guarantee the pre-employment medical exams to determine the aptitude of the workers, and newspapers according to the activity they carry out, for the early detection of occupational diseases.

1.2.6 Workers Obligations

- Comply with the instructions and regulations of each project regarding Occupational Health and Safety, as well as employ safe work methods.
- Maintain and use the personal and collective personal protection equipment received and return it to the person in charge, once the work in which it was required is finished.
- Provide the necessary assistance in case of accidents or imminent risks that endanger the assets of the company or its colleagues.
- Collaborate in the fulfillment of the Occupational Health and Safety plans.
- Collaborate in the inspection carried out by the competent authorities in Occupational Health and Safety, as well as in the investigation of occupational accidents and diseases that occur in companies and / or construction projects.
- Review the collective and Personal Protective Equipment (PPE) of work before and after work, to verify its correct state of conservation and immediately inform the Supervisor of Occupational Health and Safety, Immediate Chiefs and / or Person Responsible for Work, failures detected.

1.2.7 Prohibitions to Contractors and Workers

- Execute acts that jeopardize their own safety, that of their co-workers or that of third parties, as well as that of the establishments, workshops or places where they work.
- It is forbidden for workers to take raw materials or elaborated materials from workshops or their dependencies without permission and / or authorization.
- Present themselves to their work while intoxicated or under the influence of toxic drugs.
- Workers may not use the equipment entrusted to them in uses that are not in the service of the company, as well as taking it out of the workshop without corresponding permission.
- Smoking in restricted areas.
- Improvise a stove to make food in inappropriate places.
- Carry firearms and short sharps.

- Ingest alcoholic beverages or any psychotropic substance.
- Perform wildlife-hunting activities.

1.2.8 Security Measures

Next, general safety measures[10] are presented, however, each project must develop a safety plan and adjust it to its specific sector based on the best international health and safety practices.

Over-exertion

Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling, are among the most common causes of injuries in construction and decommissioning sites. Recommendations for their prevention and control include:

- Training of workers in lifting and materials handling techniques in construction and decommissioning projects, including the placement of weight limits above which mechanical assists or two-person lifts are necessary;
- Planning work site layout to minimize the need for manual transfer of heavy loads;
- Selecting tools and designing work stations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable work stations;
- Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks.

Slips and Falls

Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at construction and decommissioning sites. Recommended methods for the prevention of slips and falls from, or on, the same elevation include:

- Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths;
- Cleaning up excessive waste debris and liquid spills regularly;
- Locating electrical cords and ropes in common areas and marked corridors;
- Use of slip retardant footwear.

Work in Heights

Falls from elevation associated with working with ladders, scaffolding, and partially built or demolished structures are among the most common cause of fatal or permanent disabling injury at construction or decommissioning sites. If fall hazards exist, a fall protection plan should be in place which includes one or more of the following aspects, depending on the nature of the fall hazard:

[10] Sourced from: "Environmental, Health, and Safety (EHS) Guidelines - GENERAL EHS GUIDELINES: CONSTRUCTION AND DECOMMISSIONING", World Bank Group (2007)

- Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface;
- Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5000 pounds, as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system should also be able to support 5000 pounds;
- Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces.

Struck By Objects

Construction and demolition activities may pose significant hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities. Techniques for the prevention and control of these hazards include:

- Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels;
- Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable;
- Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap;
- Use of temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as hand rails and toe boards to prevent materials from being dislodged;
- Evacuating work areas during blasting operations, and using blast mats or other means of deflection to minimize fly rock or ejection of demolition debris if work is conducted in proximity to people or structures;
- Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes.

1.1.a.i.1.11 Electrocution

- Only trained personnel should handle electrical cables and equipment that require electricity for operation;
- Personnel handling cables and electrical equipment must follow the rules for work on power lines;
- Mandatory use of personal protective equipment such as glasses, helmet, gloves, etc., when working with electrical cables and equipment;
- Warning signs of danger in areas where power lines are located and work with equipment that needs electricity to operate;
- Immediate aid for personnel who have suffered burns due to electrocution, provide necessary first aid, and depending to the severity of the accident, determine whether the patient needs to be transferred to the nearest health center or hospital.

Moving Machinery

Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazards, such as physical contact, spills, dust, emissions, and noise. Heavy equipment operators have limited fields of view close to their equipment and may not see pedestrians close to the vehicle. Center-articulated vehicles create a significant impact or crush hazard zone on the outboard side of a turn while moving. Techniques for the prevention and control of these impacts include:

- Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic
- Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle;
- Ensuring moving equipment is outfitted with audible back-up alarm;
- Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations.

Dust

- Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements;
- PPE, such as dusk masks, should be used where dust levels are excessive.

Confined Spaces and Excavations

Examples of confined spaces that may be present in construction or demolition sites include: silos, vats, hoppers, utility vaults, tanks, sewers, pipes, and access shafts. Ditches and trenches may also be considered a confined space when access or egress is limited. The occupational hazards associated with confined spaces and excavations in construction and decommissioning sites should be prevented according to the following recommendations:

- Controlling site-specific factors which may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning;
- Providing safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders;
- Avoiding the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated.

Other Site Hazards

Construction and decommissioning sites may pose a risk of exposure to dust, chemicals, hazardous or flammable materials, and wastes in a combination of liquid, solid, or gaseous forms, which should be prevented through the implementation of project-specific plans and other applicable management practices, including:

- Use of specially trained personnel to identify and remove waste materials from tanks, vessels, processing equipment or contaminated land as a first step in decommissioning activities to allow for safe excavation, construction, dismantling or demolition;
- Use of specially trained personnel to identify and selectively remove potentially hazardous materials in building elements prior to dismantling or demolition including, for example, insulation or structural elements containing asbestos and Polychlorinated Biphenyls (PCBs), electrical components containing mercury;
- Use of waste-specific PPE based on the results of an occupational health and safety assessment, including respirators, clothing/protective suits, gloves and eye protection

Common Injuries and Accidents

- Use rolling cats or other comfortable and easy-to-use equipment or tools to reduce material handling by hand;
- Place materials in easily accessible sites;
- To lift weight, the correct technique should be used: lifting weight by flexing the legs, not with the back; girdles and other protections should be used;
- To avoid the exhaustion of personnel, sufficient liquids should be provided, mandatory breaks at small intervals of time, especially in hot weather to avoid to heat stroke and / or excess humidity; use light colored clothes and cotton.

1.2.9 Community Health and Safety

General Site Hazards

Projects should implement risk management strategies to protect the community from physical, chemical, or other hazards associated with sites under construction and decommissioning. Risks may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards. Risk management strategies may include:

- Restricting access to the site, through a combination of institutional and administrative controls, with a focus on high risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community;
- Removing hazardous conditions on construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials.

Disease Prevention

Increased incidence of communicable and vector-borne diseases attributable to construction activities represents a potentially serious health threat to project personnel and residents of local communities. Recommendations for the prevention and control of communicable and vector-borne diseases also applicable to construction phase activities should be established.

Traffic Safety

Construction activities may result in a significant increase in movement of heavy vehicles for the transport of construction materials and equipment increasing the risk of traffic-related accidents and injuries to workers and local communities. The incidence of road accidents involving project vehicles during construction should be minimized through a combination of education and awareness-raising, and the adoption of procedures.

1.3 Responsibilities

Each project should establish roles and responsibilities in a clear way. These responsibilities and roles of each person in charge will be communicated to the workers from the beginning, so that they know who to turn to if an incident occurs or if their role implies any specific responsibility related to health and safety.

1.4 Control and Monitoring Measures

- Reports of accident, illness and injury incidents including investigation and improvements to be implemented;
- Workers' health controls to determine an increase in diseases that could be associated with the projects;
- Incidents reported through the registration system;
- Health and safety monitoring records; and
- Regular evaluations with findings regarding the conditions of work fronts.

1.5 Internal Complaints Mechanism

Each project must have an internal grievance mechanism for workers and contractors. The objectives of these mechanisms are:

- Develop and implement an internal grievance mechanism to ensure transparency and commitment between projects, their employees and their contractors;
- Provide employees and contractors with an accessible and efficient process to present concerns, suggestions and complaints that may arise in relation to their work environment;
- Allow employees and contractors to raise their concerns, suggestions and complaints anonymously;
- Define a general methodology to manage and resolve concerns, suggestions and complaints in a timely manner; and
- Manage possible conflicts of interest by segregating the roles and responsibilities of the people involved in the process of managing concerns, suggestions or grievances and avoiding placing people in a position where conflicts can be perceived.

1.6 Principles

The Internal Complaint Mechanism has been developed in accordance with international best practices. A successful grievance mechanism is receptive and fair. The project claims management process must guarantee the same level of integrity and respect to any employee and contractor, and any type of claim received.

The objective is to guarantee transparency and commitment between projects, their employees and their contractors, as well as improve the organizational work of each project and facilitate communication between employees, contractors and the administration.

This mechanism is based on the following principles:

- Respect for national laws and international standards; however, this mechanism does not replace any legal recourse;
- Transparency and the ability of employees and contractors to express their complaints anonymously;
- Non-discrimination and no compensation or penalties against those who express their claims;
- Fair treatment of complaints that arise; and
- Effective communication between employees, contractors and administration.

1.7 Internal Complaint Mechanism Process

To comply with international best practices, each project must have an internal grievance mechanism that includes a process to receive and record claims, to examine and evaluate them, to reach a resolution, to challenge the final decision and to make Follow up and document the process. The following Figure presents the different stages of this process.

Source: ERM, 2019

Figure 1-1: Different stages of the internal complaint mechanism process

1. Receive and register complaints

Any temporary or permanent employee, as well as any consultant, contractor, subcontractor or supplier, can submit claims, both verbally and through a written form, to their immediate manager, the human resources department or a worker's representative.

Any employee or contractor can make a claim and is entitled to anonymity.

Claims received must be recorded and documented. As a general rule internal complaints are managed by the Human Resources teams. The records will be kept updated throughout the life of the projects. The record includes a summary of the claim, the date it was received and a reference to any supporting documentation (for example, images).

Complaints are addressed within a specific period agreed upon by each project after receipt of the claim.

2. Examine and Evaluate

For claims that have not been resolved immediately by the recipient, Human Resources conducts an initial assessment of the severity and assigns the claim to a claim supervisor (for example, construction manager, engineering manager or other area directly involved in the claim). Human Resources and the owner of the claim agree the deadlines for an investigation and any follow-up action.

For claims related to problems for which a more appropriate company process already exists, Human Resources refers the matter to the appropriate Claim Owner for further action. This is usually the case for claims related to contractual or commercial matters, commercial integrity or criminal matters, and issues subject to current or pending litigation.

3. Resolution

If the claimant cannot obtain a resolution within a specific period established by each project, after the claim is received, he or she will inform Human Resources through a form.

If no agreement is reached on a resolution within a certain period, meetings and discussions should be scheduled with the project manager of the project, as well as with other relevant departments, to agree on a final solution.

Before issuing the final resolution, the claimant, or the Workers' Representative, reviews it and confirms its agreement with the proposed solution.

4. Disagreement on the decision

In the event that a claimant wishes to challenge / appeal the project decision, the Project Manager and the Project Director will decide if the project can resolve the dispute or if it is necessary to involve a third party (for example, a mediator, an expert technician, a local representative or authority) to reach an agreement between the parties involved and resolve the dispute.

5. Follow-up and Documentation

Once an agreement is reached, the designated person or department (usually Human Resources) and responsible for the internal grievance mechanism of each project, is responsible for following up on the claimant to confirm that appropriate resolution measures are implemented and continuously coordinate with the areas involved in the claim.

Each project must maintain an updated database with all documentation and information related to internal complaints submitted by workers or contractors. The claims process must also be followed, coordinate with the areas involved through meetings and facilitate the participation of the claimant. A single file for each case must be completed and registered with the form, all correspondence related to the claim and the reference to the claim register.

The complaint log provides a record to show that actions are tracked and that these are carried out. Register:

- Date of the complaint;
- Person responsible for the claim (i.e. claimant);
- Information on the proposed corrective action (if applicable);
- Date the complaint was closed;
- Date the response was sent to the complainant.

1.8 Communication of Responsibilities

The Human Resources teams of each project will communicate to the workers and contractors this procedure and its different steps before construction and regularly during the duration of the different projects.

1.9 Reports

Projects track all complaints through an Internal Complaint Registry.

1.10 Monitoring

The Internal Complaint Mechanism will be monitored quarterly during construction and annually during operations by a third party to determine the success of the process. An evaluation will be carried out for each internal complaint and the project response to assess the effectiveness of the response mechanism or address systemic problems that may require changes in the policies or performance of each project.

Annex VII.6.5 Gender Equality Plan

1. Gender Equality Plan

The projects commit to promote gender equality and ensure equal opportunities and results for all staff.

"Gender equality" means the existence of equal opportunities and rights between women and men in the private and public spheres, which provides and guarantees them with the possibility of living the life they want. Currently, it is internationally recognized that gender equality is a key piece of sustainable development (UNESCO).

An UN report on global sustainability highlighted that "any serious change towards sustainable development requires gender equality. The collective intelligence and capacity of half of humanity is a resource that we must nurture and develop, for the sake of all future generations" (UN, 2012). Likewise, the IDB defends that gender equality contributes to poverty reduction and results in higher levels of human capital for future generations. According to the IDB, the empirical evidence in this regard is overwhelming: equality within the home, in the labor market, in access to financial services and technology, and in civic and political participation reinforce each other and contribute to the effectiveness of development efforts (IDB Operational Policy on Gender Equality in Development, 2010).

The projects will work to ensure that all staff feel respected, safe and valued in the workplace, and will take proactive measures to prevent and eliminate gender discrimination and provide equal opportunities for all staff.

1.1 Objectives

The objectives of the Gender Equality Plan are:

- Promote equal power relations between women and men;
- Use appropriate language and behavior that reflects gender equality;
- Strengthen the organizational structure of each project towards an inclusive and participatory work model;
- Avoid gender stereotypes;
- Provide training that promotes knowledge, values and benefits on gender equality;
- Have an organizational policy on gender for each project.

1.2 Activities and/ or Key Actions

Below are general activities or actions to promote gender equality and ensure equal opportunities and results for all staff. However, each project must develop an organizational policy on gender and adjust this plan to its specific social and geographical context based on international best practices.

1.3 Appropriate language and behavior

All work and sexual harassment behavior will be prevented in the projects, through prevention and sanction mechanisms. Depending on the context of each project, training, programs or campaigns to prevent workplace and sexual harassment can be carried out among its staff and also towards

the community. The dissemination of the policies of each project and the performance of the internal complaints mechanism will be key to preventing and detecting this type of harassment.

1.4 Equitable Opportunities

Projects should offer equitable and inclusive opportunities for men and women alike. No lower wages and benefits will be offered in relation to what men earn. Likewise, the difficulty of hiring or firing for pregnancy or for being working mothers will not be accepted. Job offers, both informal and qualified offers and leadership positions, will be available for both genders with the objective of moving towards a representation of men and women similar to that observed in the gender composition of society. All of the above will be carried out respecting the labor legislation of each country.

Training

The projects will provide training for all staff on gender issues. These trainings can offer tools and activities to promote gender equality in each project; facilitate sessions to reflect on personal experiences and observations; present gender stereotypes and their consequences and talk about serious problems related to gender, such as gender violence or domestic violence.

These trainings will aim to provide knowledge, techniques and tools to develop skills, changes in attitudes and behaviors to advance gender equality at work. They will also contribute to the empowerment of women within the projects and will promote an organizational culture that integrates gender equality values. These trainings can be carried out in coordination with civil organizations or associations dedicated to gender equality.

Health and Safety at Work

Projects must have adequate infrastructure for mixed work teams (for example, bathrooms). Likewise, the equipment, machinery and personal protection material will be adapted so that the work can be carried out under equal conditions between men and women.

Grievance Mechanism

The internal grievance mechanism, presented in detail in the Workers' Health and Safety Plan, must be culturally appropriate, accessible, anonymous, confidential, transparent and inclusive. Additionally, if a worker asks to discuss a complaint or a particular situation with an employee or other involved person of the same gender, the projects will facilitate this request.

1.5 Responsibilities

Projects are the main responsible for complying with the objectives and commitments established in this plan and in their own gender policies. Project staff and contractors will be responsible for carrying out work and labor relations in a manner that meets the expectations of gender equality established by each project during the different phases of the projects. The Human Resources team of each project will be responsible for circulating the gender equality plan, as well as gender policies among the staff.

1.6 Monitoring

The purpose of monitoring and evaluating the Plan is to record the degree to which prevention and sanction measures achieve their intended objectives to promote gender equality in the work

environment of each project. The monitoring and evaluation activities will be carried out both by the projects and by independent third parties as appropriate in each case. The projects will be responsible for evaluating each project's contractors.

To this end, the number of gender-related complaints and resolutions will be evaluated and recorded, an updated record of gender equality-related trainings and materials distributed among staff (policies, pamphlets, campaigns, etc.) will be maintained and if necessary, internal surveys on the opinions and concerns of staff in relation to gender equality may be conducted.

Annex VII.7

Instructions and Specifications for the preparation of the forms established in ITB 13.1, section IV and PCC 2.3

This Annex includes the Instructions and Specifications that will support the successful bidder in completing all the Forms established in the section IV of the RFB.

1. Supervision and Quality Assurance Guide (SQA)

As established in Section IV, Supervision and Quality Assurance Guide (SQA), the successful bidder must deliver such guide, prepared considering what is defined in the bidding document including the following specifications.

- The SQA will be the guide and control instrument of the Contractor´s quality assurance process and will be implemented from the beginning of the Design. It must be prepared and developed in accordance with the Work Program
- The Contractor is responsible for establishing quality assurance mechanisms in all phases, from the Design and, once approved, the works execution, the installation of the defined equipment, and the correct operation and maintenance of the Works, both operational and corrective or preventive, in accordance with his/her comprehensive responsibility.
- In order to guarantee continuous quality control, the Contractor must define in the SQA a Quality Assurance Team headed by the Project Administrator, who will coordinate with the Contract Managers who will be in charge of the reviews, designs, measurements, field verifications, elaboration or request of missing designs, as well as all the necessary control tasks to ensure the quality and guarantee that the works are built in accordance with the Design and the Specifications.
- The quality control of the materials, products and processes of the Works is under the responsibility and exclusive cost of the Contractor, who will support it through the quality records generated from the pertinent tests carried out by laboratories duly accepted by the Project Manager.

2. Guide on the work program (GWP)

The work program (GWP) delivered by the successful bidder must comply with the Specifications included in Section IV: FORM GWP Guide on the work program.

3. Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans (ESHS- MSIP)

The Environmental, social, safety and health in the workplace Management Strategies and Implementation Plans (ESHS- MSIP) must comply with the specifications included in this bidding document, particularly in Section IV: FORM ESHS- MSIP, and the following specifications:

- Be in accordance with the IDB Policy and Guidelines on Environmental Compliance and Safeguarding, as well as with the environmental obligations required by Jamaica. It is the Contractor's responsibility to know and comply with all laws, regulations and other governmental dispositions, regarding the environment, natural resources, health and cultural heritage, as well as others that the Contractor may adopt and, where appropriate, have by objective the protection and environmental improvement of aqueducts and sewers. Likewise, it must prevent environmental impacts and/or produce minimal impacts or mitigate them on health, soils, surface and ground water, air quality and biodiversity in general.
- Detail actions to meet requirements for Contractors to develop and implement including protocols and measures to ensure community and workers health and safety and incorporating measures and protocols to avoid propagation of COVID-19, consistent with national regulations and the requirements of the WHO, CDC and OSHA requirements.
- The Contractor shall obtain and keep in force during the term of the Contract the permits and/or authorizations of the competent bodies and shall be responsible to the Employer for the payment of sanctions decreed by the competent body, for violation of environmental laws and natural resource provisions, health, and cultural heritage, during the period of execution, when that is its responsibility or infringes the Specifications defined by the Employer.
- Damage to third parties caused by non-compliance with the Specifications and the country environmental regulations will be the responsibility of the Contractor, who must remedy them at his cost.
- Describe the proposed approach to manage the environmental and social, health and safety impacts during the execution of the Works, including a description of the mitigation measures to be used.
- Must provide sufficient detail that demonstrates an understanding of the critical environmental and social aspects related to the project and allow the Project Manager to verify compliance with the environmental and social obligations by the Contractor.
- Define the personnel that will oversee the environmental and social management, the proposed occupational health and safety, as well as describe their roles and responsibilities.
- All mitigation measures proposed in the ESHS - MSIP will be at the Contractor's expense.
- The equipment and machinery must be operated in such a way that it does not cause any deterioration of the public highway in urban areas, the soils, flora, and water courses, as well as the minimum impact on fauna. The use, transit, or parking of mobile equipment on public roads, riverbeds or streams and other sites other than the work area is not allowed, unless strictly necessary and with the authorization of the Project Manager.
- The supply of fuel, lubricants and maintenance of mobile equipment and machinery, including washing, must be carried out in such a way that the waste from these activities does not contaminate the soil or water.
- The construction camp, if any, should be located on stable land, devoid of important forests or vegetation, easily accessible and requiring a minimum of earthworks. Septic tanks or

latrines must be provided for staff (only if a geotechnical study indicates this is possible), or instead the Contractor will permanently provide a portable toilet at each job site.

- It is the Contractor's obligation to keep it in impeccable sanitary conditions and to properly dispose of the waste. The Project Manager must be informed in advance of the frequency with which they will be cleaned.
- The ESHS - MSIP must define how solid waste will be disposed, through the municipal service and if applicable, separated by categories (organic, glass, metal, wood, paper, plastic) for proper storage and subsequent disposal. In any case the Contractor shall be responsible for the adequate disposal of waste and demonstrate its compliance.
- It is the Contractor's responsibility to properly dispose, according to the national regulations of Jamaica, all solid or liquid waste that is generated as a product of construction, testing, commissioning, or any waste generated by their workers in their daily actions. The Project Manager may require that records and documents related to the garbage deposit be shown in legally accepted places.
- In the works opening and leveling operations, the ESHS - MSIP must define control measures over the waste of the materials in order not to cause collapses in the surrounding area and drag of sediments to the water courses. There must be a prior plan of disposal (dump) of inert waste, which must also consider the restoration of the landscape (corrective earthworks and vegetation). The dump site will comply with all national regulations and must be approved by the Project Manager. Its location must be such that it does not affect river channels or streams, destabilize the surrounding land, and affect the landscape.
- The excess material, product of the works to be executed must be accumulated by the Contractor to be used in restorations and future works. Otherwise, it must be disposed in the previously established and appropriate dump site(s).
- The accumulated material that will later be used in landscape restoration must be covered with tarps or waterproof material, in order to avoid wind erosion or rain runoff.
- The Contractor must take the necessary measures to ensure that cement, aggregates, fresh concrete, and other solid waste do not have the destination of river channels or streams or cover productive soils.
- It is the sole responsibility of the Contractor to carry out the necessary actions to ensure adequate dust control on site. In order to avoid discomfort to the population and impact to the environment due to the generation of dust, product of earthworks, ditching works or land conditioning, the Contractor must spray the respective area, especially during the dry season, limiting the amount of water to what is strictly necessary.
- When the gutters or drainage works converge directly into a river, they must be provided with civil works that allow sedimentation to settle and prevent erosion and, if necessary, establish some type of prior maintenance, before driving them to the receiving body. In any case, the drag of sediments and pollutants into sewage systems, rivers, and streams will not be allowed.
- The drains must be built following contour lines towards suitable natural channels and in case indications have been made in the permit for the evacuation of rainwater works, shaped in accordance with them. If this is not possible, protection works must be built for the discharge of water (energy dissipation structures) to prevent erosion.

- When there is a need to temporarily divert a natural watercourse, the Contractor must obtain prior permission from the competent authorities. It must be restored to its original conditions by the Contractor, under the specific direction of the Project Manager.
- Materials that exist in a channel in the public domain should not be removed, except in areas specifically approved or granted in concession as a source of materials by the competent government authority. In any case, the deterioration of the area must be avoided and at the end of the use, the necessary works must be carried out to recover the affected area, in accordance with the country environmental regulations.
- When there are vestiges of occupation of materials of archaeological interest due to prospecting, ditching, earthworks of any kind or land conditioning, the contractor will immediately inform the Project Manager, to coordinate with the competent authority the analysis and rescue of the material found and in the dictation of the actions to follow. Until then, the works cannot continue.
- It is the Contractor's responsibility to implement the provisions of the bidding documents on the collection and treatment of sewage.
- In order to use hazardous materials or materials of restricted use in the works, the authorization of the Project Manager must be requested, who will decide whether or not this material can enter the construction site.
- Any contravention or actions of people who work in the project or inhabit in the construction site that cause environmental and health damages, must be immediately informed to the Project Manager and the Contractor must take appropriate measures to eliminate or mitigate them. The Contractor shall be responsible for taking the appropriate corrective or compensatory action, at its cost, determined by the competent authority.
- If burns are to be carried out for any reason, they should only be authorized by the competent authority and the Project Manager. The procedure and control of this activity is the sole responsibility of the Contractor, which must have duly approved by the Project Manager a fire risk mitigation plan, prior to carrying out the activity.

4. Environmental, Social, Safety and Health in the Workplace Code of Conduct

The Environmental, social, safety and health in the workplace Code of Conduct, elaborated by the Successful bidder must comply with the specifications included in this bidding document, particularly in Section IV: Code of Conduct, and the following specifications:

- The Contractor shall comply with the country legislation regarding occupational safety and environmental protection practices. Likewise, the contractor must comply the following specifications:
    - The workplace must remain orderly and in optimal health and safety conditions.
    - Workers are prohibited from wearing jewelry (rings, bracelets, chains, others), broken clothing or shoes, and any clothing that could cause work accidents.
    - The pathways for workers and people outside the work (external) must be free of hoses, cables, electrical cords, which can cause people to trip on or fall.

- It should be stored scaffoldings and platforms only what is necessary for the work being carried out, without causing unnecessary overweight.
- Scaffoldings, platforms, and ladders must be in perfect condition.
- Emergency exits must be located, which facilitate the rapid evacuation of the property under construction. Said evacuation routes must be free of materials and equipment that obstruct the passage.
- Safety measures must be implemented for the storage and handling of hazardous materials such as fuels, solvents, paints, thinners, among others.
- All personnel must use basic protective equipment such as: helmet, reflective vest, shoes with non-slip soles and metal toe caps, safety glasses, ear protectors (the latter in case their work requires it), and all what is necessary to maintain their good health. In the case of the use of reflective vests, these should be used only at ground level and not so at heights.
- The use of additional safety equipment, such as masks, should be implemented for personnel exposed to toxic or dangerous materials.
- Workers working with oxygen and acetylene equipment should wear cotton clothing.
- For jobs that involve handling objects that can cut, break, burn, or damage hands, workers should wear gloves, which must be in good condition.
- All work involving excavations (such as boxes, wells, septic tanks) must have a visible sign indicating caution or a perimeter protective tape as a sign of danger.
- When work is carried out on a metal structure or others at a height greater than 1.80 m workers must use harnesses and lifelines to ensure their safety. This condition applies for working conditions near slopes of a certain height, precipices or other types of spaces that endanger the integrity of the workers.
- All the trucks that enter the project site and circulate within must have the corresponding covers, to avoid spills of the material they transport.
- All nails, screws, fragments of wood, metal, glass, or other sharp elements loose or present in pieces of wood removed, must be collected immediately, removed at the time of wood removal, and deposited in the corresponding containers, in order to avoid damage to people and vehicles passing through the site.
- Sanitary booths should be cleaned at least every other day, to maintain minimum sanitary standards.

- All workers must maintain good conduct during their stay at the construction site, so they must always be sober and use appropriate vocabulary, clothing, and other associated aspects. The Contractor will be responsible for correcting any breach and even immediately replacing one of the workers, if applicable.
- The Project Manager will verify compliance with the aforementioned practices and may request the replacement of personnel who do not comply with these provisions and even the application of sanctions to the Contractor, the Project Administrator or the Construction Managers since they are responsible for ensuring for its compliance.
- The Contractor must state before the Project Manager that he has trained all the personnel who will remain or transit on the site. Likewise, it must have an incentive or sanctioning

mechanism to promote human safety standards and install in a visible place for workers a sign or fence with the description of the necessary implements to safeguard its integrity.

- The Contractor who omits these provisions will be subject to a written warning from the Project Manager. If after the written warning the Contractor persists in its omission, the Project Manager may consider it as a breach of contract.

Section VIII. Schedule of Payments

1. Works 1

For the payments of the Contract Price of Works 1 the following table will be used together with the specifications below.

Table VIII.1

Milestone	Condition to payment	Applied Percentage to the Milestone (APM)
1	Approval of the Reports of Subphase 1.2 b	5
2	Approval of the Reports of Subphase 1.2 c	5
3	Approval of the Reports of Subphase 1.2 d	5
4	Approval of the Reports of Subphase 1.2 e	5
5	Approval of the Reports of Subphase 1.2.f	5
6	Approval of the Reports of Subphase 1.2 g	2
7	Issue of the Design Completion Certificate	3
8	Delivery Duty Paid and Storage completed of the hospital	20
9	Installation & Tests completed of the hospital	15
10	Commissioning completed of the hospital	15
11	90 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
12	180 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
13	270 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
14	365 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
15	450 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
16	540 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
17	630 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

18	730 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

When each condition of payment in each hospital is verified and approved by the Project Manager, there will be the following payment:

AP = Lump sum for the Design and build at the hospital offered for Works 1 in the Letter of BID x APM

2. Works 2

For the payments of the Contract Price of Works 2 the following table will be used together with the specifications below.

Table VIII.2

Milestone	Condition to payment	Applied Percentage to the Milestone (APM)
1	Approval of the Reports of Subphase 1.2 b	5
2	Approval of the Reports of Subphase 1.2 c	5
3	Approval of the Reports of Subphase 1.2 d	5
4	Approval of the Reports of Subphase 1.2 e	5
5	Approval of the Reports of Subphase 1.2.f	5
6	Approval of the Reports of Subphase 1.2 g	2
7	Issue of the Design Completion Certificate	3
8	Delivery Duty Paid and Storage completed of the hospital	20
9	Installation & Tests completed of the hospital	15
10	Commissioning completed of the hospital	15
11	90 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
12	180 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
13	270 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
14	365 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
15	450 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

16	540 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
17	630 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
18	730 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

When each condition of payment in each hospital is verified and approved by the Project Manager, there will be the following payment:

AP = Lump sum for the Design and build at the hospital offered for Works 2 in the Letter of BID x APM

3. Works 3

For the payments of the Contract Price of Works 3 the following table will be used together with the specifications below.

Table VIII.3

Milestone	Condition to payment	Applied Percentage to the Milestone (APM)
1	Submission of Revised/Updated Workplan	5
2	Submission of Designs/Specification of the hospital	10
3	Delivery Duty Paid and Storage completed of the hospital	25
4	Installation & Tests completed of the hospital	20
5	Commissioning completed of the hospital	20
8	90 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
7	180 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
8	270 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
9	365 days after the Hospital Completion Date (Operation & Maintenance and Defects Liability Period of the hospital)	3
10	450 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
11	540 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

12	630 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2
13	730 days after the Hospital Completion Date (Defects Liability Period of the hospital)	2

When each condition of payment in each hospital is verified and approved by the Project Manager, there will be the following payment:

AP = Lump sum for the Works 3 at the hospital offered in the Letter of BID x APM

Section IX. Contract Forms

Attached in this Section is the Declaration of Beneficial Ownership form that must be completed by the selected Bidder if so established by the BDS in reference to ITB 40.1. Samples of the Contract Agreement, acceptable forms of Bid Performance, and Advance Payment Securities are provided in this Section IX. Bidders shall not complete the Performance and Advance Payment Security forms at this stage of the procurement process. Only the successful Bidder shall be required to provide these two securities.

Beneficial Ownership Disclosure Form

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

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Bidder. In case of joint venture, the Bidder must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Bidder is any natural person who ultimately owns or controls the Bidder by meeting one or more of the following conditions:

- *directly or indirectly holding 25% or more of the shares*
- *directly or indirectly holding 25% or more of the voting rights*
- *directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder*

RFB No.: [*insert number and identification of the process*]

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

In response to your request in the Letter of Acceptance *dated [insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) we hereby provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Bidder (Yes / No)
[include full name (last, middle, first), nationality, country of residence]			

OR

(ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions:*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

OR

(iii) We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Bidder shall provide explanation on why it is unable to identify any Beneficial Owner]

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder]"

Name of the Bidder: *[*insert complete name of the Bidder*]_____

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*]_____

[*] In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder. In the event that the Bidder is a joint venture, each reference to "Bidder" in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

[**] Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Letter of Acceptance

[letterhead paper of the Employer]

[The Letter of Acceptance shall be the basis for formation of the Contract as described in ITB 40 and 41. This Standard Form of Letter of Acceptance shall be filled in and sent to the successful Bidder only after evaluation of bids has been completed, subject to any review by the Bank required under the Loan Agreement.]

[indicate date]

Number of Identification of the RFB and Title of the Contract *[indicate the number of identification of the RFB and the Contract title]*

A: *[Indicate the name and address of the selected Bidder]*

This letter is to communicate that in this manner our Entity accepts your bid dated *[indicate the date]* for the design and build for *[indicate the name of Contract and number of identification as it was issued in the PCC* for the Contract Price equivalent[11] to *[indicate the amount in figures and in words]] [indicate the name of the currency], with corrections and modifications*[12] according to the Instructions to Bidders

[select one of the following options (a) or (b) and delete the other one]

(a) We accept the designation of *[indicate the name of the candidate proposed by the Bidder]* as Technical Adjudicator[13].

(b) We do not accept the designation of *[indicate the name of the candidate proposed by the Bidder]* as Technical Adjudicator, and by sending a copy of this Letter of Acceptance to *[indicate the name of the Authority for the appointment]*, we are therefore, requesting that *[indicate the name],* the Designating Authority appoint the Technical Adjudicator according to ITB 38.1.[14]

Herein, we instruct you to (a) proceed with the mentioned Works design and construction, according to the Contract documents, (b) sign and return the Contract documents attached and (c) send the Performance Guarantees according to ITB 36.1, that is, within 21 days following receipt of this Letter of Acceptance, and according to Sub-Clause 52.1 of the GCC.

Authorized Signature

_____

[11] Delete equivalent to " and add "of" if the Contract Price is expressed in only one currency

[12] Delete “corrections and” or “and modifications”, if not applicable. Refer to the Notes about the Contract Form (next page).

[13] It will be used only if the selected Bidder indicates in its Offer disagreement with the Technical Adjudicator proposed by the Employer in the Instructions to Bidders and subsequently, proposes another candidate.

[14] It will be used only if the Bidder selected indicates in its Offer not to agree with the proposed Technical Adjudicator by the Contracting Party in the ITB, and consequently, proposes another candidate and the Contracting Party does not accept the counterproposal.

Name and Position of Signatory:

_____

Name of Entity: _____

Attachment: Agreement

Contract Agreement

This Agreement made the *[insert day]* day of *[insert month]*, *[insert year]* between *[insert name and address of Employer]* (hereinafter called "the Employer") and *[insert name and address of Contractor]* (hereinafter called "the Contractor") of the other part.

Whereas the Employer is desirous that the Contractor execute the design and build of *[insert name and identification number of Contract]* (hereinafter called "the Works") and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

Now this Agreement witnessed as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein 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.

Annex

Details about modifications or corrections according to item 2. above.

In Witness whereof the parties thereto have signed this Agreement to be executed the day and year first before written.

Official Seal *[Name of the witnessing Entity]]* _____

Was stamped in this present document and attested in presence of:

_____

Signed, Sealed and Issued by _____

Witnessed by: _____

Signature binding the Contracting Party *[signature of the Contracting Party authorized representative]*

Signature binding the Contractor *[signature of the Contractor authorized representative*

Performance Bond

*[The **Surety/successful Bidder** providing the Bond shall fill in this form in accordance with the instructions indicated in brackets, if the Employer requires this type of security]*

By this Bond, *[insert name and address of Contractor]* as Principal (hereinafter called "the Contractor") and *[insert name, legal title, and address of surety, bonding company, or insurance company]* as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[insert name and address of Employer]* as Obligee (hereinafter called "the Employer") in the amount of *[insert amount of Bond] [insert amount of Bond in words]*,[15] 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 Contract with the Employer dated[16] the *[insert number]* day of *[insert month]*, *[insert year]* for *[insert name of Contract]* in accordance with the documents for the design and build, 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 the Employer to the Contractor under the Contract, less the amount properly paid by the Employer to the Contractor; or

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[15] *An amount is to be inserted by the Surety, representing the percentage of the Contract Price specified in the Contract Data, and denominated either in the currency(ies) of the Contract or in a freely convertible currency of type and amount acceptable to the Employer.*

[16] *Date of Letter of Acceptance or Agreement.*

(3) pay the Employer the amount required by the 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 issuance of the Certificate of Completion.

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 *[insert day]* day of *[insert month]*, *[insert year]*.

Signed by *[insert signature(s) of authorized representative(s)]*
on behalf of *[name of Contractor]* in the capacity of *[insert title(s)]*

In the presence of *[insert name and signature of witness]*
Date *[insert date]*

Signed by *[insert signature(s) of authorized representative(s) of Surety]*
on behalf of *[name of Surety]* in the capacity of *[insert title(s)]*

In the presence of *[insert name and signature of witness]*
Date *[insert date]*

Bank Guarantee for Advance Payment

*The **bank/successful bidder** providing the Guarantee shall fill in this form in accordance with the instructions indicated in brackets, if an Advance Payment is to be provided under the Contract*

[insert Bank's name, and address of issuing branch or office]

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

Date: *[insert date]*

ADVANCE PAYMENT GUARANTEE No.: *[insert number]*

We have been informed that *[insert name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with you, for the execution of the design and build 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, an advance payment is to be made against an advance payment guarantee in the sum or sums indicated below.

At the request of the Contractor, we *[insert name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures]* (*[insert amount in words]*[17]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the Advance Payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the Advance Payment referred to above must have been received by the Contractor on its account number *[insert account number]* at *[insert name and address of Bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the Advance Payment repaid by the Contractor as indicated 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 eighty (80) percent of the Contract Price has been certified for payment, or on the *[insert number]* day of *[insert*

[17] *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.*

month], [insert year],[18] 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, ICC Publication No. 758.

_____

[insert signature(s) of authorized representative(s) of bank]

[18] *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 may consider adding the following text to the form, at the end of the penultimate paragraph: " We agree to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to us before the expiry of the guarantee."*