

**Government of
Democratic Socialist Republic of Sri Lanka**

Ministry of Power & Energy

CEYLON ELECTRICITY BOARD

Request for Proposals

**Development of 100 MW_{AC} Solar Park Facility at
Siyambalanduwa on Build, Own and Operate (BOO) Basis and
Construction of 132 kV Transmission Facility on Turnkey Basis**

**VOLUME I
BID DOCUMENT**

Issued on: 22nd August 2022
Bid No.: TR/RED&PM/ICB/2022/002/C
Employer: Ceylon Electricity Board
Country: Sri Lanka

Ceylon Electricity Board
P.O. Box 540,
Colombo 02,
Sri Lanka.

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INVITATION FOR BIDS

Ref: TR/RED&PM/ICB/2022/002/C

Date: 22-08-2022

Development of 100 MW_{AC} Solar PV Power Plant in Siyambalanduwa on Build, Own and Operate (BOO) Basis and Construction of 132 kV Transmission Facility on Turnkey Basis

The Ceylon Electricity Board (“CEB”) on behalf of the Cabinet Appointed Negotiating Committee (CANC) invites Project Proponents to submit Proposals for the development of the Siyamabalanduwa 100 MW Solar Park Facility and related Transmission Facility, in a single bidding process. Basic details of the Project and the information related to the Proposal are given in the ‘Instructions to Project Proponents’. Further details of the same will be provided in a Compact Disc (CD).

The successful Project Proponent will be required to establish a Project Company incorporated under the Companies Act, No. 7 of 2007, with a registered office in Sri Lanka. The Project Company shall enter into the Project Agreements: Power Purchase Agreement, Contract for Development of Transmission Assets with CEB and Land Lease Agreement with Sri Lanka Sustainable Energy Authority (“SLSEA”), and Implementation Agreement with Government of Sri Lanka (“GOSL”). An Operational Period of twenty years following the Commercial Operation Date (COD) of the Project is provided in the Project Agreements.

Each Proposal must be accompanied by a Proposal Security for an amount of USD 267,900 (or equivalent in Sri Lankan Rupees at the time of bid closing). Proposal Security shall be an unconditional bank guarantee issued by a bank operating in Sri Lanka which is approved by the Central Bank of Sri Lanka, or a bank based in another country, but the Proposal Security shall be certified by a bank operating in Sri Lanka, which is approved by the Central Bank of Sri Lanka. An irrevocable letter of credit or a cashier’s certified cheque is not acceptable.

CEB/CANC reserves the right to reject any or all Bids or cancel/withdraw the Invitation to Bids without assigning any reason whatsoever and in such a case no Project Proponent/ shall have any claim arising out of such action.

Each Project Proponent shall provide a postal address in Sri Lanka, e-mail address and a fax number for receipt of RFP-related information. Project Proposals shall be submitted to the following not later than 1100 hrs of 21st October 2022.

Chairman, CANC, Ministry of Power & Energy
C/O, Deputy General Manager – Renewable Energy Procurement & Performance
Monitoring
Ceylon Electricity Board,
No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,
Colombo 00500, Sri Lanka.

INSTRUCTIONS TO PROJECT PROPONENTS

Development of 100 MW_{AC} Solar PV Power Plant in Siyambalanduwa on Build, Own and Operate (BOO) Basis and Construction of 132 kV Transmission Facility on Turnkey Basis

Basic instructions to the Project Proponents related to the Development of 100 MW Solar Park Facility and Construction of Transmission Facility are provided through this Bid Document, which is Volume I of the Request for Proposals. Further details of the same will be provided in a Compact Disc (CD), and it is the responsibility of the Project Proponents to ensure that they obtain the CD from the CEB and comprehend with all the information included, and submit their proposals in accordance with the requirements mentioned therein. The CD shall contain the following.

Volume I: Bid Document

Volume II: Formats of the letters and the information to be submitted in the Proposal

Volume III: Draft Power Purchase Agreement (PPA)

Volume IV: Draft Agreement on the Transmission Facility

Volume V: Draft Implementation Agreement

Volume VI: Draft Land Lease Agreement

Volume VII: Schedules related to the PPA and the Transmission Agreement

Attachments of Volume VII:

1. Plans and Drawings (Schedule 2)
2. General Technical Specifications of Transmission Line (Schedule 5)
3. General Technical Specifications of Grid Sub-stations (Schedule 5)
4. Report of Environmental Impact Assessment (Schedule 19)
5. Solar Resource Data (Schedule 19)

Detailed map (Annex XI of Volume I) is also separately attached.

1. Project Description

1.1 Scope of the Project

The Proposal shall include the following packages of a solar PV project and the related transmission facility, as briefly described below (“**Project**”).

Package I: Finance, design, supply, construction, testing, commissioning, operation and maintenance of 100 MW_{AC} solar Photo-Voltaic (“**PV**”) plant in Siyambalanduwa Divisional Secretary area of Uva Province, Sri Lanka, on Build–Own–Operate (“**BOO**”) basis as described below, hereinafter referred to as the “**Solar Park Facility**”.

The Solar Park Facility shall generate a maximum of 100 MW_{AC} power at the CEB metering point (33 kV voltage level) and shall include an appropriate number of solar PV panels mounted on single-axis trackers, power inverters, 33 kV collector network, switch gear and protection schemes, stand-by/auxiliary/emergency power requirements, water requirements, SCADA facilities up to the termination/metering point and all other appurtenant equipment to operate a solar PV plant. The Solar Park Facility must comply with “Embedded Generation Guideline, CEB Grid Code” and all other requirements as specified in the RFP Document.

Package II: Finance, design, supply, construction, testing, commissioning and handover of 2 Nos. of 63 MVA, 33/132 kV step-up transformers and all other grid components of Siyambalanduwa collector sub-station, 132 kV overhead transmission line of approximately 27 km from Solar Park Facility to CEB grid sub-

station at Monaragala and necessary upgrades at Monaragala grid sub-station for interconnection, on Turnkey basis, hereinafter referred to as the “**Transmission Facility**”.

1.1.1 Annual Engineering Audit

Project Company shall allow the CEB to carry out annual technical audits of the Solar Park Facility with or without prior notice, during the Operation Period.

1.2 Project Development Procedure

The successful Project Proponent shall establish a single purpose project company (“**Project Company**”) incorporated under the Companies Act, No. 7 of 2007 with a registered office in Sri Lanka for the construction and commissioning of the Solar Park Facility and the Transmission Facility. The government of Sri Lanka shall hold a golden share, pursuant to the Electricity Act, No. 20 of 2009. Key steps in the project development process are given below.

- submit an application to SLSEA for carrying out an on-grid renewable energy project and obtain an Energy Permit in accordance with the Sri Lanka Sustainable Energy Authority Act, No. 35 of 2007
- obtain a Generation License from Public Utilities Commission of Sri Lanka (“PUCSL”) pursuant to the Electricity Act, No. 20 of 2009
- obtain and maintain permits for the importation of materials and equipment for the Project, and any other permits and/or licenses required for construction and operation of the Project Company, according to applicable laws
- design, procure, construct, and commission the Solar Park Facility and Transmission Facility within the schedule agreed upon in the Project Agreements, and hand over the Transmission facility to CEB after commissioning
- operate and maintain the Solar Park Facility for the Operational Period specified in the Project Agreements or as may be otherwise agreed between the Parties.

The financing of the Project through a mixture of equity and debt is the sole responsibility of the Project Company. At least 20% (twenty percent) of the financing required by the Project Company to develop this Project shall be in the form of equity. The Project Company shall obtain the balance portion of the financing in the form of debt from commercial sources with support from export credit agencies and international financial institutions.

In view of the compelling technical and financial characteristics and the long-term nature of BOO Projects, the GOSL through its instrumentality, Board of Investment of Sri Lanka (“**BOI**”) may provide the Project Company with certain concessions and incentives. The Project Proponents are required to liaise with BOI to obtain incentives and concessions and other forms of support. The Project Proponents are advised to obtain confirmation from BOI on the above, prior to furnishing the Proposal.

Any direct or unconditional GOSL guarantees or assurances are not available to the Project Company for the project finances, except the assurances provided in the Project Agreements. The Project Company and the lenders to the Project Company must look to revenues earned through the effective and efficient operation of the Project for returns on investments and service of debt, together with the security provided (being the letters of credit) for the project revenues under the Project Agreements. Accordingly, Project Proponents’ Proposals shall not assume or rely on any privileges, concessions or guarantees from the government or government agencies. Any such assumptions may be regarded as a material deviation and may result in the rejection of the Proposal.

1.3 Land Availability

1.3.1 Solar Park Facility

The Solar Park Facility will be located in the Siyambalanduwa Divisional Secretariat area in Monaragala district. An extent of 220 Ha of government owned land has been identified for the Project, and upto 200 Ha of this land will be allocated for the Project based on the exact land requirement. The Project Company shall enter into a land lease agreement with SLSEA, and the Project Company is required to make land lease payment for a period of 20 years, at the stage of signing the Land Lease Agreement. At the end of the term of the land lease agreement, the Solar Park Facility shall be dismantled and disposed by the Project Company, and the land shall revert to SLSEA. The Project Company shall be responsible for fencing and securing the project site including electric fencing to deter wild elephants and construction of all internal roads and services within the Project.

1.3.2 Transmission Facility

2×63MVA, 33/132 kV step-up transformers shall be established at the Solar Park Facility, along-with double circuit (ACSR Zebra type) 132 kV transmission line of approximately 25 km long, from the proposed collector sub-station (CSS) at solar park in Siyambalanduwa to the existing Monaragala GSS, which shall consist of about 30 m tall steel lattice towers. A land corridor of approx. 27 km with 30 m width has been identified, and the necessary clearances for the construction of towers will be obtained by CEB. Detailed maps of transmission line corridor with coordinates of angle tower locations, functional specifications of 132 kV transmission line, 33/132 kV collector substation and upgrades at Monaragala grid sub-station will be provided by the CEB.

1.4 Environmental Considerations

Environment Impact Assessment (“EIA”) has been carried out for the Solar Park Facility and the Transmission Facility, and Environmental Clearance for the Project has been granted by the Project Approving Agency; the Environmental Approval will be handed over to the Project Company by SLSEA. The report of EIA is attached in Schedule 19 of Volume VII. The Project Proponent shall strictly adhere to the conditions stipulated in the Environment Clearance for the Project, during the construction phase as well as operation of the plant.

1.5 Access and the Transportation of Plant & Equipment to the Site

The Project Company shall be responsible for transportation of all plant, equipment and materials to the Project Site and shall meet the costs of all works. The Project Company shall study the access route and all issues and costs involved in performing its responsibilities. The Project Company shall consider the cost of all works related to transportation of all plant, equipment and materials to the project site and add to the Proposal. The Project Company shall construct a temporary access route for transport of heavy equipment during the Construction Period, and the necessary assistance to obtain permission for constructing a temporary road through adjacent lands for the transportation of heavy equipment will be provided by SLSEA, in case such assistance would be required.

1.6 Site Utilities

Project Proponents shall make provision in their Proposals for power supply requirements during the Construction Period. The Project Company may apply to the CEB for a 33 kV connection to the Project Site for power during the Construction Period. Power supply would be made on the same terms and conditions as applicable at that time for CEB’s relevant consumers.

Project Proponents must arrange/develop sources of water for domestic needs, fire service and other power station purposes and make due allowance in their Proposals for the corresponding treatment requirements. Collection, treatment and safe disposal of wastewater, solid waste and other site utilities shall be the responsibility of the Project Company.

1.7 Success Fee Payment

SLSEA has involved in the preliminary project development activities. The selected Project Proponent is required to make compensation for these preliminary project development activities by way of a Success Fee payment of LKR 536 million. The Project Proponent is required to make this Success Fee payment to SLSEA immediately after the award of the tender.

1.8 Project Agreements

The draft Project Agreements that shall be governed by and interpreted in accordance with the laws of the Democratic Socialist Republic of Sri Lanka, shall be referred to in connection to this RFP Document, which will include:

- (i) Power Purchase Agreement (PPA) to be entered into with CEB for finance, design, procure, construct, test, commission, operate and maintain the Solar Park Facility and for the sale of the energy output of the Solar Park Facility
- (ii) Contract for Development of Transmission Facility to be entered into with CEB
- (iii) Land Sub-Lease Agreement to be entered into with SLSEA
- (iv) Implementation Agreement to be entered into with the Government of Sri Lanka

1.9 Project Milestones Schedule

Activity	Date	Duration (Days)
Issuance of RFP	22-08-2022	0
Pre-bid meeting	22-09-2022	31
Receiving requests for clarifications	07-10-2022	46
Deadline for submission of Proposals	21-10-2022	60
Evaluation by the Project Committee (PC)	26-12-2022	126
Recommendation by CANC	02-01-2023	133
Cabinet Approval	26-01-2023	157
Award of the Contract to the Successful Party with PUCSL approval	09-02-2023	171
Preliminary agreements/SPV formation/acceptance of the Award with Performance Bond	10-02-2023	202
Obtaining Energy Permit from SLSEA and “No objection” from PUCSL	10-04-2023	233
Signing of PPA, and Transmission Facility Contract Agreement	24-04-2023	247
Signing of Land Lease agreement and Implementation Agreement	08-05-2023	261
Total		261

- Submission of Preliminary Obligations Bond – within one month from the date of award
- Submission of Construction Notice and Construction Performance Bond – Within 3 months from the signing of PPA and Transmission Facility Contract Agreement
- Construction & Commissioning – within 24 months from the date of issuing of Construction Notice

1.10 Disclaimer

- (a) The content of this invitation is provided to Project Proponents to assist them in obtaining a general understanding of the proposed Project. It does not constitute a recommendation to Project Proponents to participate in the proposed Project.
- (b) The information, estimates or opinions are based on present circumstances, intentions and beliefs and may require subsequent modification. While the CEB has taken all reasonable care to ensure that the information in this RFP Document is accurate, they make no representation or warranty, expressed or implied, nor takes any responsibility of any kind with respect to the completeness or accuracy of any of the information contained herein. Therefore, the CEB will not be liable for any loss or damage that may arise from interpretations, errors or omissions from this RFP Document.
- (c) Project Proponents should not rely on the presentation made by government employees or their agents in relation to this Project, other than expressly provided for herein.
- (d) CEB shall have the right to accept or reject any or all the Proposals received. CEB reserves the right to terminate the process after the receipt of Proposals, if adequate competition has not been created or/and the tariffs quoted by Project Proponents are not acceptable to the CEB.
- (e) There shall be no contractual or other obligations of the CEB arising from this RFP Document.
- (f) CEB shall have the right to seek any further information and/or clarifications that it may require from Project Proponents.
- (g) CEB reserves the right not to disclose any details regarding the evaluation process.
- (h) There shall be no verbal agreement or conversation with any officers, agents or employees of the GOSL/CEB, either before or after the execution of the Project.
- (i) CEB shall not be responsible for any interpretations or conclusions by the Project Proponent based on data furnished by the CEB or which the Project Proponent may obtain or arrive at from information given in the RFP Document.

2. Instructions to Project Proponents

2.1 Bid Documents

Project Proponents shall examine all instructions, forms, terms, conditions, technical requirements, financial requirements, draft agreements and other information given in the RFP Document. Failure to furnish all information required as per the RFP Document or submission of the Proposal not substantially responsive to the RFP Document in every respect will be at the Project Proponent's risk and may result in rejection of its Proposal.

2.2 Project Site Visit and Clarifications

A site inspection will be organized by CEB on formal request of those Project Proponents to whom this RFP is issued, on 23rd September 2022, to give Project Proponents the opportunity to visit the Project Site and ascertain its location and characteristics and assess their influence on implementation of the Project and the costs and revenues associated with its development and operation.

The Project Proponents are advised to visit and examine the site where the plant is to be installed and its surroundings. Gathering site information is the sole responsibility of the Project Proponents that may be necessary for preparing the Proposals and entering into contract(s) for the provision of plants and services. The cost and expense of visiting the Project Site shall be at the Project Proponent's own account.

Project Proponents seeking any clarifications regarding this RFP Document may submit their written requests by facsimile, or by registered mail to:

Chairman, CANC, Ministry of Power & Energy

C/O, Deputy General Manager – Renewable Energy Procurement & Performance Monitoring
Ceylon Electricity Board,
No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,
Colombo 00500, Sri Lanka.
Fax: +94 11 2583344

Such requests should be received by the Chairman CANC no later than the date specified in Project Milestones Schedule (07th October 2022). The CEB will not entertain any request for clarifications on the RFP Document after this date.

2.3 Pre-Bid Meeting

The project proponent's designated representative is invited to attend a Pre-Bid Meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. The Pre-Bid Meeting will be held on as per Project Milestones Schedule (22nd September 2022), at the,

Office of Deputy General Manager – Renewable Energy Procurement & Performance Monitoring
Ceylon Electricity Board,
No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,
Colombo 00500, Sri Lanka.

Note: This venue is subject to change based on the responses to the RFP document.

The Clarifications provided at the pre-bid meeting shall strictly relate to any explanations that may be required in relation to the RFP Document issued to the prospective Project Proponents. The pre-bid meeting is not intended to supplement or substitute the due diligence required to be undertaken by each Project Proponent.

Project Proponents can join the pre-bid meeting, either physically or virtually. Those who wish to join virtually, should inform CEB and obtain the meeting link prior to the pre-bid meeting. Not attending the pre-bid meeting shall not disqualify a Project Proponent from furnishing a Proposal.

Answers to the clarifications received on or before the deadline will be officially distributed among the Project Proponents at the pre-bid meeting. Any modification to the RFP Documents that may become necessary as a result of the answers to the clarifications shall be made by CEB exclusively through the issue of an Addendum.

2.4 Amendments to the RFP Document

2.4.1 Amendments and Revisions

The CEB reserves the right to amend, revise or modify this RFP Document. Any Amendments, revisions or modifications of this RFP Document shall be made through the issuance of Addenda by the CEB and a copy of each Addendum shall be sent to all Project Proponents (who have purchased the RFP Document as at the date of issuance of Addenda), on the same day by same means. The RFP Document may be so amended, revised or modified by way of such Addenda **up to 7 (seven) days before the closing date** for the submission of Proposals. However, it shall be the responsibility of the Project Proponents to ensure that they have obtained all such Addenda from the CEB.

If any Addendum is of a nature, which may require substantial changes in the Proposals, the closing date may be extended by a number of days as in the opinion of the CEB, and such Addendum shall enable Project Proponents to reconsider or revise their Proposals. In case CEB decides to extend the Closing Date for submitting Proposals, the validity of the Proposal and Proposal Security will be as per the extended closing date.

Project Proponents are cautioned that no Representative of the CEB is authorised to explain or interpret the RFP Document, and that any interpretation or explanation, if not given in the form of an Addendum, must not be relied upon.

2.4.2 Amendments to Draft Project Agreements

The drafts of the Project Agreements provided in the RFP Document are written to offer adequate incentives to prospective investors and protection to their lenders. Therefore, Project Proponents are requested to minimize deviations to the Project Agreements. Proposals containing material deviations to the draft Project Agreements may be rejected and Proposals that are conditional on non-material deviations will be penalized under the stated evaluation criteria according to their number and significance.

If Project Proponents have concerns with the Project that in their view are not satisfactorily addressed in the draft Project Agreements provided as part of this RFP Document, the Project Proponents may propose Amendments to the Project Agreements in the format specified in Volume II, Part II, Section H, "Proposed Amendments to Project Agreements".

2.5 Proponents Pre-requisites

The Project Proponent shall demonstrate in its Proposal that through its constituent members and its proposed associations it has the technical capability, experience and expertise to finance, design, procure, construct, commission, operate and maintain the Solar Park Facility, and expertise to finance, design, procure and construct the Transmission Facility. In particular, the Project Proponent shall provide evidence of a successful track record in respect to the ability of proposed contractors and suppliers to successfully procure and construct power plants of similar size and technology in countries with a level of technological development and infrastructure support similar to Sri Lanka; and

No Project Proponent, or member of the Project Proponent's consortium, or their parent or affiliate companies, or EPC contractors of the Project Proponent shall have:

- suspension or blacklisting imposed on them by any government or any government agency for any reason whatsoever;
- a record of unsatisfactory past performance, including breach of contract, untimely completion, poor claims history and defective workmanship;
- inordinate overdue debts toward the insurance, revenue or customs authorities of Sri Lanka or of their country of incorporation;
- a record of criminal or civil court cases pending or decided against them involving non-payment of tax, duty or other undertaking with any government or any government agency;
- associated as a member of another Project Proponent's consortium;
- controlling shareholders in common or they receive or have received any direct or indirect subsidy from any of them;
- no the same legal representation, no third party to support material exchange.

2.6 Consortium

The Project Proponent, being a consortium of prospective shareholders in the Project Company and preparing a Proposal as a joint venture company or other form of partnership, shall meet the following conditions.

- The Project Proponent shall identify a lead member who shall undertake to maintain not less than 26% (twenty six percent) of the required equity for the Project (being 26% (twenty six percent) (twenty six percent) of the issued, subscribed and paid up equity capital of the Project Company,) for a period of not less than 5 (five) years from the Commercial Operation Date ("COD") or till the satisfaction of debt which occurs later. Members of the consortium shall collectively maintain not less than 51% (fifty one percent) of the required equity for the Project (being 51% (fifty one percent) of the issued, subscribed and paid up equity capital of the

Project Company) for a period of not less than 5 (five) years from the COD or till the satisfaction of debt which occurs later. This shall be included in the articles of association of the Project Company.

- The Project Company shall undertake to maintain the golden share of the Project Company in favour of the Government of Sri Lanka together with the golden share privileges set forth in the Power Purchase Agreement.
- The consortium shall not have more than 4 (four) members.
- The lead member of the consortium shall be responsible for all communications with and for the Project Proponent. The lead member shall submit the Proposal with powers of attorney, which should either be (a) notarized or (b) attested to by an appropriate authority in the Project Proponent's home country or authenticated board resolution to be signed by a person having a power of attorney of the company. It shall include the specimen signature/s of the authorized person/s for signing the bid, in terms acceptable to the CEB, executed by all members authorizing the lead member and all signatories to execute the Proposal on their behalf.
- The lead member shall also submit duly certified resolutions from the Board of each member company authorizing that member's participation in the Proposal.
- In the case of a company or incorporated joint venture, the Project Proponent shall provide its memorandum and articles of association, in the case of some other form of partnership agreement, it shall provide a memorandum amongst its members demonstrating their commitment to the Project and stating the proposed equity contributions.
- The Proposal shall be signed to legally bind all members, jointly and severally, and the Proposal shall be submitted with a copy of the consortium agreement providing the jointly and severally responsible with respect to the Project.
- The Project Proponent shall provide as part of its Proposal details of the role to be played by each of its members, their intended equity commitment and the organization of the proposed Project Company.
- Once the Project Proponent has submitted its Proposal and for as long as the Proposal is under consideration by the CEB, the members may not dispose of or alter their interest in, or withdraw from, the bidding consortium prior to execution of the Project Agreements.

2.7 Language of the Proposal

The Proposal and all related correspondence, communications and documents in relation to this RFP Document shall be in the English language. Supporting documents and printed literature furnished by the Project Proponent with the Proposal may be in any other language and may be accepted for reference only, provided they are accompanied by an appropriate translation in English language. Summarized translations are not accepted. Supporting materials that are not translated into English language will not be considered.

2.8 Proposal Structure

Proposals shall constitute two separate parts; a Technical Proposal and a Financial Proposal. Project proponents' Proposals shall include the following documents (refer Volume II Proposal Forms):

- (i) Technical Proposal
 - Technical Proposal Letter (Vol. II, Part I (a), Section A)
 - Qualifications of the Project Proponent including the supporting documents (Vol. II, Section B)
 - Project Milestones Schedule (Vol. II, Section C)
 - Technical Data (Vol. II, Section D)
 - Project Proponent's Organisational, Staffing and QA Plan (Vol. II, Section E)
 - Project Proponent's Handover Plan (Vol. II, Section F)
 - Certification of registration under Public Contract Act No. 3 of 1987 (PCA-3 Form)
 - Written confirmation authorizing the signatory of the bid to commit the proponent POA

- In the case of a Proposal submitted by a consortium, the bid shall include a copy of the Consortium Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Consortium Agreement in the event of a successful proposal shall be signed by all partners and submitted with the Proposal, together with a copy of the proposed agreement
 - List of sub-contractors
 - Any other document required by the RFP
- (ii) Financial Proposal
- Financial Proposal Letter (Vol. II, Section G)
 - Deviations to the Project Agreements (Vol. II, Section H)
 - Project Financial Data (Vol. II, Section I)
 - Financing Plan (Vol. II, Section J)
 - Financing Capability (Vol. II, Section K)
- (iii) Proposal Security (Vol. I, Annex II)

2.9 Preparation of the Proposal

In order to prove compliance with all the requirements of this RFP Document, the Project Proponent shall submit the duly filled Forms given in the Volume II of this RFP Document, together with all other information/documentary proof requested in this RFP Document.

The Project Proponent shall prepare the Proposal for Solar Park Facility and Transmission Facility separately and submit them together as one Proposal. Formats for preparation of the Technical Proposals of Solar Park Facility and Transmission Facility are given in Annex VII and Annex VIII respectively and formats for preparation of the Financial Proposals of Solar Park Facility and Transmission Facility are given in Annex IX in Volume I.

Each sheet of the Proposal forms submitted under cover of the Proposal letters required under Volume II of this RFP Document shall conform to the formats specified in Volume II of this RFP Document. Signatures and initials shall be in indelible blue ink. Technical data as well as dimensions and measurements on the drawings submitted with the Proposal shall be quoted in SI units.

2.10 Mandatory Proposal Requirements

Failure of the Project Proponent to meet the requirements of the Responsiveness (Annex VII) and comply with the requirements of this Section 2.10 shall constitute grounds for rejection of the Proposal:

- (i) The Proposal is not responsive and may be rejected if the following conditions are not met:
- Proof of purchase of RFP Document from CEB
 - Certificate of registration under Public Contract Act No. 3 of 1987 (PCA-3 Form)
 - The Proposal is marked and sealed in accordance with the requirements of Clause 2.17;
 - The Proposal contains the information as required under this RFP Document and in the formats specified in Volume II Proposal Letters and Forms, as appropriate.
 - The Proposal is valid for a period of not less than 150 days pursuant to Clause 2.13 and is accompanied by a Proposal Security complying with the requirements of Clause 2.14.
 - A signed Technical Proposal letter is provided with the Proposal in the form specified in Volume II Section A
 - Consortium/ Joint Venture agreement or LOI to form a consortium/ joint venture is provided where the various participants agree to jointly carry out their obligations pursuant to the Project Agreements;

- Resolutions from the Board of each member company authorizing their participation in the Proposal;
 - Power(s)-of-attorney enforceable under the Laws of Sri Lanka are provided with the requisite certificate of non-revocation confirming the authority of the signatories to sign for and on behalf of the project proponent.
 - Duly signed RFP document.
- (ii) The CEB will not consider any Proposal that proposes the following.
- A Project that does not conform to the Minimum Functional Specification;
 - Relaxation of environmental standards;
 - Use of second-hand plant, equipment, components and materials;
 - Reliance on government privileges, concessions and/or guarantees not expressly provided for in the Project Agreements;
 - Material deviations to the draft Project Agreements that, in the opinion of the CEB, would or is likely to reduce the benefits of the Project accruing to the CEB.
- (iv) The Project Proponent's Financial Proposal will not be opened until its Technical Proposal has been evaluated. To enable responsiveness of key elements of the Financial Proposal to be confirmed as part of the Responsiveness assessment, the Technical Proposal shall contain an explicit and unequivocal affirmation regarding the contents of the Financial Proposal. The affirmation shall be provided as an attachment to the Technical Proposal letter and shall be in the form specified in Section A of Volume II.

As a condition of requirement of Responsiveness, the affirmation shall confirm the following.

- The deviations to the Project Agreements set out as specified in the Section H of the Part II of Volume II in the Project Proponent's Financial Proposal represent a complete list of deviations it would seek to discuss and do not contain any material deviations;
- The Tariff offered by the Project Proponent complies with the structure and pricing mechanisms specified in the draft PPA;
- The Project Proponent's Financing Plan provided as Section J of Part II of Volume II of its Proposal is comprehensive and has been endorsed by the Project Proponent's Financial Advisor as bankable without material change to either the Project Agreements or the government's support package, such endorsement being in the form specified in Section G Part II of Volume II;
- The Financial Proposal contains a memorandum from all intended subscribers of equity (for the avoidance of doubt, the golden share of Government of Sri Lanka shall be carried interest), the execution of which shall have been duly authorized by the board of respective subscribers and evidenced vide duly certified copy of the board resolution, committing them to:
 - the full amount of the required equity, being no less than 20% (twenty percent) of the Project's total capital requirements;
 - disbursement of equity in accordance with PPA requirements.

2.11 Cost of Proposals

The Project Proponent shall bear all costs, including those of professional advisors, incurred by them in preparing and submitting their Proposals, executing the Project Agreements and finalizing financing regardless of the conduct or outcome of the evaluation process, or subsequent financial ability of the Project. Neither the CEB, GOSL, nor any GOSL Agency, nor any representative of these parties shall have any liability whatsoever to any Project Proponent in respect of any decision taken by Project Proponents in relation

to its bid whether or not in reliance on any matter supplied by the government, any government agency, or any of their representatives.

2.12 Interest and Exchange Rate Movements

The Project Proponent shall bear all risks associated with movements in interest rates and exchange rates over the period up to the expiration of the Proposal validity period.

2.13 Proposal Validity

Each Proposal shall constitute a firm offer and one that shall remain valid and open for acceptance for a period of 150 days from the Bid Closing date. During this period the proposed tariff shall remain valid and no Project Proponent shall withdraw its Proposal. Any Proposal offering less than the stipulated Proposal validity period will be rejected.

Prior to the expiration of the original Proposal validity period, the CEB may request one or more of the Project Proponents to extend the period of validity for a specified period. The request for an extension to the original validity date and the responses to it shall be made in writing. If any Project Proponent does not agree to such extension, it may advise the CEB of its decision in writing prior to the expiration of the original period without forfeiting its Proposal Security and withdraw its Proposal. If, following the issuance by the CEB of a notice of extension, a notice of withdrawal is not received by the CEB prior to the expiration date of the original validity period, the extension shall be considered to have been accepted by the Project Proponent and the Project Proponent shall extend the effective period of the Proposal Security accordingly or be disqualified.

2.14 Proposal Security

A Proposal Security payable in Sri Lanka shall be furnished to the CEB with the Proposal. The Proposal Security shall be to the value of USD 267,900 (or equivalent in Sri Lankan Rupees at the time of bid closing). This security shall be in the form of a bank guarantee issued by a commercial bank operating in Sri Lanka approved by the Central Bank of Sri Lanka or a bank based in another country but the guarantee confirmed by a bank operating in Sri Lanka approved by Central Bank of Sri Lanka, in the form provided in Annex II. The Proposal Security shall be valid for a period of not less than 180 days from the Bid Closing date. Any Proposal not accompanied by a Proposal Security complying with this Section will be rejected.

A Project Proponent shall forfeit the Proposal Security without any notice, demand, or other legal process and the CEB shall be entitled to encash the Proposal Security:

- (i) if the Project Proponent withdraws its Proposal during the period of Proposal validity; or
- (ii) if the Project Proponent's Proposal contains any false statement or material misrepresentations; or
- (iii) if a member of the Project Proponent disposes of or withdraws its interest in the Project prior to execution of the Project Agreements so that it no longer complies with the qualification requirements.
- (iv) in the case of a shortlisted Project Proponent, if it fails to:
 - a. begin negotiations within one month of being invited to do so by the CEB/CANC; or
 - b. execute the Project Agreements within 3 (three) months of being invited to negotiate, such negotiations being conducted in mutual good faith and based on the Project Proponents' Proposal and on the terms and conditions of the draft Project Agreements, as amended prior to Bid Closing; or
 - c. Furnish the Preliminary Obligations Bond by the time and in the form required by the RFP Document.

Project Proponents who decline the CEB request to extend the validity on request to do so, shall have their Proposal Security returned to them upon the expiration of their Proposal validity. After the shortlisted Project Proponents have been selected and have extended the validity periods of their Proposals if necessary, the Proposal Security of those Project Proponents who were not shortlisted will be returned.

The Proposal Securities of shortlisted Project Proponents will be discharged or returned, or both, without interest, upon the sooner of the expiration date of their Proposals or the execution of the Project Agreements with the Project Company formed by the successful Project Proponent. The return of the Proposal Security of the successful Project Proponent shall be conditional on the furnishing of a Performance Bond.

2.15 Project Bonds

On awarding the Contract to the successful Project Proponent, the Project Proponent shall form the Project Company and shall provide the CEB with a Preliminary Obligations Bond, to the value of USD 3.4 million or equivalent LKR with a validity of 4 months, within 30 days of the award.

The Preliminary Obligations Bond will be discharged or returned, or both, (without interest) upon achievement of Financial Close and provision of the Construction Performance Bond for an amount of USD 8.93 million or equivalent LKR pursuant to Clause 5.3.2(i) of the PPA, with a validity period of 24 months. The Preliminary Obligations Bond may be forfeited in accordance with the provisions of the PPA.

The Construction Performance Bond will be discharged or returned, or both, (without interest) upon achievement of Commercial Operation Date (“COD”). The Construction Performance Bond may be forfeited in accordance with the provisions of the PPA.

2.16 Proposal Authorisation

The Technical Proposal Letter and the Financial Proposal Letter shall be signed by the person or persons duly authorised to bind the Project Proponent to the Proposal. Proof of authorisation in the form of written notarially executed power(s)-of-attorney and resolutions of each member's board in terms acceptable to the CEB from consortium members to authorise the signatories to sign on their behalf shall be attached to the Technical Proposal Letter and Financial Proposal Letter.

The forms for the Proposal letters and the Proposal Security and other securities, as appropriate, shall be adopted without modification other than the inclusion of dates, references to addenda, names of signatories, addresses and the like

2.17 Submission of Proposal, Format, Sealing and Marking

Project Proponents shall submit: (i) one original of the Technical Proposal (clearly marked “Original”) and two copies (each clearly marked “Copy1”, “Copy 2”). Technical Proposals for Solar Park Facility and Transmission Facility shall be prepared as two separate reports but enclosed in one envelope; and (ii) one original of the Financial Proposal (clearly marked “Original”) and two copies (each clearly marked “Copy1”, “Copy 2”). Financial Proposals for Solar Park Facility and Transmission Facility shall be prepared separately but enclosed in one envelope. Any discrepancy between the Original and a Copy will be resolved in favor of the Original. Electronic copies of all proposals shall also be provided in compact discs.

The Proposal, comprising the Technical Proposal and Financial Proposal, shall be delivered in a sealed package labelled in bold letters:

PROPOSAL FOR DEVELOPMENT OF 100 MW_{AC} SOLAR PV POWER PLANT ON BUILD-OWN-OPERATE (BOO) BASIS AND CONSTRUCTION OF 132 kV TRANSMISSION LINE ON TURNKEY BASIS

RFP Document No.....

PROJECT PROPONENT'S FULL NAME AND ADDRESS: -----

If the Proposal is not sealed and marked as specified above, the CEB may reject it as non-conforming and will assume no responsibility for its misplacement or premature opening. The package shall also clearly state the project proponent's name and address.

Within this package there will be three inner packages:

- (i) Inner Package 1: The Technical Proposal shall be enclosed in the Proposal package in a separate sealed inner package bearing the following identification

Technical Proposal

DEVELOPMENT OF 100 MW_{AC} SOLAR PV POWER PLANT ON BUILD-OWN-OPERATE (BOO) BASIS AND CONSTRUCTION OF 132 kV TRANSMISSION FACILITY ON TURNKEY BASIS

RFP Document No.....

PROJECT PROPONENT'S FULL NAME AND ADDRESS: -----

Within

the first inner package there will be three sealed envelopes:

- One envelope, containing one set of the Technical Proposal documents clearly marked "Original" on the envelope and the first and the last pages of the document; and
- Two other envelopes, each containing the copies of the Technical Proposal clearly marked "Copy1", "Copy 2" on the envelope and the first and the last pages of the document.

- (ii) Inner Package 2: The Financial Proposal shall be enclosed in the Proposal package in a separate inner sealed envelope bearing the following identification:

DO NOT OPEN

FINANCIAL PROPOSAL FOR DEVELOPMENT OF 100 MW_{AC} SOLAR PV POWER PLANT ON BUILD-OWN-OPERATE (BOO) BASIS AND CONSTRUCTION OF 132 kV TRANSMISSION FACILITY ON TURNKEY BASIS

RFP Document No.

Within second package three

the inner shall be sealed

envelopes:

- One envelope, containing one set of the Financial Proposal documents with clearly marked "Original" on the envelope and the first and the last pages of the document and a compact disc containing the documents in electronic form; and

- Two other envelopes, each containing the copies of the Financial Proposal clearly marked “Copy1”, “Copy 2” on the envelope and the first and the last pages of the document and a compact disc containing the documents in electronic form.
- (iii) Inner Package 3: A third inner envelope in the Proposal package shall be marked “Proposal Security” on the envelope and shall carry the name of the Project Proponent and contain the original of the Proposal Security document.

The name and address of the Project Proponent shall be written on each of the inner packages allowing the return of the Proposal unopened in the event of revision or withdrawal prior to Bid Closing or late delivery or, in the case of the Financial Proposal, the Proposal not reaching the Financial Proposal Evaluation.

The proposals prepared in accordance with the RFP shall be submitted to the following address;
 Chairman, CANC, Ministry of Power & Energy
 C/O, Deputy General Manager – Renewable Energy Procurement & Performance
 Monitoring
 Ceylon Electricity Board,
 No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,
 Colombo 00500, Sri Lanka.

2.18 Modification and Withdrawal of Proposal

At any time prior to Bid Closing a Project Proponent may modify or withdraw its Proposal after submission, provided that the modification or withdrawal is received in writing by the CEB prior to Bid Closing and complies with the following:

- (i) A Project Proponent’s modified Proposal shall be prepared, sealed, marked and delivered in accordance with the requirements for submission of Proposals, including those specified in Clause 2.17 (including Proposal Security), with envelopes additionally marked "MODIFICATION". On receipt of the modified Proposal the CEB shall return to the Project Proponent its prior unopened Proposal (including the original Proposal Security), if the Project Proponent so requests in writing.
- (ii) A Project Proponent may request in writing that its unopened Proposal be withdrawn and, provided such request is received prior to Bid Closing, such Proposal (including Proposal Security), shall be returned to the Project Proponent. Withdrawal of a Proposal during the interval between the Bid Closing and before the expiration of the period of Proposal validity specified in the Proposal Letter will result in the forfeiture of the Proposal Security pursuant to Section 2.14.

2.19 Bid Closing

Bid Closing shall be 1100 hrs Sri Lankan standard time on 21st October 2022. Proposals must be received by the CEB at the address stipulated in Section 2.17 by Bid Closing. Proposal submission must be made to the address specified in Section 2.17 by either of the following methods.

- (i) Hand-delivery
- (ii) Courier.

Proposals submitted by means other than (i) or (ii) above will not be accepted.

The CEB may, at its discretion, extend the deadline for submission of Proposals by issuing an Addendum.

2.20 Late Proposals

Any Proposal received after Bid Closing will be rejected and returned unopened regardless of the reason for the delay. It is the sole responsibility of the Project Proponent to comply with the provisions of this RFP Document for submission of Proposals.

2.21 Proposal Opening

2.21.1 Technical Proposals

For all Proposals properly lodged with the Bid Opening Committee, the envelopes containing the Technical Proposals, the corresponding Proposal Securities will be opened at the offices of CEB immediately following the Bid Closing. Project Proponents choosing to attend the opening shall sign a register evidencing their attendance.

At the opening of the Technical Proposals, Bid Opening Committee will examine the Proposals and record Project Proponents' names, any withdrawals, the presence or absence of Proposal Securities, whether the documents have been properly signed and complete and such other details as the CEB may consider appropriate. Bid Opening Committee will prepare minutes of the openings of the Technical Proposals and will immediately announce:

- the names of the Project Proponents;
- the value of the Proposal Security and the name of the issuing agency;
- whether both the Technical and Financial proposals have been received.

Information of a commercially sensitive nature to each Proposal will not be disclosed.

Proposals for which a notice of withdrawal has been received pursuant to Section 2.18 will not be opened.

The proponents will be notified in writing who have been rejected on the grounds of their Technical Proposals being substantially nonresponsive to the requirements of the RFP and return their Financial Proposals unopened.

2.21.2 Financial Proposals

Financial Proposals of the project proponents whose Technical Proposals have passed the Evaluation shall be opened at the offices of CEB on a date to be announced later. Those Project Proponents whose Technical Proposals have passed the evaluation and wish to attend the opening of the Financial Proposals, may do so.

2.21.3 Confidentiality

Information relating to the examination, clarification, evaluation and comparison of Proposals and recommendations concerning the short listing of Project Proponents and award of the Project will not be disclosed to Project Proponents or other persons not officially concerned with such process except as provided for herein.

Neither the GOSL nor CEB nor any government agency, nor any of their representatives will be liable for any loss or damages resulting from any disclosure before, during and after the bidding process. Any effort by a Project Proponent to influence the GOSL, CEB or any government agency or any of their representatives in the process of examining, clarifying, evaluating and comparing Proposals, and in decisions concerning the award of the Project, may result in the rejection of the Project Proponent's Proposal and forfeiture of the Proposal Security.

3. Requirements of the Proposal

The complete Proposal shall constitute Technical Proposal and Financial Proposal. The Project Proponent shall enclose its Technical Proposal and its Financial Proposal in separate sealed envelopes as specified in Section 2.17.

3.1 Technical Proposal

The Technical Proposal shall demonstrate a sound knowledge of the requirements of the Project, an understanding of the obligations of the Project Company, and the capacity and capability of the Project Company to undertake the Project in compliance with the Project Agreements.

The Technical Proposal shall be submitted under cover of a letter that shall be in the form specified in Volume II, Section A. The information provided in the Technical Proposal shall be presented in the formats specified including those provided in Sections B to F of Volume II. Failure to provide this information in full and in the forms specified may result the Proposal as non-responsive.

Project Proponents shall provide general technical information, with technical literature where available, to enable the CEB to fully understand the Solar Park Facility and Transmission Facility proposed by the Project Proponent and to make judgements about, amongst others, its efficiency, durability, reliability and general compliance with the Minimum Functional Specification. Technical Proposals for Solar Park Facility and Transmission Facility shall be prepared separately. Functional Specifications for the preparation of the Technical Proposal is given in the Schedule 5 of Volume VII.

3.1.1 Solar Park Facility

The information to be provided as part of the Technical Proposal shall include, amongst others:

- (i) Design

Applicable standards for design, materials, manufacture, mechanical and electrical works, civil and structural works, communications, fire protection, operation and maintenance, decommissioning & clearing of the land (payments for the last 2 months will be made after removing all the materials and clearing the land) and all other works to be undertaken to fulfil the requirements of the Project Agreements. Such applicable standards will be consistent with an efficient operating life of the Project of no less than 20 years.

Indicative Project Site layout drawings showing locations of key features of the proposed Project including buildings, cooling water system, and storage facilities, services, interconnection, access roads and, as appropriate, such locations shall be within the areas designated on the Indicative Site Plan as being available for the particular purposes. The indicative Project Site layout drawings shall nominate the location of drainage and effluent discharge points.

The Project Proponent's transportation plan for transporting plant, equipment and materials to the Project Site shall describe the routes to be taken for normal and heavy loads and shall specify:

- (i) Works required to be carried out, and
 - (ii) the assumed responsibility for undertaking and paying for such works.
- (ii) Solar PV Arrays and Auxiliaries

Project Site civil works including all site utilities and services, including panel mounting platforms, constructing dykes as necessary and construct effective drainage and dewatering systems to prevent flooding of buildings and plant facilities. Outline design of the Project auxiliaries, services and systems including,

service water, fire detection and protection system. Related data, with details of equipment redundancy levels, shall be provided.

Details of Solar PV generating plant including:

- (a) Solar PV array: modules and its supporting structure on single axis tracker
- (b) Power conversion units (inverters)
- (c) Power transformers to connect at 33 kV
- (d) LV and MV switchgear and wiring
- (e) Control, monitoring and Instrumentation (SCADA)
- (f) Any other power conversion equipment (such as STATCOM) required to meet CEB grid code requirements.
- (g) All civil work for internal roads and pathways, inverter housing, boundary fencing, transformer foundation, switchyard facility, cable trench, drainage system, etc.
- (h) Communication system
- (i) Ancillary systems
- (j) O&M facilities
- (k) Plant security arrangement including CCTV
- (l) Separate chain link boundary for switch yard facility
- (m) Building construction for control room, meeting room and retiring room facilities
- (n) Water supply system including establishment of bore well, storage, demineralization for module cleaning and purification for consumption

(iii) Electrical Interconnection

Electrical interconnection shall be described in the single line diagram up to the Interconnection Point showing all circuit breakers, isolators, Metering Point, current and potential transformers for metering and protection, earthing switches, lightning arrestors, power transformers and generators including fiber optic cable network for communication.

(iv) Metering System

Metering equipment shall consist of one main and one back up system having the same configuration. Metering equipment will be located at the Interconnection Point (Refer the drawings).

(v) SCADA and Telecommunications

- (a) The Solar Park Facility shall interface with the System Control Centre (SCC) of CEB and provide telemetered data to SCC's Supervisory Control and Data Acquisition (SCADA) system through a Remote Terminal Unit compatible with the type as used in the CEB System Control Center existing SCADA system. The resolution of data shall be at the individual inverter level Logs of curtailment, alarms, equipment failures. Maintenance undertaken also to be provided on a monthly basis.
- (b) The telecommunications facility will be compatible with the International Standard System and common practices of a solar power plant development and shall be equipped with, Fixed-Line telecommunications with PABX facility; Wireless communications; Fiber optic line from the Solar Park Facility up to the Interconnection Point; Direct link communications with the National System Control Center

(vi) Forecasting

The solar park shall provide the following.

- (a) Long-term forecasting – rolling annual and monthly forecasts based on historical long-term weather data averages on a monthly basis
- (b) Short-term forecasting – using on-site measuring equipment to provide CEB with the ability to react to fluctuations in irradiance on a daily and half-hourly basis

- (vii) General

All other details necessary to enable the CEB to ascertain if the Project will meet the Minimum Functional Specification. A format for preparation of the Technical Proposal given in Annex VIII of Volume I.

3.1.2 Solar Dat

Solar resource map of Sri Lanka and the Project Site Specific Solar Data will be included in the CD provided to the Project Proponents.

3.1.3 Transmission Facility

3.1.3.1 Transmission Line

The following documents and drawings shall be submitted with the Bid.

- (i) All documents required to demonstrate project proponent's, EPC Contractor's or Expert Company's ability and capability as specified in clause 4 – Qualification requirement for project proponents
- (ii) List of standards the Bidder intends to follow, for the electrical and the civil works
- (iii) Duly signed Scope of Works Technical Specification Drawings
- (iv) Duly completed and signed Supplementary Information
 - a) Manufacturers and place of manufacture and testing
 - b) Technical particulars and guarantees
 - c) Times for delivery and completion and contract completion
 - d) Departures from the Specification
 - e) Manufacturers and subcontractors' statement of experience
 - f) Documents, drawings and information to be submitted
 - g) Adherence to the Environmental Acts, Regulations and/or Guidelines
- (v) Verifiable evidence of manufacturers' experience in manufacturing comparable type of equipment offered under this bid to meet the criteria stated the Technical Specification for Transmission Line in Volume VII
- (vi) Type Test certificates in accordance with standards specified in relevant Chapters in the Technical Specification in Volume VII, issued by an independent testing laboratory for, Conductor; Earth wire; OPGW; Insulators; Hardware fittings; Towers
- (vii) Layout drawings of Switchgear equipment at Switchyard
- (viii) General bar chart of the design, manufacturing, shipping, erection and commissioning schedule clearly showing the transmission line outage
- (ix) Certificates issued by an independent international organization to ensure compliance with the ISO 9001 (latest) standards by the Manufacturers of all main equipment listed above

- (x) Manufacturer's Authorization letters shall be provided with the bid in respect of all main equipment listed above
- (xi) The manufacturer's guarantee that they have an established department that will serve the Ceylon Electricity Board in supply of spares for at least 10 years for all main equipment.
- (xii) Descriptive information for equipment being offered including;
 - a) List of recommended spare parts with technical literature.
 - b) List of special tools or fixtures required for installation, testing, maintaining and operating the equipment.
 - c) List of cost of special tools, lifting devices required for installation, operation and maintenance.
- (xiii) The documents and drawings which are of a sufficient standard to indicate clearly all manufacturing and structural details must be prepared by the Contractor and accompany each Technical Bid
 - a) Outline and general arrangement for all basic types of towers or supports, with main dimensions, steel qualities, body and leg extensions, including Wire clearance diagrams for each tower type, for specified swing angle.
 - b) Details of types of foundations for the above
 - c) Drawings of the Earthing of Towers
 - d) Drawings of Insulator discs
 - e) All types of Insulator strings with hardware fittings
 - f) Conductor and Earthwire dead-end assembly with jumper terminals
 - g) OPGW dead-end assembly with jumper terminals for with and without joint boxes
 - h) Earthwire and OPGE suspension assembly
 - i) Conductor and Earthwire mid-span joints and Repair sleeves
 - j) Vibration dampers
 - k) All fittings of OPGW
- (xiv) Method statements for the detailed survey, Foundation works, Erection works, Stringing and finishing works
- (xv) General bar chart of the design, manufacturing, shipping, erection and commissioning schedule clearly showing the transmission network outages.

3.1.3.2 Grid Substation

- (i) All documents required to demonstrate Project Proponent's, EPC Contractor's or Expert Company's ability and capability as specified in clause 4 – Qualification Requirement for Project Proponents
- (ii) List of standards the Bidder intends to follow, for the electrical and the civil works
- (iii) Duly signed Scope of Works Technical Specification Drawings
- (iv) Duly completed and signed Supplementary Information,
 - a) Manufacturers and place of manufacture and testing
 - b) Technical particulars and guarantees
 - c) Times for delivery and completion and contract completion
 - d) Departures from the Specification
 - e) Manufacturers and subcontractors' statement of experience
 - f) Documents, drawings and information to be submitted
 - g) Adherence to the Environmental Acts, Regulations and/or Guidelines.

- (v) Verifiable evidence of manufacturers' experience in manufacturing comparable type of equipment offered under this bid to meet the criteria stated in the Technical Specification for Transmission Line in Volume VII
- (vi) Type Test certificates in accordance with standards specified in relevant Chapters in the Technical Specification in Volume VII, issued by an independent testing laboratory for, Circuit Breakers; Disconnectors; Surge Arrestors; Current Transformers; Voltage Transformers; Power Transformers; Earthing Transformers; Auxiliary Transformers; 36 kV Indoor Switchgear; All control, protection and metering equipment; All HV cables and accessories; Communication equipment; All outdoor post insulators and bushings for current and voltage transformers; Energy meters, Digital disturbance recorders, Power quality analyzers.

(Note: If the offered equipment is manufactured under license, type test certificate for the equipment for the manufacture in the offered factory shall be submitted with the bid.)

- (vii) Certificates issued by an independent international organization to ensure compliance with the ISO 9001 (latest) standards by the Manufacturers of all main equipment listed above.
- (viii) Manufacturer's Authorization letters shall be provided with the bid in respect of all main equipment listed above.
- (ix) The manufacturer's guarantee that they have an established department that will serve the Ceylon Electricity Board in supply of spares for at least 10 years for all main equipment.
- (x) Descriptive information for equipment being offered including;
 - a) List of recommended spare parts with technical literature
 - b) List of special tools or fixtures required for installation, testing, maintaining and operating the equipment
 - c) List of cost of special tools, lifting devices required for installation, operation and maintenance.
- (xi) Details/drawings of indoor 36 kV switchgears
- (xii) Typical arrangement drawings of control, metering and relay panels similar to the panels offered
- (xiii) Protection block diagrams and typical diagrams of unit protective equipment and bus bar zone protection similar to the system offered
- (xiv) Typical diagrams of architecture of substation automation system and associated system similar to the architecture offered

3.1.4 Organisational, Staffing and QA Plan

The Project Proponent shall submit a detailed organizational chart, staffing plan and proposed quality assurance program in accordance with the requirements outlined in Volume II, Section E.

3.1.5 Handover Plan

The Project Proponent shall submit a detailed handover of the Transmission Facility in accordance with the requirements outlined in Volume II, Section F.

3.1.6 Insurance Plan

The Project Proponent shall submit a detailed insurance plan for the Transmission Facility. The plan shall accord with the Project Agreements and shall specify the type of insurances, the amount of cover and the proposed provider.

The Project Proponent shall further submit a contingency plan to ensure uninterrupted supply of electricity from the solar park, which shall set forth provision for amongst other things back-up inverter ('Contingency Plan').

3.1.7 Domestic Participation

Project Proponents shall provide information about the extent to which they plan to employ local contractors, suppliers and labour during the Construction Period and Operational Period.

3.1.8 Services and Utilities

The Project Company will be required to arrange or provide all services and utilities for the Project such as electricity, water and communication. The Project Company may apply to the CEB during the Construction Period for a 33 kV connection on the same terms and prices as apply ordinarily to the relevant consumer category.

3.1.9 Environmental Obligations

The Proposal shall comply with all the recommendations of EIA report and environment clearance issued for the Project. EIA report is included in this RFP, and SLSEA is the project proponent for EIA. On behalf of SLSEA, the developer shall follow all the requirements mentioned in the Environment Management Plan.

3.1.10 Project Milestones Schedule

The Project Proponent shall submit a Project Milestones Schedule pursuant to the requirements set out in Section C of Volume II.

3.1.11 Affirmations relating to the Financial Proposal

To enable CANC to confirm the responsiveness of the Proposal prior to detailed evaluation of Technical Proposals, Project Proponents shall include with their Technical Proposals a formal affirmation in relation to its Financial Proposal. Such affirmation shall be in the form specified in the attachment to the Technical Proposal letter (Section A of Volume II).

3.2 Financial Proposa

Project Proponents shall complete the Financial Proposal strictly in accordance with the RFP Document and, where specified, the required information shall be provided in the requested format including those formats defined in Volume II. The Financial Proposal shall include:

- (i) Financial Proposal letter, and
- (ii) completed Forms, computer files and other information as required pursuant to this RFP Document, and
- (iii) any additional documents as may be required to meet specified information requirements or to demonstrate the Project Proponent's capacity to undertake the Project in accordance with the Project Agreements.

Failure to provide such information in full shall be a cause for rejection of the Proposal on the basis of non-responsiveness.

3.2.1 Tariff for Energy Generated

Project Proponents shall base its proposed payments for electricity on the tariff structure and payment terms specified in the PPA.

3.2.2 Fixed Annual Payment for Transmission Facility

Fixed payment (paid in equal instalments every 6 monthly) for transmission component for a period of 10 years as specified in Contract for Development of Transmission Facility. Cost for the Transmission Facility should be within the ceiling of USD 21 million.

3.2.3 Success Fee

SLSEA has involved in the preliminary project development activities. The selected Project Proponent is required to make compensation for these preliminary project development activities by way of a Success Fee payment of LKR 536 million.

3.2.4 Institutional Payments to be directly incurred by the Project Company

Once the Project Company is established, it will be required to incur an Application Fee of LKR 5.1 million & an Energy Permit Fee of LKR 100 million for SLSEA and a Generation Licence Fee of LKR 1.5 million for PUCSL. Project Proponents shall consider these payments in the preparation of Financial Proposal.

3.2.5 Land Lease Payment

The Project Company shall make a land lease payment of LKR 50 million at the stage of signing the Land Lease Agreement.

3.3 Project Agreements

The draft Project Agreements given in this RFP Document are:

- (i) Power Purchase Agreement (PPA) - The RFP Document provides a draft PPA in the Volume III. The Project Company shall enter into the PPA with CEB for:
 - finance, design, procure, construct, test, commission, operate and maintain the Solar Park Facility
 - the sale of the energy output of the Solar Park Facility
- (ii) Contract for Development of Transmission Facility in the Volume IV
- (iii) Land Sub-Lease Agreement - The RFP Document provides a draft Land Sub-Lease Agreement in the Volume VI. The Project Company shall enter into the Land Sub-Lease Agreement with SLSEA for the use of the Project Site.
- (iv) Implementation Agreement – The RFP Document provides a draft Implementation Agreement in the Volume V. The Project Company shall enter into the Implementation Agreement with GOSL.

The Project Agreements shall be governed by and interpreted in accordance with the laws of the Democratic Socialist Republic of Sri Lanka. The ruling language shall be English, which shall also be the language for any documents or information or communications relating to the Project Agreements. Disputes not amicably resolved may in certain circumstances be referred for binding Expert resolution or shall otherwise be referred to international arbitration in Colombo under UN Commission on International Trade Law (UNCITRAL) rules.

4. Qualification Requirement for Project Proponents

4.1 Technical Experience

The Project Proponents shall provide the information on technical experience in the format given in the relevant Forms in Volume II.

4.1.1 Experience in Solar Plant Design

Any Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, shall have experience in designing at least two 100 MW solar power plants and implementation from the inception to the financial closure of a cumulative capacity of 25 MW of solar power plants with the minimum individual plant capacity of 1 MW. Such plants shall be in successful operation for a period of not less than two (2) years prior to the Bid Closing Date. If the Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, does not have such an experience in designing or implementation of solar power plants for the required capacities mentioned above, then the Project Proponent shall enter into an agreement with an expert company who has the required experience as mentioned above in designing or implementation of solar power plants as the case may be, to obtain services for the development of the Project. Such plants shall be in successful operation for a period of not less than two (2) years prior to the Bid Closing Date.

4.1.2 Experience in Design & Construction of Transmission Lines

Any Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, shall have experience in successful development (from the inception of the Financial Closure) of design, supply, erection, stringing and commissioning of 100 km or more (in aggregate) of 132 kV (or higher voltage) double circuit, three-phase, single (or more sub conductors) ACSR Zebra (or higher equivalent cross-section) conductor transmission line, including one optical fiber ground wire (OPGW) and one galvanised steel wire (GSW) in the past ten (10) years as a contractor, JV partner or sub-contractor. If the Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, does not have such an experience in designing or implementation of similar transmission lines for the required capacities mentioned above, then the Project Proponent shall enter into an agreement with an expert company who has the required experience as mentioned above in designing or implementation of solar power plants as the case may be, to obtain services for the development of the Project. Such plants shall be in successful operation for a period of not less than two (2) years prior to the Bid Closing Date.

4.1.3 Experience in Design & Construction of Grid Sub-stations

Any Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, shall have experience in successful development (from the inception of the Financial Closure) of design, supply, installation and commissioning of 4 Nos. of 132/33 kV 63 MVA or higher rated power transformers; design, supply, installation and commissioning of 8 Nos. of 132 kV outdoor air insulated switchgear bays; design, supply, installation and commissioning of 22 Nos. of 33 kV indoor gas insulator switchgear bays; within the last five (5) years period as a contractor, JV partner or sub-contractor. If the Project Proponent or at least one member of the consortium, in case the Project Proponent is a consortium, does not have such an experience in designing or implementation of similar grid substations for the required capacities mentioned above, then the Project Proponent shall enter into an agreement with an expert company who has the required experience as mentioned above in designing or implementation of solar power plants as the case may be, to obtain services for the development of the Project. Such plants shall be in successful operation for a period of not less than two (2) years prior to the Bid Closing Date.

4.1.4 Experience of EPC Contractors for Solar Park facility

The Project Proponent shall provide expressions of interest from the intended EPC contractors one of whom will be selected as the EPC contractor for the construction of the Solar Park Facility by the Project Company. Such EPC contractors should have executed minimum two (2) nos. of 100 MW or higher solar PV power plants including associated civil works on EPC basis, provided that one of the above plants shall be outside the EPC contractor's country. Such plants shall be in successful operation for a period of not less than two (2) years prior to the Bid Closing Date. In case the Project Proponent itself is the EPC contractor, having executed successfully minimum two (2) Nos. of 100 MW or higher solar PV power plants including associated civil works on EPC basis as acceptable.

4.1.5 Experience of EPC Contractors for Transmission Line

The Project Proponent shall provide expressions of interest from the intended EPC contractors one of whom will be selected as the EPC contractor for the construction of the 132 kV transmission line by the Project Company. Such EPC contractors should have carried out; design, supply, erection, stringing and commissioning of 100 km or more (in aggregate) of 132 kV (or higher voltage) double circuit, three-phase, single (or higher configuration) ACSR Zebra (or higher equivalent cross-section) conductor transmission line, including one optical fiber ground wire (OPGW) and one galvanised steel wire (GSW) in the past ten (10) years.

4.1.6 Experience of EPC Contractors for Grid Sub-stations

The Project Proponent shall provide expressions of interest from the intended EPC contractors one of whom will be selected as the EPC contractor for the construction of 33/132 kV grid-substation and associated upgrades for the Monaragala grid-substation and Siyambalanduwa collector sub-station by the Project Company. Such EPC contractors should have experience in; design, supply, installation and commissioning of 4 Nos. of 132/33 kV 63 MVA or higher rated power transformers; design, supply, installation and commissioning of 8 Nos. of 132 kV outdoor air insulated switchgear bays; design, supply, installation and commissioning of 22 Nos. of 33 kV indoor gas insulator switchgear bays

within the last five (5) years period as a contractor, JV partner or sub-contractor.

4.1.7 Experience in Operation & Maintenance of Solar Power Plants

Any Project Proponent or at least one member of the consortium shall have experience in successful operation and maintenance of one or more solar PV power generation projects in the past fifteen years with an aggregate capacity of 200 MW or more for a period of more than two years. If the Project Proponent or at least one member of the consortium does not have such an experience or the Project Company expects to outsource operation and maintenance work to a third party, then the Project Proponent shall provide expressions of interest from intended O&M contractors one of whom will be selected as the O&M contractor for the operation and maintenance of the Solar Park Facility by the Project Company. Such O&M contractor shall have the experiences as mentioned above.

4.2 Financial Capability

- (i) Any single Project Proponent or in the case of the Project Proponent is a consortium, the members of the consortium shall demonstrate by certified audited accounts that each can invest the agreed equity in the Project Company.
- (ii) The Project Proponents shall provide the information on financial capability in the format given in the Section K of Volume II.

- (iii) Details regarding the average annual turnover is required including financial requirements for current commitments
- (iv) Cashflow requirement

5. Evaluation Procedure

5.1 Outline of Evaluation Procedure

- (i) Evaluation of Technical Proposals:

Responsiveness - the Proposal is reviewed for completeness and substantial responsiveness in accordance with the Responsiveness Test specified in Annex VI Volume I (Responsiveness Test).

For those Proposals that satisfy the responsiveness requirements, the Technical Proposals are evaluated to verify whether they meet the requirements of the RFP Document, and in particular whether the proposed Project complies with the Minimum Functional Specification.

- (ii) Evaluation of Financial Proposals

The Proposals meeting the technical requirements in the Evaluation of Technical Proposals will be then proceeded for Evaluation of Financial Proposals. Thereafter, the Project Proponent with the highest ranked Proposal, as per described in section 5.6 Evaluation of Financial Proposals, will be invited to discuss terms for executing the Project Agreements. In the event of failing to execute the Project Agreement with the invited Project Proponent, the next ranked Project Proponent may be invited to discuss terms for executing the Project Agreements.

5.2 Clarification of Proposals

During the examination, evaluation and comparison of Proposals, CANC may, at its discretion, ask the Project Proponents for clarification of their Proposals. Request for clarifications and responses shall be in writing and no change in the tariff or substance of the Proposal shall be sought, offered or permitted.

5.3 Right to Reject Proposals

The GOSL/CEB reserves the right to accept or reject any Proposal and to annul the bidding process and reject all Proposals at any time prior to the signing of the Project Agreements, without thereby incurring any liability to the affected Project Proponent or Project Proponents. Project Proponents shall not have any recourse against the CEB, GOSL or any GOSL Agency or their representatives for either rejection by the GOSL/CEB or failure to execute the Project Agreements for any reason whatsoever.

The GOSL/CEB reserves the right to reject the Proposal of any Project Proponent who has qualified on the basis of misrepresented, suppressed or incomplete information.

5.4 Evaluation of Responsiveness of Proposals

In the Evaluation of Proposals, CANC will determine the responsiveness of each Proposal to the mandatory requirements as set out in Clause 2.10.

A Proposal may be disqualified and excluded from further consideration for a failure to meet all conditions of Clause 5.4 or for any other valid reason including those listed below.

- Failure to be responsive, as determined by the Responsiveness Test. Responsiveness criteria to be met under the Responsiveness Test are set out in Annex VI.
- Receipt by CANC of a Proposal after the Bid Closing.
- Failure to submit supporting documentation or any other clarification or any documents requested by CANC within the required time frame.
- Material misrepresentations in the Proposal.
- Illegal conduct or attempt to influence the GOSL/CEB, or any Government Agency or any of their Representatives in their evaluation of a Proposal other than by means expressly sanctioned in the RFP Document.
- Determination by CANC that the Project Proponent is unlikely to be able to fulfil the terms or conditions of the Proposals and of the Project Agreements.

Technical Proposals accepted by CANC in accordance with these principles will qualify for detailed evaluation. If a Proposal is found to be not substantially responsive, it will be rejected by the CEB/CANC and may not subsequently be made responsive by correction or withdrawal of non-conforming deviations or reservations.

5.5 Evaluation of Technical Proposals

The evaluation of Technical Proposals will be conducted to confirm compliance with the Minimum Functional Specification and with the Project Proponent's other obligations as set out in the Project Agreements. The Proposals will be assessed according to their technical compliance with the Project Agreements and the Project Proponents' satisfactory responses to the information requirements in the RFP Document.

Where Technical Proposals contain material non-compliances, the Project Proponent will be disqualified from the Technical Evaluation and the Proposal will be rejected. However, Technical Proposals containing minor non-compliances that are likely to result in higher costs or losses to GOSL, CEB, or other government agencies, the US Dollar or rupee amounts of such costs or losses may be estimated and factored into the Financial Evaluation. Such costs or losses may be included in a calculation of an "evaluated tariff" for the purposes of comparing Financial Proposals.

Proposals passing the Technical Proposal evaluation process will proceed to the Evaluation of Financial Proposals.

5.6 Evaluation of Financial Proposals

The financial evaluation will include a Net Present Value (NPV) calculation using a 4% discount factor over the Term of PPA in connection to the energy charge payments by CEB over a 20-year period and using a 3.8% discount factor for the instalment payments for Transmission Facility over a 10-year period. The lowest NPV value will be considered the most attractive financial offer.

5.7 Shortlisting and Award

The Project will be awarded to a Project Proponent according to the following procedure.

- (i) The Project Committee (PC) will prepare a shortlist of the technically qualified and financially responsive proposals, and those will be ranked based on the NPV, where the proposal with the lowest evaluated NPV is the highest ranked proposal. If necessary, the CEB will ask shortlisted Project Proponents to extend the validity period of their Proposals pursuant to Clause 2.13 of

Volume I. The Proposal Securities of those Project Proponents which were not shortlisted will be returned pursuant to Clause 2.14 of Volume I.

- (ii) CANC may hold the first round of negotiations comprising discussions with the Project Proponent with the highest ranked proposal over a one to two weeks' period. At the end of this period the list of deviations notified by the highest ranked shortlisted Project Proponent in Section H of Volume II will be revised in accordance with the outcomes of these discussions.
- (iii) CANC will then have the second round of negotiations with the highest ranked Project Proponent to finalise the Project Agreements. The second round of negotiations takes place over a fixed period specified by CANC prior to the commencement of the second round.
- (iv) If no agreement is reached with the highest ranked Project Proponent within the fixed period, the next-ranked Project Proponent(s) will be invited to substitute;
- (v) CANC may commence negotiations with the next highest ranked Project Proponent who has been replaced the highest ranked Project Proponent.
- (vi) Upon finalization of the Project Agreements and prior to their execution, the successful Project Proponent will:
 - (a) provide the CEB with:
 - a formal opinion from its Financial Advisor to the effect that the Project Agreements are bankable and that Financial Closure will be achieved without the need for amending the Project Agreements or seeking government support in addition to that provided for in the RFP Document;
 - documentation from the Project Proponent's Lenders confirming their intended participation in the Project; and
 - (b) provide the CEB with duly certified copies of the following:
 - certificate of the Project Company's incorporation
 - list of members of the Project Company's board of directors, and details of shareholding traced to the individual level
 - location of the Project Company's registered office
 - copy of the resolution of the Project Company's board of directors initializing persons to witness the affixing of the Project Company seal.
 - (c) reach a formal agreement with its Lenders, the Government and CEB, as applicable, on the final wording of the Direct Agreements;
 - (d) provide the CEB with the Preliminary Obligations Bond in accordance with Clause 2.15 of Volume I.
- (vii) Upon execution of the Project Agreements with the Project Company, the remaining Proposal Securities held by the CEB will be returned to the Project Proponents.
- (viii) The CEB will have the right to reject all Proposals and not make an award.

5.8 Cost of Finalising Project Agreements

The successful Project Proponent (or Project Proponents) shall bear all costs incurred by it in relation to any and all negotiations finalizing of the Project Agreements, including those of professional advisors. Neither the CEB, GOSL nor any government agency nor their representatives shall have any liability whatsoever to the Project Proponent in relation to its decisions or actions finalizing and executing the Project Agreements,

whether or not it has acted in reliance on any matter supplied or represented by CEB, Government, or government agency or their representatives.

LIST OF ANNEXES

- Annex I: Definitions and Interpretation
- Annex II: Form of Proposal Security
- Annex III: Required Approvals, Consents, Permits and Licenses
- Annex IV: Clarifications Form
- Annex V: Proposed Amendments to Project Agreements
- Annex VI: Responsiveness Test
- Annex VII: Format for Technical Proposal - Solar Park Facility
- Annex VIII: Format for Technical Proposal - Transmission Facility
- Annex IX: Format for Financial Proposal - Solar Park Facility and Transmission Facility
- Annex X: Grid Interconnection Specifications
- Annex XI: Detailed survey map and access route

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1.1 Definitions & Interpretation

The provisions of Clause 1 of Volume III Power Purchase Agreement shall apply in interpreting Volume I and Volume II of the RFP Document. Unless the context requires otherwise or it is expressly stated to the contrary, references to clauses, sections, paragraphs and annexes are references to clauses, sections, paragraphs and annexes of this Volume I.

1.2 Definitions

In addition to those terms and expressions defined below, other capitalised terms and acronyms used in this Volume I and Volume II shall have the meanings specified in Volume III (draft PPA – refer Schedule 1 and Schedule 5), Volume IV (draft Implementation Agreement – refer Schedule 1), and Volume V (draft Lease – refer Schedule 1I), as appropriate.

Addendum	means an addendum issued in writing by the CEB to all Project Proponents which may delete, modify, extend or otherwise amend any part of the RFP Document (including the draft Project Agreements).
Bid Closing	means the time and date specified in Section 2.19 by which Proposals must be received by CANC in accordance with Section 2.19.
Bidding Period	means the period for preparing Proposals beginning with the issue of the RFP Document by the CEB and ending on Bid Closing.
BOI	means the Board of Investment of Sri Lanka
BOO	means Build, Own Operate.
CEB	means the Ceylon Electricity Board
Commercial Operation Date	means the date of commissioning and starts selling electricity to the grid
COD	Commercial Operation Date
Construction Period	means the period from the date of signing Project Agreements upto COD
Disclaimer	means the denial of liability for by the CEB, GOSL and GOSL Agencies information contained in this RFP Document as provided at the front of this Volume I and labelled “Disclaimer”.
EIA	means Environmental Impact Assessment
EIA Study	means the study that has been carried out by SLSEA in preparing the Environmental Impact Assessment
EPC	means engineering, procurement and construction
Financial Advisor	means the bank(s) or other financial institution(s) appointed by the Project Proponent for the development of the financial aspects of the

	Proposal, such bank(s) and institution(s) ordinarily offering and being experienced in the provision of financial advisory services for projects of the type and nature of the Project Facility.
Financial Closure	means the date of finalizing loan for the project
Financial Template	means the spreadsheet format for submission of Project costs, Project Facility performance data and financing assumptions.
Financing Plan	means the Project Proponent's plan provided pursuant to Section J of Volume II for raising equity and debt for the limited recourse financing of the Project and for meeting its obligations to shareholders and Lenders.
Forms	means one or more of the forms provided in Sections A to K of Volume II to be completed by Project Proponents.
Government Agency	means the Government or any authority, ministry, department or inspectorate in Sri Lanka.
Grid Point	Grid connection point at Monaragala Grid Substation as shown in Drawings in Schedule II of Volume VII. Up to this point all development costs shall be borne by the project proponent.
IPP	means Independent Power Producer
ISO	means International Standards Organisation
kV	means kilo Volt
Long Term Generation	
Expansion Plan (or LTGEP)	means the generation plan prepared by CEB for 2018-2037, in which is defined the least-cost implementation sequence of generation projects to meet forecast demand in Sri Lanka
MOP	means the Ministry of Power & Energy
MW	means Mega Watt
MWe	means Mega Watt electrical
Operational Period	means 20-year period starting from the Commercial Operation Date
PPA	means the Power Purchase Agreement, a draft of which is provided as Volume III of this RFP Document.
Project Facility	means the facility developed pursuant to the Project (i.e., the Solar Park and the Transmission Facility).
Project Milestones Schedule	have the meaning attributed to it in Section C of Volume II.

RFP Document	means the Request for Proposal Document comprising Instructions to Project Proponents (this volume), Proposal Letters and Forms (Volume II), Draft Power Purchase Agreement (Volume III), Draft Contract for Development of Transmission Facility (Volume IV), Draft Implementation Agreement (Volume V), Draft Land Lease Agreement (Volume VI) and Schedules of Power Purchase Agreement and Contract for Construction of Transmission Facility (Volume VII).
Representatives	means the employees, agents or advisers of a Government Agency
Responsiveness Test	means the test set out in Annex VII to be applied in part satisfaction of the first stage evaluation of Proposals described
CANC	Cabinet Appointed Negotiating Committee
Tariff	means the prices, pricing structure and pricing mechanisms specified in the PPA by which payments for electricity are calculated.
Termination/Metering Point	CEB metering point at the power plant end 33kV level feeding to 33/132 kV step-up transformer as show in drawings Schedule II of Volume VII. At this point CEB fixes its metering equipment for the measurement of Energy Output and the title of electrical energy passes to CEB. The Seller owns all equipment up to this point and Seller has to operate and maintain them at his expense.

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PROPOSAL SECURITY

WHEREAS _____ of _____ (hereinafter called and referred to as the “Project Proponent”) wishes to submit a Proposal to build-own-operate a 100 MW_{AC} Solar Power Plant, and supply & construct 2 nos. 33/132 kVA step up transformers, 132 kV overhead transmission line from Solar Park to Monaragala grid substation including the necessary upgrades at Monaragala grid substation as described in Volume I under Tender Number TR/RED&PM/ICB/2022/002/C.

AND WHEREAS in terms of the Guidelines for Request for Proposal document the project proponent is bound and obliged to furnish a Proposal Security along with its Proposal to ensure the due performance of the Project Proponent in terms of the Request for Proposal document.

AND WHEREAS at the request of the project proponent, we _____ of _____ a commercial bank having its registered office at _____ are agreeable to and desirous of giving such a proposal security.

WE HEREBY irrevocably undertake and are bound and obliged to pay to the Ceylon Electricity Board unconditionally and without demur any sum of money not exceeding a sum of USD/LKR..... on their first demand.

Every demand hereunder shall be in writing and signed by the General Manager, Ceylon Electricity Board and shall be accompanied by a statement to the effect that the project proponent has failed and/or neglected to perform its obligations or abide by the terms of the Request for Proposal document (as may be amended from time to time). For all purposes connected with and relating to this Proposal Security, every such demand shall be conclusive proof that the amount so demanded is lawfully due under this Proposal Security.

All payments hereunder shall be made in Sri Lanka by cheque or bank draft drawn in favour of the Ceylon Electricity Board.

This Proposal Security shall be valid and binding and shall remain in full force and effect up to and including the (Date) (should be 180 days from the closing date for submitting Proposals) and thereafter shall be null and void and of no force or effect (whether the original hereof is returned or not) except in respect of any demand made on or before the aforesaid date.

IN WITNESS whereof this Proposal Security has been signed by the Authorised Signatories of the aforesaid _____ on this _____ day of 20...

Authorised Signatory
Name:
Designation:

Authorised Signatory
Name:
Designation:

Required Approvals, Consents, Permits and Licenses**Annex III**

The approvals, consents, permits and licenses to be obtained by the Project Company shall include those listed below:

	Description of Consent	Government Agency
1.	BOI Status: Status of the Project confirmed under the terms of the BOI Agreement.	BOI
2.	Energy Permit: Permit issued to the Project Company under SRI LANKA SUSTAINABLE ENERGY AUTHORITY ACT, No. 35 OF 2007	SLSEA
3.	Generation License: License issued to the Project Company under Section 2 of the ELECTRICITY ACT NO. 19 OF 2009, as amended.	PUCSL
4.	Visas and work permits: Visas and work permits for foreign personnel properly employed in connection with the Project by the Project Company for the period such personnel are so employed.	BOI / Controller of Immigration & Emigration
5.	Building consents: Consent under the Fire Regulations	Ministry of Defence (Fire Dept.)
6.	Financial consents: All necessary permits and consents required for the effectiveness of the Financing Agreements and related agreements, including in any event: (i) Approval for the Project Company to borrow and make payments in foreign currency, and (i) Approval required for the ownership by foreign persons and entities of equity in the Project Company.	Central Bank of Sri Lanka
7.	Insurance: Exemption from Control of Insurance (Amendment) Act No. 42 (1986) to permit the Project Company to obtain insurance and re-insurance for the Project with insurers outside Sri Lanka; in particular: (i) Remittance or deposit of premiums in foreign currencies to insurers; (ii) Proceeds of any claims under the Project Company's policies may be deposited or retained in foreign currencies outside Sri Lanka; (iii) Conduct and settlement of claims may be undertaken at the sole discretion of the insurers; (iv) Disputes between the insured and insurer will be resolved by the insurers according to such law as the insured and insurer agree.	Controller of Insurance

To:**CLARIFICATIONS FOR THE REQUEST FOR PROPOSALS****Development of 100 MW_{AC} Solar Park Facility on Build, Own and Operate (BOO) Basis and
Construction of 132 kV Transmission Facility on Turnkey Basis****RFP Document No:****Date:****Sent by:****Fax No:**

No.	Volume	Clause	Clarifications sought
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The project proponent shall submit proposed deviations to the Project Agreements according to the format given in the Schedule II of Volume II, Section H1, taking care to ensure to include ALL proposed deviations to the project documents are detailed, explained and reasoned.

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The responsiveness of Proposals will be determined in part by reference to the Project Proponent’s ability to satisfy all requirements of this Annex:

1. <u>Completeness of Proposal</u>	Yes	No	Remarks
1.1 Proposal is correctly sealed and marked (Vol. I, Section 2.17)	_____	_____	_____
1.2 Technical Proposal Letter signed and correct format (Vol. 2, Section A)	_____	_____	_____
1.3 Affirmation regarding Financial Proposal is provided (Attachment to Technical Proposal Letter)	_____	_____	_____
1.4 Satisfactory Proposal Security (Vol. 1, Annex II)	_____	_____	_____
1.5 Proposal is valid for 150 days or more (Vol.1, Clause 2.13)	_____	_____	_____
1.6 All Forms, technical data and other required information is provided (Vol. II, Section D)	_____	_____	_____
1.7 Project Milestones Schedule (Vol. II, Section C)	_____	_____	_____
1.8 Project Proponent’s Organisational Staffing and QA Plan is provided (Vol. II, Section E)	_____	_____	_____
1.9 Project Proponent’s Handover Plan provided (Vol. II., Section F)	_____	_____	_____
1.10 Certificate of Registration under Public Contract Act No. 3	_____	_____	_____
1.11 Proof of purchase of RFP Document from CEB	_____	_____	_____
2. <u>General Requirements and Criteria</u>			
2.1 Powers of attorney confirming signatories’ authority	_____	_____	_____
2.2 Board resolutions from each member of the Project Proponent	_____	_____	_____
2.3 Consortium agreement	_____	_____	_____
2.4 Project Milestones Schedule is complete and confirms Commercial Operation Date	_____	_____	_____
2.5 The Proposal includes an insurance plan for the Project Facility	_____	_____	_____

- 2.6 Project Proponent has named an internationally known Financial Advisor or arranger? _____
- 2.7 No open or unacceptable assumptions made by Project Proponent in its Proposal. _____

3. Technical Data

- 3.1 Scope is complete and interfaces are well-defined _____
- 3.2 Project Facility complies with Minimum Functional Specification _____
- 3.3 The proposed Net Dependable Capacity is: _____
- 3.4 Preliminary designs and descriptions are provided, applicable standards met, new plant and materials proposed _____
- 3.5 Experience reference sheets are provided for major plant items showing them to be proven technology _____
- 3.6 Environmental standards will be met _____
- 3.7 Project Proponent has proposed suitably qualified EPC contractor(s); _____
- 3.8 Project Proponent has proposed suitably qualified O&M contractor(s); alternatively, proposed bidding strategy will ensure award to suitably qualified O&M contractor(s) _____
- 3.9 Operational, Staffing & QA Plan is acceptable (Vol.2, Section E) _____
- 3.10 Hand over Plan is acceptable (Vol.2, Section F) _____

TECHNICAL PROPOSAL – SOLAR PARK FACILITY

The Technical Proposal shall be prepared in the sequence presented below:

1. Cover Page

The Technical Proposal cover should state the name of the project, the project proponent's company name, the date of the Technical Proposal, the person responsible for the Technical Proposal's preparation and all members of the Project Proponent, where the Project Proponent is a consortium, currently participating in the project. The words "Technical Proposal – Solar Park Facility", "Original" and "Copy" should be indicated on the page as appropriate.

2. Technical Proposal Letter

Technical Proposal letter shall be submitted in accordance with the Section A of Volume II.

3. Executive Summary

The Project Proponent shall provide a brief overall summary of its Technical Proposal. The summary should include, at a minimum, a brief overview of the technology and equipment proposed, power delivery period, project location, interconnection (delivery) point, experience with key project elements and permitting schedules etc.

4. Project Description

The Project Proponent's Technical Proposal should describe the Solar Park Facility in great detail. It should include the following types of information in a text discussion (the list below is indicative and not exhaustive):

- (i) Project size, in area and in terms of power generation capability (MW);
- (ii) General description of the solar PV panel and associated equipment;
- (iii) Schedule for permitting, construction and expected date of commercial operation.

The scope and general specifications for the Solar Park Facility are as further set out below in Schedule 5 of Volume VII and should be incorporated in the 'Project Description'.

5. Solar Park Capacity and Plant Characteristics**5.1 Solar Park Capacity**

Capacity must be specified at net generation levels delivered to the Delivery Point.

5.2 Operating Performance

The Project Proponent must provide full details of operating performance. The Project Proponent must propose an applicable availability target.

6. Qualification of the Project Proponent and EPC Contractors

Qualifications and experience of the Project Proponent shall be demonstrated and submitted in standard formats as per PART I (General) - SECTION B and PART I (a) - SECTION B of Volume II.

7. Environmental Assessment

The Project Company shall comply with the environmental requirements set out under the Environmental Approval, including the Environmental and Social Safeguard Requirements during the Construction Period as well as Operational Period.

8. Engineering and Design Concept Plans

The Project Proponent shall demonstrate how its Technical Proposal complies with the technical requirements as set out in Schedule 5 of Volume VII. The Project Proponent is required to provide the following information in a concept plan:

- (i) Design criteria for the detailed design of major civil works and solar plant equipment of the Solar Park Facility;
- (ii) Plan drawings showing the layout of the proposed Solar Park Facility;
- (iii) Design standards of civil works and solar plant equipment which shall comply with international standards and Sri Lankan standards whichever is the superior. In the case of international standards not being available, other standards such as American or UK shall be used;
- (iv) Solar technology, including the make, model and suppliers' names which demonstrates that the proposed Solar PV module supplier shall comply with the following:
 - the solar PV module supplier shall have production track record of production of PV modules for last 5 years;
 - the solar PV module supplier shall have a minimum annual PV module production capacity of 1,500 MW;
 - the solar PV module technology shall be deployed in operational projects with a cumulative capacity of at least 3,000 MW; and
 - solar PV module shall fulfill IEC standards and have minimum warranties.
- (v) Major equipment to be employed, including the make, model and suppliers' names;
- (vi) Manufacturers' warranties; and
- (vii) Major equipment vendors.

9. Operation and Maintenance

- (i) Operating Performance References: CEB is soliciting proposals for proven technologies only. The Project Proponent shall provide historic operating performance data for projects with similar technology, which demonstrate that the proposed technology will be able to achieve the operating targets specified.
- (ii) O&M Plan: The Project Proponent shall provide an operations and maintenance plan ("O&M Plan") which demonstrates that the Solar Park Facility will be operated and maintained in a manner to allow the Solar Park Facility to satisfy its contractual commitments. This O&M Plan should indicate the proposed Solar Park Facility's staffing levels, the schedule for major maintenance activities, plans for inspecting and testing of major equipment, entities responsible for operating and maintaining the Solar Park Facility, and schedule for securing a maintenance agreement.
If an O&M contractor or other entity will be responsible for operating and maintaining the Solar Park Facility, details of the contractor's qualifications, experience and performance record must be provided in this Section. The commitment of the O&M contractor to the Solar Park Facility must be demonstrated.
- (iii) Plant Performance: The Project Proponent shall provide the following projected unit performance information, including values for all parameters:
 - outage rate; and
 - expected availability.

10. CEB Grid Code and Guide for Grid Interconnection of Embedded Generators

Technical Proposal shall comply with the CEB Grid Code and Guide for Grid Interconnection of Embedded Generators. Refer Schedule 5 of Volume VII for web link of above Guides.

11. Interconnection Plan

The Project Proponent shall be responsible for the construction, installation, commissioning and completion of the Interconnection Facilities in accordance with the PPA.

12. Project Milestones Schedule

The Project Proponent shall provide the Project Milestone Schedule as described in Section C of Volume II. The Solar Park Facility shall be completed within twenty-four (24) months from the date of signing the Project Agreements.

13. Technical Data

The Project Proponent shall provide the technical data as described in Section D of Volume II and as per Schedule 5 of Volume VII.

14. Organisational and Staffing Plan

The Project Proponent shall submit a plan setting out its proposed organisational arrangements. The Project Proponent's plan will describe the Project Company's proposals with respect to, amongst others:

- i. The organisational structure of the Project Company;
- ii. The staffing policies and personnel deployments to build, operate and administer the Solar Park.

15. Total Quality Management Plan

The Project Proponent shall describe the Project Company's Quality Assurance Plan. The Quality Assurance Plan shall meet the requirements of ISO 9001:2000 (or latest) and cover all activities as required to comply with the Project Company's obligations under the Project Agreements.

TECHNICAL PROPOSAL – Transmission Facility

The Technical Proposal shall be prepared in the sequence presented below:

1. Cover Page

The Technical Proposal cover should state the name of the project, the Project Proponent's company name, the date of the Technical Proposal, the person responsible for the Technical Proposal's preparation and all members of the Project Proponent, where the Project Proponent is a consortium, currently participating in the project. The words "Technical Proposal – Transmission Facility", "Original" and "Copy" should be indicated on the page as appropriate.

2. Technical Proposal Letter

Technical Proposal letter shall be submitted in accordance with the Section A of Volume II.

3. Executive Summary

The Project Proponent shall provide a brief overall summary of its Technical Proposal. The summary should include, at a minimum, a brief overview of the equipment proposed, power delivery period, experience with key project elements and permitting schedules etc.

4. Project Description

The Project Proponent's Technical Proposal should describe the Transmission Facility in greater detail. It should include the following types of information in a text discussion (the list below is indicative and not exhaustive):

- i. Project details in terms of major equipment, including: solar modules, inverters, plant controllers, cables, combiner boxes, switchboards, communications and SCADA as a minimum
- ii. Project Details of the Transmission Facility in terms of 132 kV transmission line, 33/132 kV step up transformer and grid substation, modifications to Monaragala Grid Sub-station;
- iii. Schedule for permitting, construction and expected date of commercial operation.

The scope and general specifications of the Transmission Facility are as further set out below in Section II of Volume VII and should be incorporated in the 'Project Description'.

5. Qualification of the Project Proponent and EPC Contractor

Qualifications and experience of the Project Proponent shall be demonstrated and submitted in standard formats as per PART I (General) - SECTION B and PART I (b) - SECTION B of Volume II.

6. Environmental Assessment

The Project Company shall comply with the environmental requirements set out under the Environment Approval, including the Environmental and Social Safeguards Requirements during the Construction Period as well as Operational Period.

7. Engineering and Design Concept Plans

The Project Proponent shall demonstrate how its Technical Proposal complies with the technical requirements as set out in Schedule 5 of Volume VII. The Project Proponent is required to provide the following information in a concept plan:

- i. Design criteria for the detailed design of major civil works and equipment/components of grid substation and transmission line of the Transmission Facility;
- ii. Plan drawings showing the layout and electrical line diagrams;
- iii. Design standards of electrical and civil works all plant equipment which shall comply with international standards and Sri Lankan standards whichever is superior. In the case of international standards not being available, other standards such as American or UK shall be used;
- iv. All other drawings mentioned in the Technical Specification;
- v. Major equipment to be employed, including the make, model and suppliers' names;
- vi. Manufacturers' warranties; and
- vii. Major equipment vendors.
- viii. Technical Particulars and Guarantees
- ix. Type Test Certificates of Major equipment outlined in the Technical Specifications
- x. ISO 9000 (latest) certificates of Major equipment manufacturers
- xi. Manufacturer's Guarantees that they have an established department that will serve the Ceylon Electricity Board in supply of spares for at least 10 years for all main equipment.
- xii. List of recommended spare parts and tools
- xiii. Departures from the specifications
- xiv. Method Statements

8. CEB Grid Code and Guide for Grid Interconnection of Embedded Generators

Technical Proposal shall comply with the CEB Grid Code and Guide for Grid Interconnection of Embedded Generators. Refer Schedule 5 of Volume VII for web link of above Guides.

9. Interconnection Plan

The Project Proponent shall be responsible for the construction, installation, commissioning and completion of the Interconnection Facilities in accordance with the PPA.

10. Project Milestones Schedule

The Project Proponent shall provide the Project Milestone Schedule as described in Section C of Volume II. The Transmission Facility shall be completed within twenty-four (24) months from the date of signing the Project Agreements.

11. Technical Data

The Project Proponent shall provide the technical data as described in Section D of Volume II and as per Schedule 5 of Volume VII.

12. Organisational and Staffing Plan

The Project Proponent shall submit a plan setting out its proposed organisational arrangements. The Project Proponent's plan will describe the Project Company's proposals with respect to, amongst others:

- i. The organisational structure of the Project Company;
- ii. The staffing policies and personnel deployments for construction and administration of the Transmission Facility.

13. Total Quality Management Plan

The Project Proponent shall describe the Project Company's Quality Assurance Plan. The Quality Assurance Plan shall meet the requirements of ISO 9001:2000 and cover all activities as required to comply with the Project Company's obligations under the Project Agreements.

14. Minimum and Maximum Monthly Output

The Project Proponent shall the tables in Section D1.2 of Volume II.

15. List of Investigations and Studies

The Project Proponent shall provide a full list of Investigations and Studies required for the Project, including (but not limited to):

- Boundary and Topographical Survey
- Flood Study
- Geotechnical Study
- Grid Impact Study
- Protection Study

The Project Proponent shall complete the relevant table in Section D1.4 of Volume II.

16. Permits and Consents

The Project Proponent shall provide a list of all known Permits and Consents required, by completing the relevant table in Section D1.5 of Volume II.

17. Generation Model Report

The Bidder shall provide their generation model report as per Section D1.6 of Volume II.

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FINANCIAL PROPOSAL – SOLAR PARK FACILITY AND TRANSMISSION FACILITY

The Financial Proposal Solar Park Facility and Transmission Facility shall be prepared in accordance with the below provisions:

1. Cover and Title Page

The Financial Proposal cover page should state the name of the Project, the Project Proponent’s company name, the date of the Financial Proposal, the person responsible for preparing the Financial Proposal and all co-developers currently participating in the Project. The words “Financial Proposal – Solar Park Facility & Transmission Facility”, “ORIGINAL” and “COPY” should be indicated on the page as appropriate.

2. Financial Proposal Letter

Financial Proposal letter shall be submitted in accordance with the Section G, Part II of Volume II

3. Proposed Bid Tariff for Solar Park

The Project Proponent shall propose a **single Tariff** in USD Cents/kWh for the entire term of twenty (20) years of the PPA (**Bid Tariff**):

Bid Tariff	Years 1-20
USD Cents/kWh (maximum 2 decimals)	X.XX

The above bid tariff shall be converted once to LKR at the time of signing of power purchase agreement utilizing the middle exchange rate published by Central Bank of Sri Lanka applicable on 7 (seven) working days prior to signing the agreement. All the monthly energy payments shall be in LKR and in accordance with the terms in the power purchase agreement.

The above one-time conversion shall be applicable upto the milestone for signing the power purchase agreement given in this RFP.

The Bid Tariff is exclusive of VAT and any excise taxes or other governmental impositions. The Project Proponent shall charge CEB for VAT or other taxes imposed on energy sales on the tariffs at the applicable rate if required by applicable Law.

In addition, the Project Proponent shall provide the information in Part II of Volume II in support of its Bid Tariff. The Project Proponent shall provide a printed copy and an electronic copy of a working financial model with the spread sheets which clearly describe the pricing proposals. The Project Proponent shall furnish the financial model with a cash flow statement for the full term of the PPA.

4. Transmission Facility Annuity Payments

The Project Proponent shall propose a **single 6 monthly fee** in USD for twenty (20) payments over the first 10 years of the PPA term (**Transmission Annuity Payment**):

Transmission Annuity Payment	Years 1-10 (20 payments)
USD (maximum 2 decimals)	XXX

The above annuity payments shall be converted once to LKR at the time of signing the contract for development of transmission facility utilizing the middle exchange rate published by Central Bank of Sri Lanka applicable on 7 (seven) working days prior to signing the agreement. All the annuity payments shall be in LKR and in accordance with the terms in the contract for development of transmission facility.

The above one-time conversion shall be applicable upto the milestone for signing the contract for development of transmission facility given in this RFP.

The Transmission Annuity Payment is exclusive of VAT and any excise taxes or other governmental impositions. The Project Proponent shall charge CEB for VAT or other taxes imposed on the Transmission Annuity Payments at the applicable rate if required by applicable Law.

In addition, the Project Proponent shall provide the information in Part II of Volume II in support of its Transmission Annuity Payment. The Project Proponent shall provide a printed copy and an electronic copy of a working financial model with the spreadsheets which clearly describe the pricing proposals.

5. Financial Model

The Project Proponent shall provide their financial model which will include, at a minimum, the following items:

- Capital costs (including breakdown for major equipment)
- Financing costs
- Equity and debt portions
- Operating costs
- NPV and IRR projections over project life
- Assumed discount rate
- Depreciation rate used
- Residual Price
- Any termination payment amounts on a quarterly basis
- other financial assumptions

SPECIFICATIONS FOR GRID INTERCONNECTION**1. General**

Solar PV Power Plant shall be connected to Siyambalanduwa Solar Collector Substation (SCS) which will be constructed under the Development of 100 MW_{AC} Solar Park Facility. Siyambalanduwa SCS will be a feeder transformer substation which will be located in the village of Siyambalanduwa in Monaragala District. Grid interconnection of the Solar Park Facility will be at the 33 kV voltage level. Siyambalanduwa Solar Collector Substation shall be constructed as per the scope of works document for the SCS. Conceptual Point of Connection (PoC) of the Solar Park Facility will be at the 33 kV side of the two (2) 33/132 kV step up transformers whereas the physical connection will be at the eight (8) 33 kV feeder bays.

Siyambalanduwa SCS will be connected to the main grid through a 132 kV double circuit transmission line extending from Monaragala Grid Substation.

Proposed SCS layout and the single line diagram are shown in drawings at Schedule II of Volume VII of RFP Document.

Utilization of the feeder bays and 33 kV distribution routing shall be subject to instructions and approval by the Employer to prevent obstructions.

The Contractor shall propose the optimum electrical connection arrangement of the Solar Park Facility using prudent industry practices subject to the specifications provided in this document.

The Bidder shall calculate and submit a report on the maximum fault contribution by the Solar Park Facility at the Siyambalanduwa SCS. Notwithstanding the specifications provided in this document, the Contractor shall ensure the adequacy of the short circuit ratings of the equipment proposed for the interconnection.

2. Grid Requirements

Solar Park Facility and their accessories shall be ensured to be capable of operating safely and reliably within the grid conditions specified as below. These requirements are mainly based on the specific grid connection requirements for interconnecting the proposed Solar Park Facility.

3. Solar PV Power Plant Control and Monitoring Capability

The Solar PV Power Plant shall be equipped with a Plant Control and Monitoring System:

- i. With permanently installed and operational disturbance monitoring facilities for key variables including each input and output, and
 - ii. Facilities for testing the control system sufficient to establish its dynamic operational characteristics
 - iii. Having the following control options:
 1. Voltage control on remote bus (e.g. targeting PoC voltage 33 kV and PCC — 132 kV)
- a. Option to include voltage droop characteristic

- b. Regulates voltage within 0.5% of its set point
 - c. Regulate voltage in a manner to support network voltages during faults
 - d. Allow the voltage set point to be continuously controllable in the range of at least 95% to 105% of normal voltage
 - e. Has limiting devices to ensure that a voltage disturbance does not cause Solar PV Power Plant to trip at the limits of its operating capability
2. Power factor control on remote bus (e.g. targeting power factor at PoC)
 3. Reactive power control on remote bus (e.g. targeting reactive flow at PoC)
- iv. With the Solar Park Facility connected to the power system, the settling times of voltage, active and reactive power measured at the targeting point, are less than 5 seconds for a 5% voltage disturbance.

Specific performance assessment tests shall be carried out to confirm the control and monitoring capability of the Solar Park Facility.

4. Voltage Variation Capability

Rated voltage at the PoC is 33 kV, whilst frequency is 50 Hz, with R-Y-B counter-clockwise phase rotation complying to the proposed grid code.

Solar Park Facility shall be capable of delivering the declared active and reactive power outputs within the voltage variations specified in Clause 1.3 of Chapter 1 of this document complying to the requirements in proposed grid code. The maximum voltage variation at the 132 kV bus at Siyambalanduwa Solar Collector Substation is +10% of the nominal voltage (not violating the 33 kV bus maximum voltage limits).

5. Frequency Variation Capability

The nominal frequency of the Sri Lankan transmission network is 50 Hz and shall be controlled within the limits of 49.5 Hz and 50.5 Hz unless abnormal conditions prevail. Under abnormal network conditions such as during faults and system disturbances, the system frequency could fall or rise beyond the normal frequency band. The Contractor shall ensure that the Solar Park Facility is capable of sustaining in continuous and uninterrupted operation during the manifestation of frequency events indicated in following table unless the rate of change of frequency is outside + 4 Hz/s for 250ms. Generating Units shall be able to disconnect from the system when frequency excursions are outside the ranges specified in the following table;

Frequency (Hz)	System Conditions
50.5 - 52.0	Emergency
49.5 - 50.5	Normal
47.0 - 49.5	Emergency

Frequency (Hz)	Duration
50.5 - 52.0	60minutes
49.5 - 50.5	Continuous
47.5 - 49.5	60 minutes
47.0 - 47.5	30 seconds

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6. Voltage Waveform Distortion

Allowed waveform distortion at PoC, shall be limited to indicative planning levels given in Table 2 of Clause 4.1.1 of IEC 61000 -3-6 (Harmonics).

Accordingly, the Contractor shall ensure that level of harmonics generated by Solar PV Power Plant and its supporting equipment at the PoC must be lower than 50% of the limits indicated in the following table. Harmonic analysis for the Solar PV Power Plant shall be conducted by the Contractor and the study reports shall be submitted to the Employer during design stage. Once the Solar PV Power Plant are connected to the system (post commissioning), the distortions shall be measured to ensure that they do not exceed the allowable limits as given in the table. The analysis shall be conducted as per TR IEC 61000.3.6:2012.

Odd harmonics Non-multiple of 3		Odd harmonics multiple of 3		Even harmonics	
Harmonic order H	Harmonic voltage %	Harmonic order H	Harmonic voltage %	Harmonic order H	Harmonic voltage %
5	6	3	5	2	2
7	5	9	1.5	4	1
11	3.5	15	0.4	6	0.5
13	3	21	0.3	8	0.5
$17 \leq h \leq 49$	$227*17/h-0.27$	$21 < h \leq 45$	0.2	$10 \leq h \leq 50$	$0.25*10/h + 0.25$
NOT The compatibility level for the total harmonic distortion is THD E = 8%					

It is the responsibility of the Contractor to conduct background harmonic measurements at least for 2 weeks as per TR IEC 61000-3-6: 2012 for the harmonic analysis. If the Contractor fails to conduct adequate background harmonic measurements, then the post commissioning harmonic measurements must be below the harmonic levels agreed in the above table.

7. Voltage Fluctuations

7.1 Flicker

The Contractor must ensure that, irrespective of the operating status of the Solar PV Power Plant, it does not contribute to the flicker at the PoC above the limits indicated in the following table.

(Allowed voltage fluctuations are limited to indicative values of planning levels given in Table 2 of Clause 4.2.1 of IEC 61000-3-7 -Voltage fluctuation).

Description	Limit
Pst	0.45
Plt	0.35

Contractor shall evaluate short term and long-term flicker contribution of the Solar PV Power Plant to the transmission network and design Solar PV Power Plant such that fluctuations do not exceed the allowed limits. Flicker analysis for the Solar PV Power Plant shall be conducted by the Contractor and study reports shall be submitted to the Employer during the design stage of the project. The Contractor shall measure and ensure that fluctuations do not exceed the allowed limits after the connection of the Solar PV Power Plant to the transmission network.

The flicker assessment procedure shall be accordance with TR IEC 61000.3.7: 2012 clause 4.2.2 “Assessment procedure for evaluation against planning levels”.

It is the responsibility of the Contractor to conduct at least 2 weeks of background flicker measurements as per TR IEC 61000-3-7: 2012 for flicker analysis. If the Contractor fails to conduct adequate background flicker measurements, then the post commissioning flicker measurements must be below the flicker levels agreed in the above table.

7.2 Rapid Voltage Fluctuation

The Contractor must ensure that, irrespective of the operating status of the Solar PV Power Plant, it does not produce rapid voltage fluctuations above the limits given in the following table. The guidelines relating to rapid voltage fluctuations are given in TR IEC 61000-3-7: 2012.

Number of changes (n)	$\Delta U/U_N$ % MV
$n \leq 4$ per day	5-6
$n \leq 2$ per hour and > 4 per day	4
$2 < n \leq 10$ per hour	3

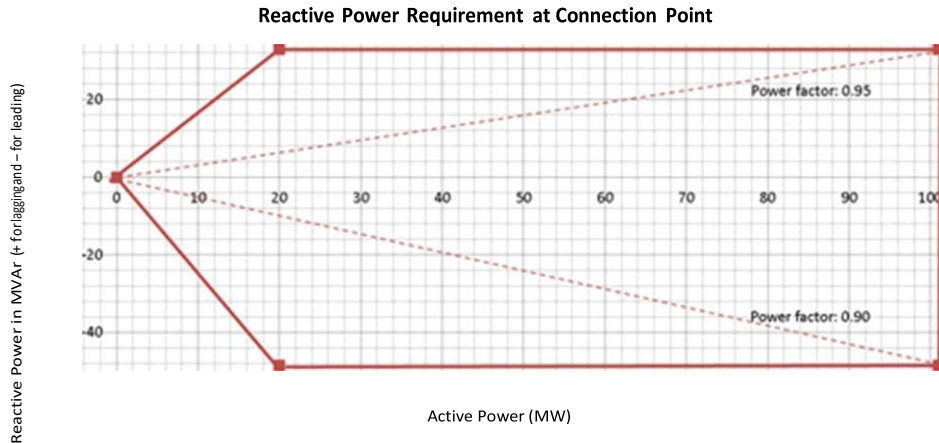
8. Unbalanced Loading Capability

Design of the Solar PV Power Plant shall enable it to remain synchronized in the Transmission network under voltage unbalance as specified in IEC 60034-1 or Clause 6.5 of IEC 61400-1, whichever is the highest.

In addition, under unbalanced fault conditions in the Transmission Network, Solar PV Power Plant shall be capable of withstanding the resulting negative sequence loading and also remain connected to the Transmission Network, until the fault is cleared.

9. Power Factor Variation/ Reactive Power Capability

The Solar PV Power Plant shall be capable of continuously delivering reactive power to the Transmission Network at the PoC as per the Solar PV Power Plant Capability Curve given below. For voltages below nominal voltage, full capability of lagging reactive power as indicated in the following chart is required. For voltages above nominal voltages, full leading reactive power as indicated in the following chart is required. The Bidder shall submit reactive power capability curves at 0.9 pu voltage as well as 1.1pu voltage.



10. Load Following Capability / Dispatchability

Solar PV Power Plant shall have the capability of providing frequency control ancillary service (i.e. load following capability). The Solar PV Power Plant shall be capable of reducing the active power output with adjustable Speed Droop settings in the range of 3% to 10%.

Solar PV Power Plant proposed by the Bidder must be controllable in terms of active power output according to the requirements of the System Operator with a view to counteracting a risk or disturbance of the system imbalance. It must then be possible to reduce the power output under any operating condition and from any working point to a target value defined by the system operator. This target value will be given by the system operator at the grid connection node and corresponds to a percentage value related to the network connection capacity. The reduction of the power output to the target value must take place with at least 10% of the network connection capacity per minute without disconnection of the plant from the network.

Allowable rate of change of active power output due to resource side variation

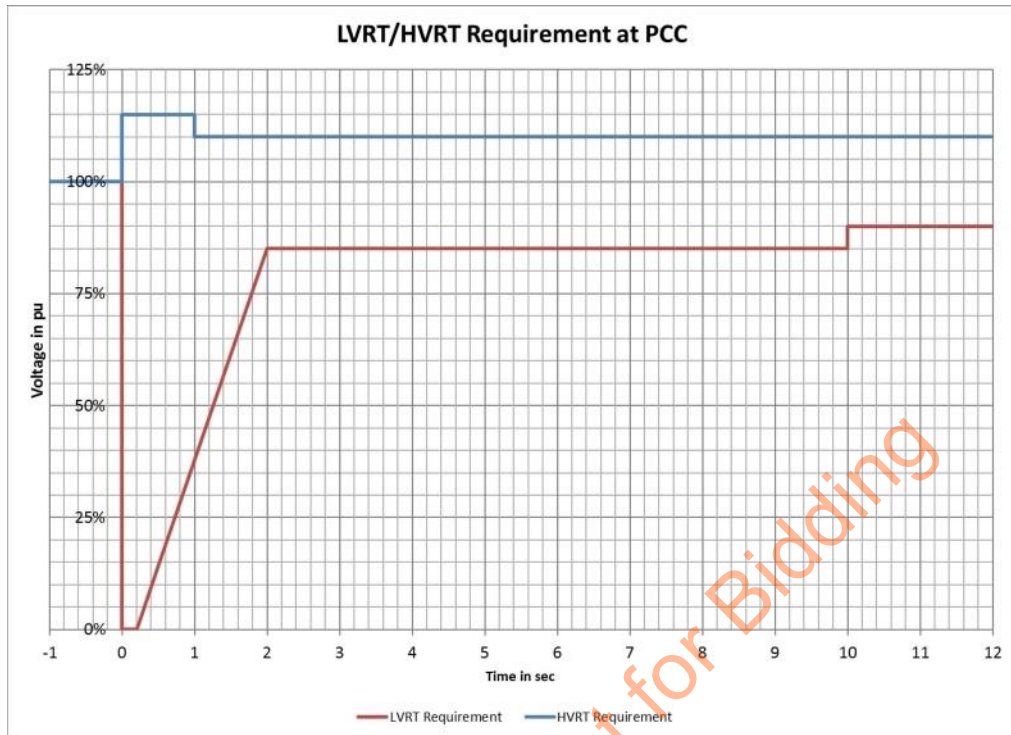
Change to active power output due to change in resource side (such as passing cloud) must not exceed the following values.

- (a) Upward – Maximum 3% per minute (3 MW per minute for 100 MW capacity)
- (b) Downward – Maximum 3% per minute (3 MW per minute for 100 MW capacity)

Facility must include a sufficient battery energy storage system or any other means to realize the above.

11. Fault Ride-through Capability

Solar PV Power Plant shall be capable of remain synchronized with the power system during and following any symmetrical or asymmetrical fault/disturbance in the Transmission Network or the Solar PV Power Plant internal network resulting in voltage dips or rises at the connection point within the following figure. Following the fault clearance, the generating unit should return to pre-fault conditions subject to its normal governor control system and automatic voltage regulator (AVR) response within pre-agreed time.



12. Current Distortion Limits

Allowed Current Distortion is limited to the current distortion limits described in clause 6, 7, 8 and 9 of IEC 61000-3-6 (Harmonics).

Measurement and evaluation and preparation of reports of the current harmonic distortion shall be carried out as per IEC 61000-3-6.

13. Emission Limits of Fluctuating Loads

Allowed emission is limited to the emission limits described in clause 6, 7, 8 and 9 of IEC 61000-3-7 (Voltage fluctuation).

Measurement and evaluation of the emissions shall be carried out as per IEC 61000-3-6. Measurement and evaluation reports shall be prepared as per IEC 61000-3-7.

14. Protection Arrangements and Fault Level Considerations

Protection schemes of the Solar PV Power Plant should be properly coordinated with the protection systems of the Transmission Network.

Solar PV Power Plant shall be provided with protection against grid disturbances/ abnormalities and against internal faults within the Solar PV Power Plant. Contractor shall obtain the Employer's approval for the protection systems employed. Relay setting calculations and the proposed system related settings shall be submitted to the Employer for approval.

Protection schemes employed in the Solar PV Power Plant shall have appropriate backup protection schemes and breaker fail schemes. The Employer will provide all necessary information including maximum and minimum fault levels, maximum clearance times, auto-reclosing or sequential switching features.

15. Equipment Standards

All equipment used up to the PoC shall conform to applicable statutory obligations and comply with the Employer's Technical Specifications and relevant IEC standards of latest editions.

16. Neutral Grounding

The Contractor shall submit a design proposal for the review of Employer ensuring that the neutral grounding of the Solar PV Power Plant is compatible with that of the Transmission Network. Any instructions provided by the Employer on this regard shall be duly incorporated in to the design.

17. Metering

Metering and associated equipment of the Solar PV Power Plant shall be supplied and installed at the PoC by the Contractor unless otherwise agreed with Employer. Meters shall comply with the standards.

It is necessary to install power quality meters, which are capable of recording 1024 samples per cycle for one (1) year, at two solar inverters (near and furthest from the grid substation) low voltage level and two 33 kV feeders to monitor post commissioning power quality.

18. Synchronizing

Solar PV Power Plant shall be capable of automatic, unattended operation unless manual overriding is enabled for local manual controlling. The Solar PV Power Plant shall be automatically synchronized to the power system through a soft start arrangement to limit the starting current. Such synchronization shall be initiated when the power system is in a healthy condition. The maximum inrush/starting current shall not exceed 1.5 times full load current.

19. Minimum Operational Short Circuit Ratio

Solar PV Power Plant manufacturers shall provide information of minimum workable short circuit ratio of the Solar PV Power Plant.

20. Technical Data and Dynamic Model Requirements

Technical and dynamic model data is required such that the Transmission Network operator can set up system study for the impact of the Solar PV Power Plant connection. Typical technical data requirements, such as:

Solar PV Power Plant

Main transformer

Solar PV Inverter

- Reactive capability
- Controls under normal conditions
- Fault Ride Through control
- Protection settings

Other major components within
the plantDynamic model

- Solar PV inverter and its control
 - PV and inverter model
 - Active and reactive power control
 - Low- and high-voltage ride through control
 - Model documentation
 - Model user guide
 - Model parameters
 - Model validation report
- Solar PV Power Plant controller
 - Active power control
 - Frequency control
 - Reactive power control
 - Power factor control
 - Voltage control
 - Model documentation
 - Model user guide
 - Model parameters
 - Model validation report
- Other major components within the Solar PV Plant
 - Component and control
 - Model user guide
 - Model parameters
 - Model validation report

Detailed Survey Map is separately attached.

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