

## INVITATION FOR EXPRESSIONS OF INTEREST (EOI)

### CONSTRUCTION OF 2 ×100 MW FLOATING SOLAR PHOTOVOLTAIC (PV) POWER PLANT IN THE WATER SURFACE OF SAMANALAWEWA RESERVOIR ON LEAST COST BASIS

REFERENCE NO. : TR/REP&PM/ICB/2023/008/C

#### 1. Introduction

Ceylon Electricity Board (CEB) is a body corporate established by the Act No.17 of 1969, having its head office at No. 50, Sir Chittampalam A. Gardiner Mawatha, Colombo 2, Sri Lanka.

CEB was established by GOSL for development and coordination of generation, transmission, and distribution of electrical energy in the country. The Ministry of Power and Energy is the government entity overseeing the activities of CEB.

#### 2. Scope of the Proposal

Expression of Interest (EOI) are invited from prospective project proponents for the CONSTRUCTION OF 2 ×100 MW FLOATING SOLAR PHOTOVOLTAIC (PV) POWER PLANT IN THE WATER SURFACE OF SAMANALAWEWA RESERVOIR ON LEAST COST BASIS. It is envisaged to invite detail feasible technical proposals to supply energy separately by TWO number of 100 MW projects and to connect the power plant to the national Grid.

The primary objective of this EOI is to invite proposals from experienced and qualified firms to participate in the development of a floating solar power plant project in the water surface of Samanalawewa Reservoir. This project aims to leverage the reservoir's existing hydroelectric power generation capabilities by complementing it with daytime solar energy production.

The project's significance lies in its potential to enhance energy diversification and grid stability by introducing a clean and sustainable energy source that operates during daylight hours. It further emphasizes the efficient utilization of the Samanalawewa Reservoir, allowing it to serve as a dual-purpose energy resource—sustaining hydroelectric power generation during peak hours while harnessing solar energy to meet daytime energy demands.

By inviting expressions of interest, we seek to foster collaboration with reputable firms that share our vision of environmental sustainability, energy innovation, and community engagement. Together, we aim to contribute to Sri Lanka's energy transition, reduce carbon emissions, and ensure a reliable and eco-friendly energy supply for the region.

This project represents a pioneering effort that embraces the nexus between renewable energy and responsible water resource management. It signifies our commitment to a sustainable energy future, benefiting the environment, the local community, and the nation as a whole.

The proposal shall consist of the power plant with grid substation and grid interconnection (Construction of 220 kV Transmission Line and system modifications etc..). The basic technical specifications of the power plant such as capacity, technology and grid interconnection, etc. shall be specified by the project proponent. CEB will facilitate the technical inspection on the request of project proponent. A tentative grid connection arrangement for 2x100 MW solar PV plant is attached as Annex I.

The envisaged contract period will be for 20 years and expected to connect to the system within two years from the award. .

One project proponent can submit two separate project proposals each with 100 MW capacity.

Based on the final outcome of evaluation as per Section 8, CEB intends to short list the least cost, technically feasible project proposals and invite detailed project proposals from the respective project proponents for a restricted competitive bidding process. Substantially responsive least cost project will be selected and finally, CEB will sign Power Purchase Agreement (PPA) with this project proponent.

### **3. The Responsibilities of the Project Proponent**

The project proponent shall have sole responsibility for the design, construction, commissioning, operation, and maintenance of the floating solar power plant in the water surface of Samanalaweva Reservoir. This includes all activities related to the power plant's infrastructure, equipment, and facilities. Additionally, the project proponent shall be responsible for the supply and management of all equipment specific to the floating solar power plant, including photovoltaic panels, floating platform structures, mooring systems, inverters, and associated electrical systems.

The project proponent is also responsible for ensuring a continuous supply of solar energy through optimal orientation and maintenance of the photovoltaic panels. This entails routine cleaning, repair, and replacement of solar panels as needed to maximize energy generation. Furthermore, the project proponent is accountable for the management of any liquid waste generated during the operation of the floating solar power plant, ensuring compliance with all environmental regulations. The project proponent shall also develop and implement environmental impact mitigatory measures to safeguard the Samanalaweva Reservoir's ecosystem.

In addition to the solar power generation infrastructure, the project proponent shall provide and maintain step-up transformers, switchgear, control and protection systems specifically related to the floating solar power plant, as well as transmission facilities up to the interconnection point.

The project proponent will take measures to ensure that the water body is not adversely affected by the project, and any alterations necessary for the project's installation shall be the responsibility of the proponent, following the guidelines and regulations stipulated by relevant authorities.

Further, the reservoir faces seepage issues arising from vulnerabilities in its banks and riverbed, necessitating recurrent wet blanketing procedures, which involve boat operations for inspections, and future plans to lower water levels in 2025 for leak remediation, highlighting the importance of the Floating Solar System's capacity to withstand complete reservoir drawdown.

The project proponent is also responsible for the grid interconnection including system modification of both Hambantota and Polpitiya substations and construction of 220 kV Transmission line (This interconnection proposal shall be ready to shift the location of the proposed land, based on the overall plant design and grid substation) to evacuate power from the proposed solar PV plant in the surface of Samanalaweva reservoir for which the costs of such facility development will be paid to the project proponent through semi-annuity basis for 10 years. The construction of transmission line, system modifications and the construction of plant Grid substation shall be according to the CEB grid code and Technical specifications. CEB will supply and install the standard metering equipment at the project proponent's cost. The metering equipment are allowed to install only at the respective CEB grid substations.

The project proponent shall obtain and remain in compliance with all governmental and other approvals, licenses, permits, and certificates necessary for the construction and operation of the power plant; specifically, conducting Environmental Impact Assessment (EIA) or Initial Environmental Examination (IEE) as applicable in terms of the National Environmental (Amended) Act, No. 47 of 1980 and any amendments thereto, and such other relevant acts and provincial statutes.

#### 4. The Proposal

The proposal shall comprise of two envelopes, submitted simultaneously, one called 'Technical Proposal' and other called 'Price Proposal' and both envelopes enclosed together in an outer single envelop. Project proponents shall submit their proposal separately marked as 'Technical proposal' and 'Price Proposal' in hard copies for each two of the 100 MW packages, i.e. 'The Original' and 'The Copy' as follows;

- i) The Original : one original each from the 'Technical Proposal' and 'Price Proposal' (each envelop clearly marked as 'Original'); and
- ii) The Copy : one copy each from the 'Technical Proposal' and 'Price Proposal' (each envelop clearly marked as 'Copy');

#### Envelop 1 - Technical Proposal

The Technical Proposals shall include the following basic information.

1. Description of the company and its current business, experience in setting up of plants of similar nature and capacity in the past;
2. Creditworthiness / profitability of the company (provide details of yearly turnover and profit for the last 3 years with supporting documents);
3.
  - (a) Layout and geographic location in the tank, modality of mover & anchorage and level shifting mechanisms up to drawdown level, power evacuation modality including interconnection, inverter placement, and string arrangement, operation & maintenance process and etc..
  - (b) Conceptual design and Schematic/Layout diagram of plant, size and specifications of units, details of effluent management. logistics and etc..
4. Details of grid interconnection (according to annex 1), Power plant Grid substation, existing GS modifications for the purpose of power evacuation.
5. Proof of availability of project proponents' equity.
6. Action plan for project implementation, time schedule, etc.
7. Anticipated social and environmental impacts to the water and the area
8. Economic/financial viability of the proposed project.
9. Durability of the total plant and future operation & maintenance suitability.

Please use the following format along with the submission of detailed requirement and information

<b>A</b>	<b>General Information</b>	
A1	Name of the Project/Power Plant	
A2	Project/Plant Location	
A3	Name & Designation of the Applicant	
A4	Mailing Address	
	Telephone, Fax and Email	
<b>B</b>	<b>Details of the Proposed Power Generation</b>	
B1	Installed Capacity of Plant (MW)	
B2	Guaranteed Energy output / day (MWh)	
B3	Availability (Average hours per day)	
B4	Interconnection Point	
B5	Interconnection Voltage (33kV, 132kV, 220kV)	

B6	Transmission facility requirements (length of transmission line, required switchgears, etc.)	
B7	Time taken to achieve full load after synchronization	
B8	Expected number of days for commercial operation since signing of contract	
<b>C</b>	<b>Indicative Breakup of the Project Cost</b>	
C1	Cost of the proposed Plant	
C2	Cost of the interconnection	
C3	Means of Finance	
C4	Equity	
C5	Term Loan	
C6	Any other source	
<b>D</b>	<b>Any Other Relevant Information</b>	

## **Envelop 2 - Financial proposal**

E1	Expected financial proposal with indicative prices and breakup (energy cost, cost for transmission line and GS modification)	
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## **5. Closing Date and Time**

The deadline for the submission of proposals is December 13, 2023 at 10:00 Hrs. Proposals received after this time shall not be accepted, regardless of the reasons for late submission, including circumstances outside the control of the project proponent.

## **6. Request for Clarification & Facilitate Technical Inspection**

Project Proponents desiring any explanations or clarifications regarding this EOI may submit their written requests by facsimile, e-mail or by registered post to:

C/O, Deputy General Manager (REP&PM)  
Ceylon Electricity Board,  
No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,  
Colombo 00500, Sri Lanka.  
Fax: +94 11 2583344  
E mail: kamal.perera@ceb.lk

Such requests shall be received no later than five working Days (excluding Saturday, Sunday and Public holidays) before the deadline for submitting Proposals. Replies to such clarification requests will be made available by CEB through email within four working days.

## **7. The Place of Submission of Proposals**

The proposal shall be delivered to the following address on or before the closing time specified in Section 5 above. The '**Reference No.**' and the '**Title of the EOI**' shall be clearly marked at the top-left hand corner of each envelope. Proposals can be sent by registered post, courier or submitted in person.

Chairman (CEB)  
C/O, Deputy General Manager (REP&PM)  
Ceylon Electricity Board,  
No. 6-1/2, 1st Floor, Kalinga Place, Off Suleiman Avenue,  
Colombo 00500, Sri Lanka.  
Fax: +94 11 2583344

## **8. Evaluation of the Proposals**

The primary objective of this EOI is to invite proposals from experienced and qualified firms to participate in the development of a floating solar power plant project at the Samanalawewa Reservoir. This project aims to leverage the reservoir's existing hydroelectric power generation capabilities by complementing it with daytime solar energy production.

### **8.1 Evaluation of the Technical Proposal.**

The technical proposals will be evaluated and short listed based on the following criteria.

1. Project proponent's past experience in similar projects
2. Financial strength of the project proponent
3. Financial and technical capability of project proponent to deliver continuous and reliable power supply.
4. The time taken for implementation of the power plant and grid interconnection line
5. CEB may invite further clarifications if required.
6. Based on this evaluation, CEB intends to short list technically feasible project proposals.

At the end of the evaluation of the technical proposal, CEB will invite the project proponents who have been short listed as having submitted technically feasible project proposals and have been determined as qualified to attend opening of the price proposal.

### **8.2 Evaluation of the Price Proposal**

All proposals, which have been short listed as having passed the technical evaluation, will be proceeded to the second stage of evaluation of the financial proposal subsequent to RFP. The following will be considered at the price evaluation.

1. The total cost of delivering an energy unit by the power plant.
2. The cost of construction of grid interconnection

Based on the final outcome of this evaluation, technically feasible project proposals with lowest Net Present Value of unit costs and competitive costs given for grid interconnection will be short listed. Subsequently, those short-listed project proponents will be invited to submit a detailed project proposal by calling RFP for a restricted competitive bidding process. Finally, CEB will sign Power Purchase Agreement (PPA) with project proponent who will be selected through the RFP process.

Chairman  
Ceylon Electricity Board.