Government of
Democratic Socialist Republic of Sri Lanka

Ministry of Power & Energy

Ceylon Electricity Board

Request for Proposal

Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis

RFP Document

Volume II of VI

Proposal Letters and Forms

Issued on: 14th March 2024
TR/RED&PM/ICB/2023/009/C
Employer: Ceylon Electricity Board

Ceylon Electricity Board
P.O. Box 540
Colombo 02.

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Introductory Notes

1. General

The Proposal to be prepared by the Project Proponent shall include the documents and Forms of Part I and Part II of this Volume II. The Project Proponent's attention is drawn to the requirements of Volume I, Instructions to Project Proponents, and in particular to the requirement that the Project Proponent shall complete the Forms and respond to the questions in the specified format and in compliance with the RFP Document. The Project Proponent shall prepare technical and financial proposal separately for Wind Farm Facility and submit as per conditions detailed in Volume I.

Where the Project Proponent comprises two or more members to a consortium, each being a properly constituted company, corporation, firm, joint venture or other entity, each member shall, where relevant and applicable, separately complete the Forms and otherwise respond to the RFP Document so that the Proposal contains the required information about each constituent member of the Project Proponent.

The Project Proponent's attention is drawn to the requirements of Volume I and to the general need to fully describe its Proposal. To the extent that information additional to that specifically requested in the Forms is required, the Project Proponent may include such information on other sheets and attach them to the Proposal.

2. Attachment to the Technical Proposal Letter

The Project Proponent's Financial Proposal will not be opened until its Technical Proposal has been evaluated. So that the responsiveness of the Financial Proposal can be confirmed as part of the Responsiveness Test, the Technical Proposal shall contain an explicit and unequivocal affirmation regarding the contents of the Financial Proposal in the form expressly sought as an attachment to the Technical Proposal letter (refer Section A of Volume II).

3. Inclusions in the Proposal

The Project Proponent's attention is drawn particularly to the provisions of Section 2.10 of Volume I, *Mandatory Proposal Requirements* and to the responsiveness requirements of the Responsiveness Test (Annex V of Volume I). Failure to satisfy the requirements of these provisions will be grounds for rejection of the Proposal as non-responsive.

Part I: Technical Proposal Forms

Section A: Proposal Letter

Proposal Letter for the Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis

To: Cabinet Appointed Negotiation Committee,

In response to the Bid No.: TR/REP&PM/ICB/2023/009/C titled "Request for Proposals for Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis" and in accordance with the Instructions to Project Proponents, the undersigned hereby proposes to Ceylon Electricity Board, an agency of the Government of the Democratic Socialist Republic of Sri Lanka (the Government), to finance, design, procure, construct, test, commission, operate and maintain a Wind power generation facility, "Wind Farm Facility" at Mannar on a Build-Own-Operate basis, in accordance with the provisions of the Project Agreements (included as part of this RFP).

The undersigned agrees that this Proposal shall remain open for acceptance and shall remain irrevocable for a period of 150 days from the Proposal Closing given in the RFP Document, and it shall remain binding upon the undersigned and may be accepted at any time before the expiration of that period. The undersigned certifies that it has examined and is fully familiar with all the provisions of the RFP Document, the Project Agreements and any addenda thereto; has carefully reviewed the accuracy of all statements in the RFP Document and attachments thereto, has carefully examined the RFP Document (including the Project Agreements) and any addenda thereto, is satisfied as to the nature and location of all the works, the general and local conditions and all other matters which can in any way affect the Project or the cost thereof, and has otherwise taken steps to inform itself as required under the RFP Document. The undersigned hereby agrees that the Government or its Representatives will not be responsible for any errors or omissions on the part of the undersigned in preparing this Proposal.

Within a period of not more than 30 calendar days commencing on the day of issuance of a notice that the undersigned has been selected to undertake the Project, the undersigned will submit a Preliminary Obligations Bond to an amount of USD 2.4 million or equivalent LKR and agrees to execute a Power Purchase Agreement, Lease Agreement and Implementation Agreement for the provision of the Wind Farm Facility to be financed, designed, constructed, tested, commissioned, operated and maintained by a project company formed by the undersigned.

The undersigned agrees to complete the Wind Farm Facility and to fulfil all conditions for it to enter commercial service on or prior to the respective date so stipulated in the Purchase Agreement.

Attached hereto and by this reference incorporated herein and made a part of this proposal are the data required under the heading "TECHNICAL PROPOSAL".

In addition to the proposal data required, the undersigned encloses the following additional information:

The undersigned also acknowledges receipt, understanding, and full consideration of the following addenda to the RFP Document into the proposal;

Addenda Nos: _____

Signature: _____

In the Capacity of: _____ (Title)

duly authorised to sign the proposal for and on behalf of:

Project Proponent: _____ (Name)

Dated: _____

Home Office: _____ (PO Box or Street No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Fax No.)

Attention: _____ (Name & capacity of authorised representative for Project Proponent)

Address in Sri Lanka (if applicable):

_____ (PO Box or Street No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Fax No.)

Attachment to: Section A- Proposal Letter

Project Proponent's Affirmation in Respect of its Financial Proposal

The Project Proponent unequivocally affirms that its Financial Proposal conforms to the requirements of the RFP and specifically meets the following conditions:

- The Bid Tariff offered for energy exported from Wind generation plant 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 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 Volume II, Section G.
- The Financial Proposal contains a memorandum from all intended subscribers of equity committing them to:
    - the full amount of the Required Equity, being no less than 20% of the Project's total capital requirements;
    - disbursement of equity in accordance with PPA requirements.
- The Financing Plan proposes a financing structure based on fixed/variable interest rates, adequate interest rate protection (hedging) and a debt service coverage ratio in all years of the Operational Period.
- The lead member of the Project Proponent shall retain at least twenty six percent [26%] of the equity capital in the Project Company and the members of the consortium shall collectively maintain not less than fifty-one percent [51%] of the equity capital of the Project Company for a minimum of [5] years from Commercial Operation Date.
- Technical and financial requirements

Signature: _____

In the Capacity of: _____(Title)

duly authorized to sign the proposal for and on behalf of:

Project Proponent: _____(Name)

Section B1: General Qualifications of the Project Proponent

(i) General Information

1. **Name of Project Proponent:** _____

(if the Project Proponent is a consortium give the Names of all the members of the consortium)

2. **Date of Submission:** _____

3. **Country of incorporation, if applicable:** _____

4. **Year or incorporation, if applicable:** _____

5. **Type of organisation of Project Proponent:** _____

(e.g. company / joint venture / partnership)

6. **Project Proponent's representatives for purposes of this Proposal:**

Authorised signatories: ***** _____

Addressee for communications: _____

7. **Project Proponent's contact address:** _____

_____

fax no: _____

telex no: _____

8. Attach

i) The consortium Agreement among the members of the consortium in the case of the Project Proponent is a consortium.

ii) Powers of attorney authorising the signatory to sign on behalf of the Project Proponent.

(ii) Legal Entities Comprising the Project Proponent

The table below shall be completed in respect of each individual legal entity comprising the Project Proponent. Information provided shall include information about the entity making up the Project Proponent, their experience and intended role in the Project.

Name Of the Member Companies Notes 1, 2, 3	**Country Of Origin/ Postal Address of the Head Office** (Including Phone & Fax No.)	**Role of the Member in This Project**	**% Equity Contribution** Note 4	**Years Of Experience & Type of Work Undertaken** Note 5	**The Name and The Designation of the Representative for the Company for this Project.**

1 The Memorandum and Articles of Association, Joint Venture Agreement, pre-bid agreement or other relevant agreement shall be attached hereto, as appropriate.

2 Attach certified copy of Board's resolution authorising its representatives to file the Proposal, if applicable

3 Brochures, leaflets, annual reports, etc. describing each member (or relevant parent/affiliates) shall be attached.

4 Attach memorandum of commitment of members to provide the required equity

5 State the main activity or business of each member (or parent/affiliate), i.e. construction, design, project management, utility operations, finance etc.

(iii) Project Proponent's Boards of Directors

1. The Project Proponent shall provide the names of the members of the Boards of Directors for each party making up the Project Proponent's group and their relevant parents and affiliates.
2. In respect of each member of the Project Proponent, a certified true copy of the Board's resolution shall be attached authorising its representatives to participate in the submission of the Proposal.

Lead Member of Project Proponent:

Name:	**Function:**
Members of the Board Chief Executive Officer	

Member No. 2:

Name:	**Function:**
Members of the Board Chief Executive Officer	

Member No. 3: (etc.)

(iv) Financial Capability of the Project Proponent

This Section shall be filled in accordance with the provisions given in the Clause 4.2 of the Volume I of this RFP Document.

Financial Situation

1. Financial Data

Consortium Partner - _____

Type of Financial Information in (currency)	**Historic Information for Previous 5 years (Amount, currency, exchange rate, USD equivalent)**				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (CA - CL)					
Most Recent Working Capital		To be obtained for most recent year and carried forward to source of financing in financial Resources; in case of a Consortium, to the corresponding consortium partner's resources.			
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Profits After Taxes (PAT)					

2. Financial Documents

The Project Proponent and its Parties shall provide copies of the financial statements for last 05 years pursuant to the Clause 4.2.1 of Volume I. The financial statements shall:

(a) reflect the financial situation of the Project Proponent or in case of a consortium, of each member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

2.1. Average Annual Turnover

Consortium Partner - _____

Annual Turnover Data			
Year	**Amount and Currency**	**Exchange rate**	**USD equivalent**
[*indicate year*]	[*insert amount and indicate currency*]	[*insert applicable exchange rate*]	[*insert amount in USD equivalent*]
Average Annual Construction Turnover *			

* Total USD equivalent for all years divided by the total number of years, in accordance with the Section 4.2.2 of Volume I, as appropriate.

2.2. Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject Contract or Contracts as indicated in Section 4.2.3 of Volume I, as appropriate.

Consortium Partner - _____

No.	Source of Financing	Amount (USD equivalent)
1	Working Capital (to be taken from Financial Data)	
2	Credit Line [a]	
3	Other Financial Resources	
	Total Available Financial Resources	

a. To be substantiated by a letter from the bank issuing the line of credit

2.3. Current Contract Commitments

Project Proponent and each member of the consortium should provide information on their current commitments on all Contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for Contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued, in accordance with Section 4.2.3 of Volume I, as appropriate.

Consortium Partner - _____

No.	Name of Contract	Employer's Contact Address, Tel, Fax	Contract Completion Date	Value of Outstanding Work [Current USD Equivalent]	Remaining Contract Period in Months	Monthly Financial Resources Requirement [USD/month)]
1						
2						
3						
4						
5						
Total Monthly Financial Requirement for Current Contract Commitments						

Section B2: Qualifications of the Project Proponent

(i) Project Proponent's Completed Wind Projects

Relevant projects completed by each member of the Project Proponent's parties (for last 15 years) to be provided in the following format:

(Certified Copies of Certificates of Final Acceptance of each project shall be attached. Use additional sheets for additional information)

Name And Address of the Client (Including Phone No.)	**Name of Project** (Note 1)	**Total Project Cost**	**Date Completed**	**Completed On Time** (Note 2)	**Short Project Description**	**Member Company Role in the Project** (Note 3)	**Value of Project Proponent's Contribution**

1. State if project failed to achieve completion or to enter commercial operation.
2. If the project did not achieve its scheduled completion date (as extended), give the period by which it was late.
3. For instance: owner, operator, contractor, supplier, lender. If more than one role, give all roles.

In the case of the Project Proponent does not have any experience in development of Wind power plant projects, provide the agreement as per the clause 4.1.1 of the Volume 1 of the RFP.

(ii) Project Proponent's On-Going Wind Projects

List of all relevant on-going projects each member of the Project Proponent or their relevant parents or affiliated companies is engaged in:

Name And Address of The Client (Including Phone No.)	**Name And Value of The Project**	**Date Of Commence -Ment**	**Short Project Description**	**Expected Date of Completion** (Note 1)	**% Completion To Date** (Note 2)	**Role Or Respon-sibility in Project**	**Value Of Member's Contri-Bution** (Note 3)

1 Give the date of completion of the phase in which the member is involved. Where this involvement spans more than one phase (e.g. development, construction, operation), give the completion dates of each phase.

2. % completion for construction involvement to be expressed in % physical completion. For involvement in project operation, describe completion on the basis of the % of the period of the operating concession completed.

3. Value of contribution to reflect consortium share or equity involvement. Value to be clarified according to role in the project (owner, lender, contractor, operator, etc.)

(iii) Turnkey Contractor's Experience

For the proposed each EPC contractor, provide the following:

1. Name and Address of the Proposed EPC Contractor(s): *
2. Years of experience:
3 Type of main business: **
4. Provide the following details of the EPC Contractor's experience.

(I) Name and Address of the Client.

(II) Name of the Project

(III) Short Description of the Project.

(IV) Dates of commencement and completion and no of years in operation

(V) Completion on Time***

(VI) Total Project Cost

(VII) % value of turnkey contractor's contribution

(VIII) Nature of financing****

* Attach Expression of Interest for the supply of the Turnkey Contractor services

** Literature/Brochures/technical magazines describing the business/facilities/organisation shall be attached

*** If the project did not achieve its scheduled completion date (as extended), give the period by which it was late. Attach authentic Certificate of Final Acceptance of each project.

**** Commercial loan, export credit, bond floatation, etc.

(iv) List of Engineers

Provide the details of Engineers in following format where Project Proponent wish to appoint for the Turnkey Contracts;

Name of the Engineer & Address	Type of Main Business	Details of Similar Projects Involved	Details of Years of Experience

(v) O&M Contractor's Experience

For the O&M contractor (or each contractor, as the case may be), provide the following:

1. Name and Address of the O & M Contractor: *
2. Number of years of experience as an O & M Contractor:
3. Provide the following details of the O&M Contractor's experience

Name And Address of the Client	Name Of Project	Short Description of Project **	Date of Commencement	Duration of the Contract

* Literature/brochures/technical magazines describing business/ Facility of the contractor shall be attached, as well as an Expression of Interest for the supply of O & M services.

** Authentic certificates of achieved performance duly issued by owners or clients of the works described above shall be attached

(vi) Civil Contractor's Experience

For the civil contractor (or, if more than one contractor is proposed, then for each contractor), provide the following:

1. Name and Address of the civil contractor: *

2. Number of years of experience as a civil contractor:

3. Provide the following details of the civil contractor's experience:

Name and Address of the Client	Name of the Project **	Short Descrip. of the Project	Role in the Project	Date Commenced	Date Completed	Completed On Time?	Total Project Contract Cost	% Value of Contract

* Literature/brochures/technical magazines describing the business/facilities/organisation of manufacturer shall be attached as well as an Expression of Interest for the supply of the civil contractor's services.

** Authentic certificates of final acceptance duly issued by owners or clients of the works described above shall be attached.

(vii) Foreign Equipment or Material Suppliers

List the non-Sri Lankan equipment or material suppliers from whom firm commitments to supply equipment and materials will be made:

NAME OF THE FIRM	EXPECTED PROCUREMENTS

(viii) Local Contractors and Suppliers

List the Sri Lankan contractors or local suppliers of equipment or materials from whom firm commitments to supply services, equipment and materials will be made:

NAME OF THE FIRM	EXPECTED PROCUREMENTS

Section C: Project Milestones Schedule

(i) Project Proponent's Project Milestone Schedule

The Project Proponent shall provide a detailed Project Milestones Schedule which supports and confirms the Project Schedule starting from execution of the Project Agreements.

The Project Proponent's detailed Project Milestones Schedule shall be a time-scaled critical path network programme that has been analysed in terms of time and resources. The Project Milestones Schedule shall clearly demonstrate the timing and sequence in which the Project Proponent intends carrying out the Project activities including financing, design, permits and approvals, procurement, construction, commissioning and operation. The Project Milestones Schedule shall provide sufficient detail to demonstrate competence in the development of projects similar to the Project, as well as a sound knowledge of procedures and prevailing conditions in Sri Lanka.

A breakdown of activities in the Project Milestones Schedule will be provided with a description of each activity that permits clear identification of the portion of the work included under the activity. The breakdown will provide the following, as appropriate:

- Breakdown of the Preliminary Obligations Period, Construction, the Operational Period into constituent activities to the extent necessary to establish a clear sequence and timing of activities from the execution of the Project Agreements through to full commercial operation;
- Activities breakdown that will clearly demarcate financing, design, procurement, erection, commissioning and operations phases;
- Scheduled start, scheduled finish and duration of each activity with critical path clearly indicating critical activities;
- The identity and duration of all external interface events, i.e. an activity which must be done before or after, as the case may be, some activity by another person.
- Any float and/or dependencies between activities,

The Project Proponent shall outline its project controls strategies and shall explain how timely remedial actions will be initiated to correct programme delays.

The Project Milestones Schedule shall be prepared in Microsoft Project format. The Project Proponent shall state other project management tools and software it proposes to use.

(ii) Milestone Dates

The Project Milestones Schedule shall indicate the dates by which the following will be achieved:

- the milestone dates listed in Table C1;
- other key dates including placement of major orders, execution of site establishment works, plant manufacture, shipping, erection and commissioning activities.

The Project Proponent shall provide milestone dates for all milestones specified in Table C1. Any item not applicable to the Project must be so marked with a brief explanation as to why it is not applicable. This list is intended not to be exhaustive but rather to include appropriate milestones to allow the Government to evaluate proposals. Project Proponent shall identify and all appropriate activities and milestones necessary for the completion of its Facility whether or not they are included in Table C1. This includes the identification and acquisition of all necessary permits.

Table C: Milestone Schedule

Milestone	Start Date	Completion Date
Financing		
Issue Project Information Memorandum		
Financial close		
Permits		
Generation license		
BOI Agreement		
Local authority permits and licenses		
Consent under the Fire Regulations		
Central Bank approval		
Engineering and Procurement		
Preliminary		
Detailed Design		
Award turnkey contract		
Solicit and award major plant subcontracts		
Solicit and award major civil subcontract		
Solicit and award O&M subcontract		
Major Plant Delivery / Erection		
Wind turbines		
Generators		
Tower structures		
33 kV collection network accessories		
Construction		
Mobilisation / Site establishment		
Foundations		
Electrical interconnection		
Commissioning		
Pre-synchronisation tests		
Demonstration tests		
Reliability tests		
Performance tests		
Pre-synchronisation tests		
Demonstration tests		
Reliability tests		
Performance tests		
Operation		
Commercial Operation date		

Section D: Technical Data for Wind Farm Facility

(i) Introduction

The total installed capacity of the power plant shall be 50 MW with maximum variation ±5 MW. The technology proposed for the project shall have a proven track record with demonstrated success in similar project conditions. The equipment offered wind turbine and associated facility shall be new and unused. The plant design and the equipment proposed shall be conformed to CEB regulations stipulated in "CEB Grid Code" herein after called "Code" and Schedule 5 – Minimum Functional Specification of Volume VI of this RFP Document. CEB has the right to decline interconnection of any equipment which is of substandard or does not conform to the Code or requirements specified in this RFP Document and the project proponent shall bear any loss incurred as a result.

The Project Proponent shall provide the following technical information with the Proposal for the proposed Project:

a. Estimation of Annual Energy Production (AEP) based on the wind turbine model and power curve proposed by the Project Proponent conforming to site wind data, land use data and roughness of the area based on WAsP®. The resource assessment shall be done for the relevant hub height of the proposed wind turbine with wind shear estimates from site wind data.

b. Wind turbine specifications and type tested power curve data (documentary proof shall be provided along with the proposal) which shall be complied with IEC 61400-1 or latest available equivalent standard.

c. The wind turbines proposed shall be capable of operating with different noise modes and the same shall be programmable and make available at the wind turbine controller and wind farm SCADA system. A comprehensive noise assessment considering all potential receptors complying to the standards IEC 61400:11, ISO9613-2 shall be carried out and provided with the proposal.

d. An Expression of Interest (EOI) from each prospective wind turbine supplier willing to supply the required number of wind turbines for the proposed project.

e. Valid full type test reports obtained from an internationally accredited testing agency shall be produced for all major equipment of the wind turbine which are stipulated below.

   i. Wind turbine generator
   ii. Drivetrain (if applicable)
   iii. Main transformer
   iv. Back-to-back converter (if applicable)
   v. Hub (including pitch control system)
   vi. Blades
   vii. Nacelle and accessories (including yaw motors)
   viii. Tower and accessories
   ix. SCADA & control system (i.e., main controller, servers, switches etc.)
   x. 33kV cables and accessories (i.e., termination kits, jointing kits etc.)
   xi. Fibre cables and accessories (i.e., splicing kits, jointing enclosures etc.)
   xii. MV and LV switchgear
   xiii. Auxiliary transformers
   xiv. Power quality meters/energy meters & instruments inside wind turbines

f. Country of origin certificates for the major equipment which are mentioned above, shall be provided.

g. Details of the wind farm controlling system, protection system and SCADA system

h. Project Proponent shall provide details of wind farm protection schemes at the time of submission of the technical proposal and be liable for adjust the relay parameters, if necessary, in compliance with the CEB requirements prior to commissioning of the power plant, grid substation and any other equipment under this project scope.

i. Detailed drawings and supplementary documents to be provided at the time of submission of Proposal, including but not limited to:

   i. Wind farm design reports

      - General specification of wind turbine model and its features
      - Wind data assessment and AEP calculation report
      - Noise assessment report for wind farm
      - General specification of power plant controller and controlling methodology
      - Wind turbine earthing system design

   ii. 33kV power collector route layout drawings including:

      - Power collector system up to the collector substation
      - Power collector system within collector substation
      - Wind farm single line diagram including substation connection configuration

   iii. Communication network layout

      - Network layout from wind turbines up to the collector substation
      - Network configuration layout within collector substation
      - Overall functional drawing/layout of termination points at the substation

   iv. SCADA & wind farm control monitoring system

      - Wind farm SCADA architecture
      - SCADA functional design document
      - Operation modes of power plant controller
      - Details of the wind forecasting system
      - SCADA panel layout in collector substation
      - Single line diagram for power supply arrangement and communication wiring of SCADA panels and associated system (i.e., videowall & control room equipment)
      - Single line diagram for CT/VT connections for wind farm controller from transformer incomers
      - Single line diagram for power supply and CT/VT connections for power quality meters/energy meters inside 33kV feeder bays in collector substation

j. Contingency plan to guarantee the reliable operations of the wind power plant

(ii) Technical Data of Wind Power Plant

No	Item	Units	Requirement	Offered
Guaranteed Plant Capacity of the Project Proponent at the Interconnection Point		MW	Shall be a value within 50 ±5	
Wind Turbine Generator				
A	**General**			
A.1	Manufacturer/Product Name			
A.2	Country of Origin			
A.3	Country/Place of Manufacture			
A.4	Year of Manufacture			
A.5	Make			
A.6	Model No.			
A.7	Type tested (valid test certificates shall be attached as supplementary information for all major wind turbine components specified under item g of Technical Scope for Wind Power Plant.		Provide full product type test certification obtained from internationally accredited agency for the offered wind turbine model	
A.8	Type test certification reference		IEC 61400-22	
A.9	Designed lifetime	Years	20	
A.10	Power curve		Provide type tested power curve	
B	**Specifications**			
B.1	Configuration		Three (03) bladed, up-wind, horizontal axis wind turbine with variable pitch and active yaw mechanism	
B.2	Wind class & turbulence index of the wind turbine as per IEC 61400-1			
B.3	Rated wind speed & survival wind speed	m/s		
B.4	Noise level at rated speed at standard air density	dB		

B.5	Noise level at 10m above tower footing at rated speed at standard air density	dB		
B.6	Nominal power rating	MW		
B.7	Wind speed at which nominal power is generated	m/s		
B.8	Hub Height	m		
B.9	Blade type	m		
B.10	Blade length	m		
B.11	Rotor + hub diameter	m		
B.12	Drivetrain manufacturer (if applicable)			
B.13	Generator manufacturer			
B.14	Generator rating & power factor	MW		
B.15	Generating voltage (nominal & maximum)	V		
B.16	Generator designed frequency	Hz		
B.17	Transformer manufacturer			
B.18	Continuous maximum rating of the transformer	MVA		
C	**Availability of Control Functions**			
C.1	Active power control		Yes	
C.2	Reactive power control		Yes	
C.3	Voltage variation capability		Yes	
C.4	Frequency variation		Yes	
C.5	Power factor variation capability		Yes	
C.6	LVRT capability		Yes	
C.7	HVRT capability		Yes	
D	**Wind Turbine Generator Protection System**			

D.1	Ground Fault Monitoring			
D.2	Grid Monitoring			
D.3	Frequency			
D.4	Voltage			
D.5	Anti-islanding			
E	**Standard Compliance**			
E.1	Applicable Standard (latest)		a) For the whole Wind Farm designs, fabrications, testing and commissioning, electrical equipment & works and mechanical equipment and works: IEC, ISO, EN, BS b) In absence of particular standard from the IEC, for areas such as resistivity measurements, earthing design or earth resistance measurements: IEEE c) For quality management system: ISO 9001 d) For Materials and testing: ASTM e) For Civil works: BS IEC AASHTO ASTM ACI Local standards for Buildings and Roads – ICTAD, SLS, RDA f) For corrosion protection of structures EN / ISO 8501-3:2006 and 12944-(1-8) g) For wind turbine towers:	

			For Materials – EN / ASTM For Welding – ANSI /AWS Painting - ISO	
G	**Supplementary Information**			
G.1	Availability of Spares			
G.2	Design & Patents (If any)			

(iii) Technical Data for Energy Meters

Item	Item Description	CEB Requirement	Offered
A.1	**General**		
A.1.1	Name of the Manufacturer		
A.1.2	Address of the Manufacturer		
A.1.3	Country of Manufacture		
A.1.4	Make		
	Model No.		
	Manufacturers Catalogue Ref. No.		
A.1.5	Type	3P4W	
A.1.6	Applicable Standards	As per clause 2.0	
A.2	**Principle Parameters**		
A.2.1	Reference voltage	110 V AC	
A.2.2	Standard Rated Current	1A	
A.2.3	Rated Maximum Current (Imax)	1.2 times of the rated current	
A.2.4	Starting Current of Meter	at 0.001 of basic current	
A.2.5	Auxiliary Supply	60-240 V AC/DC	
A.2.6	Frequency	50 Hz	
A.3	**Basic Features**		
A.3.1	Limit of errors 1. Active Energy 2. Reactive Energy	 Class 0.2S Class 2	
A.3.2	Capability of measurement in full p.f range	Accuracy in full p.f range	
A.3.3	TOD measurement	Yes	
	Minimum TOD intervals	6	
A.3.4	Demand integration period	15 min	

A.3.5	Maximum demand reset both Locally and Remotely	Yes	
A.3.6	Password Authorization Levels	Min 2 levels	
A.3.7	No. of Blinking LEDs	Min 2	
	Blinking LED analogues to 1. Active Energy consumption 2. Reactive Energy consumption	 Yes Yes	
A.3.8	Battery lifetime of calendar clock battery	Min 10 years	
A.3.9	Display Sequence	As per in Clause 3.2.8 in the Annex 1 of Schedule 7 (Volume VI)	
A.3.10	Meter Sampling rate	30s or less	
A.3.11	Memory retention period (months)	12 months	
A.3.12	Programming parameters	As per Clause 3.3.9 in the Annex 1 of Schedule 7 (Volume VI)	
A.3.13	Logging Load profile	as per Clause 3.3.9 in the Annex 1 of Schedule 7 (Volume VI)	
A.3.14	Event log	as per Clause 3.3.9 in the Annex 1 of Schedule 7 (Volume VI)	
A.3.15	Display memory type	non-volatile	
A.4	**Remote/ Local Communication**		
A.4.1	Types of communication ports available	Optical Port	
		RS 232	
		Ethernet	
A.4.2	Remote meter access via a GSM and 2G/3G/4G modem	Yes	
A.4.3	Software and manuals	As per Clause 3.3.4 in the Annex 1 of Schedule 7 (Volume VI)	

A.4.4	Meter communication 1. software name 2. version		
A.4.5	Facilities provided by remote operation		
	(a) To programme each meter	Yes	
	(b) To take the relevant meter reading individually	Yes	
	(c) To download stored data from meter	Yes	
A.4.6	Type of Modem	Dual band GSM modem (900/1800 MHz) or 2G/3G/4G modem	
A.4.7	Mounting of Modem	Built In	
A.4.8	Power Supply to the modem	Through Meter	
A.4.9	Minimum speed of the modem (kbps)		
A.4.10	Type of the Network Switch	Unmanageable	
A.4.11	Number of IP Ports and the speed	**Minimum 24 Nos.** 10/100 Mbps	
A.4.12	Download data to be stored in MS Access/SQL	Yes	
A.4.13	Tamper proof SIM card holder	Yes	
A.4.14	DLMS based communication enable	Yes	
A.4.15	APIs are provided	Yes	
A.5	**Mechanical Requirement**		
A.5.1	Protective class	Class 2 (Double Insulation)	
A.5.2	Type of meter cover and terminal cover	As per clause 3.4.1 and 3.4.3 in the Annex 1 of Schedule 7 (Volume VI)	
A.5.3	Bore Size of the terminals and number of screws provided	As per clause 3.4.2 in the Annex 1 of Schedule 7 (Volume VI)	

A.5.4	Degree of protection (IP Category)	IP 51 (minimum)	
A.5.5	No. of digits in the LCD display	Minimum 10 including three decimals	
A.5.6	Size of numbers in the LCD display	Minimum 4mm high and 4 mm width	
A.5.7	Seal-ability of meters to prevent from: • Access to adjustment or calibration devices on meter • Access to terminals of incoming current or potential wiring	Yes Yes	
A.6	**Climate Condition**		
A.6.1	Operating Temperature range	As per table 5 of IEC 62052-11 for indoor meters	
A.6.2	Conform to operate accurately under Maximum Relative Humidity of 90%	Yes	
A.7	**Electrical Requirement**		
A.7.1	Active and apparent power consumption in the voltage and current circuits of the meter at a reference voltage, frequency, temperature	not more than that stipulated in table 1 of IEC 62053-22	
A.7.2	Permissible error due to voltage variation	conform to the table 7 of IEC 62052-11	
A.7.3	Meter operation during Voltage dips and short interruptions	conform to Clause 7.1.2 of IEC 62052-11	
A.7.4	Meter operation during short time over current	as per the clause 7.2 of IEC 62053-22.	
A.7.5	Variation of error due to self – heating	not exceed the value given in IEC 62053-22	
A.7.6	Reference Temperature and Temperature coefficient		
A.7.7	Insulation Level		
	(a) Power Frequency Withstand voltage for 1 min	4 kV	

	(b) Impulse Voltage at 1.2/50 µsec	6 kV	
A.8	**Electromagnetic compatibility**		
A.8.1	meter operation conform to the clause 3.7 of this specification	Yes	
A.9	**Accuracy Requirements**		
A.9.1	Limits of error due to variation in current and influence quantities	do not exceed the limit given in IEC 62053-22 for class 0.2S	
A.9.2	Meter starting and running with no-load	conform to the clause 3.8 (a) in the Annex 1 of Schedule 7 (Volume VI)	
A.9.3	Meter constant	conform to the clause 3.8 (b) in the Annex 1 of Schedule 7 (Volume VI)	
A.10	**Marking of Meters**		
A.10.1	Making of Meters	as per clause 3.9 in the Annex 1 of Schedule 7 (Volume VI)	
A.11	**Quality Assurance**		
A.11.1	Quality Assurance conforming ISO 9001	Yes	
A.11.2	ISO/IEC 17025 accreditation for the Laboratory	Yes	

Section E: Project Proponent's Organisational, Staffing and QA Plan

1. General

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

i) The organisational structure of the Company;

ii) The staffing policies and personnel deployments to build, operate and administer the Project, and

iii) Quality management systems that would be implemented to give confidence to the Government, CEB, investors, lenders and other parties that the Wind Farm Facility will be built, operated and managed to the standards required by them.

2. Organisational Plan

In respect of each of the Preliminary Obligations Period, Construction Period and the Operational Period, the Project Proponent shall submit separate and detailed organisation charts showing its home office management organisation (off-shore), its Sri Lankan and Site organisation (in-country) and the interfaces between them. The organisation chart shall designate for each period the following:

- authorised representative(s) of the Project Company and the limits of the authorisations;
- organisational units and their responsibilities;
- key personnel, their functional responsibilities and reporting paths;
- Project Company's interface arrangements with relevant Government Agencies.

3. Staffing Plan

In respect of the Construction Period, the Project Proponent shall describe the staff that will be employed to carry out the following functions:

- project preparation and financing;
- formation and administration of procurement and construction contracts;
- project controls functions including overseeing procurement and construction activities to ensure time, quality and cost objectives are achieved.

In respect of the Operational Period, the Project Proponent shall submit an O&M staffing plan that describes the proposed management and staffing of the Project. Maintenance staffing shall be provided based on a schedule of the routine maintenance and major overhauls over the Term.

4. 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 Company's obligations under the Project Agreements.

Part II: Financial Proposal Forms

Section F: Financial Proposal Letter

Financial Proposal Letter for the Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis

To: Cabinet Appointed Negotiation Committee,

In response to the Bid No.: TR/REP&PM/ICB/2023/009/C titled "Request for Proposals for Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis" and in accordance with the Instructions to Project Proponents, the undersigned hereby proposes to Ceylon Electricity Board, an agency of the Government of the Democratic Socialist Republic of Sri Lanka (the Government), to finance, design, procure, construct, test, commission, operate and maintain a Wind power generation facility, "Wind Farm Facility" at Mannar on a Build-Own-Operate- basis, in accordance with the provisions of the Project Agreements (included as part this RFP).

Bid Tariff for Wind Farm Facility	**Years 1-20**
USD Cents/kWh (maximum 2 decimals)	

The undersigned agrees that this proposal shall remain open for acceptance and shall remain irrevocable for a period 150 days from the Closing Date given in the RFP Document, and it shall remain binding upon the undersigned and may be accepted at any time before the expiration of that period. The undersigned certifies that it has examined and is fully familiar with all the provisions of the RFP Document, the Project Agreements and any addenda thereto; has carefully reviewed the accuracy of all statements in the RFP Document and attachments thereto and, by careful examination of the RFP Document, the Project Agreements and any addenda thereto, is satisfied as to the nature and location of all the works, the general and local conditions under which the Project will be undertaken and all other matters which can in any way affect the Facility or the cost thereof. The undersigned hereby agrees that the Government or its representatives will not be responsible for any errors or omissions on the part of the undersigned in preparing this Proposal.

The Project Proponent has appointed a Financial Advisor that is experienced in advising on project financed power stations in Asia. We have made available to the financial advisor all information known to the Project Proponent that could reasonably be considered to be relevant to the Project's financing. We have furnished the financial advisor with all information that it has sought from the Project Proponent in connection with its financial advisory assignment. The Project Proponent hereby represents and warrants that all information provided to the Financial Advisor was true, complete and accurate at the time it was given.

The Financial Advisor has assisted in the development of the financing plan set out in Section J and we have not deviated from that plan.

Prior to the signing of the Project Agreements, the undersigned shall provide the CEB with a Preliminary Obligations Bond to the value of USD 2.4 million or equivalent LKR.

Attached hereto and by this reference incorporated herein and made a part of this proposal are the data required for "FINANCIAL PROPOSAL".

The undersigned also acknowledges receipt, understanding, and full consideration of the following addenda to the RFP Document:

Addenda Nos: _____

Signature: _____

In the Capacity of: _____ (Title)

duly authorised to sign proposal for and on behalf of;

Project Proponent:_____ (Name)

Date: _____

Home Office:

_____ (PO Box or Street No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Fax No.)

Attention: _____ (Name and capacity of authorised representative of Project Proponent)

Address in Sri Lanka (if applicable):

_____ (PO Box or Street No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Fax No)

[Letterhead of Financial Advisor]

Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis.

To: Cabinet Appointed Negotiation Committee

From: [Project Proponent's Financial Advisor]

In response to the Bid No.: TR/REP&PM/ICB/2023/009/C titled "Request for Proposals for Development of 50 MW Wind Farm Facility at Mannar on Build, Own and Operate (BOO) Basis" and in accordance with the Instructions to Project Proponents, the undersigned hereby proposes to Ceylon Electricity Board, an agency of the Government of the Democratic Socialist Republic of Sri Lanka (the Government), to finance, design, procure, construct, test, commission, operate and maintain a Wind power generation facility, "Wind Farm" at Mannar on a Build-Own-Operate- basis in accordance with the provisions of the Project Agreements (included as part this RFP) and in accordance with the Instructions to Project Proponents, the undersigned advises that we have been appointed by [ ] (the "Project Proponent") to provide financial advice in respect of the Project Proponent's Financial Proposal.

The undersigned certifies that we have examined and are fully familiar with all of the provisions of the RFP Document, the Project Agreements and any addenda thereto (in so far as they relate to the financing of the Project); and is satisfied as to all matters that relate to the financing of the Project (in so far as they can be reasonably known at this stage in the Project's development). The undersigned hereby acknowledges that it is aware that the Government and the CEB will be relying, inter alia, on our advice in determining whether the Project Proponent will be successful.

We are satisfied that we have had sufficient information and made sufficient enquiries to be able to assist the Project Proponent's development of a financing plan for the Project that is achievable under current market conditions. We have been assured by our client that all information it has provided was true, complete and accurate at the time it was given.

Accordingly, we endorse the financing plan contained in the Project Proponent's Financial Proposal without further reservation.

Yours Sincerely,

For and on Behalf of

[**Name of Financial Advisor]**

_____

Name of Authorised Signatory

Section G: Financial Data – Wind Farm Facility

The Project Proponent shall complete the following tables, adding additional lines where required.

Indicative Plant Capex Prices

Indicative EPC Cost Breakdown (USD)	Wind turbine generator system	
	Balance of plant (electrical)	
	SCADA system	
	Interconnection facility	
	Civil works including site development	
	Erection, installation & commissioning	
	Wind monitoring system	
	Radar based bird collision avoidance system	
	Implementation of Environmental Management Plan	
	Transport & logistic	
	Insurance	
	System design	
	Project management	
	Total EPC Cost (total of above items):	<x>

Indicative Financing & Other Costs

Financing Cost	**Total Cost (USD)**
Total Finance costs:	<Y>

Total Capital Cost of Wind Farm Facility: USD _____ < x + y> _____ *<This value to be taken to Financial Model of the Wind Farm Facility>*

Indicative Operation and Maintenance Costs (Per Annum)

Task / Item Description	Total Cost (USD)	Comments
Total O&M cost:		

Financial Model

The Project Proponent shall provide its financial model (including soft copy) for Wind Farm Facility which will include, at a minimum, the following items:

- Capital costs
- Financing costs
- Equity and debt portions
- Operating costs
- NPV and IRR projections over project life
- Assumed discount rate
- Depreciation rate used
- Lending interest rates
- Exchange rate
- Residual Price
- Any termination payment amounts on a quarterly basis
- other financial assumptions

Section H: Financing Plan

The Project Proponent shall provide a detailed project plan outlining the financing plan up until financial closure. The plan shall include at a minimum the following items;

- the project tasks and timing
- any information required to undertake these tasks
- the intended financial institutions the project proponent intends to engage
- necessary approvals and timing
- any other information potentially impacting cost and timing