



BIDDING DOCUMENT

PROCUREMENT OF GOODS UNDER THE NATIONAL COMPETITIVE BIDDING

Invitation for Bid for

Supply, Installation, Commissioning, and Testing Sub-Surface Drip Irrigation System for an Experimental Site of Coconut

CRI/2026/NCB/85

Duplicate



Coconut Research Institute of Sri Lanka

Issued to: -

Receipt Number

Date:

Signature of Issuing Officer

Section II

Bidding Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

ITB Clause Reference	A. General
ITB 1.1	The Purchaser is: Coconut Research Institute of Sri Lanka
ITB 1.1	The name and identification number of the Contract are: CRI/2026/NCB/85 Invitation for bid for Supply, installation, commissioning, and testing Sub-Surface Drip Irrigation System for an Experimental Site of Coconut. The work consists of the following four components named as lots, which together form one complete and functional micro-irrigation system for the experimental coconut site as follows: Lot one: Solar-Powered Submersible Water Pump System Lot two: HDPE-Lined Irrigation Storage Pond Lot three: Hybrid (Solar & AC) Powered Surface-Mounted Water Pump System Lot four: Sub-Surface Drip Irrigation System All four lots are interrelated and shall be provided under one contract. The bidder shall quote for all four lots, and partial bids for individual lots shall not be accepted. The successful bidder shall be responsible for the supply, installation, testing and commissioning of all four lots as one complete and operational sub-surface micro-irrigation system.
	Contract Period: 30 Days
ITB 2.1	The source of funding is: Consolidated fund
ITB 4.4¹	Foreign bidders <i>are allowed to participate in bidding. Allowed through local agents</i>
	B. Contents of Bidding Documents

ITB 7.1	For <u>Clarification of bid purposes</u> only, the Purchaser's address is: Attention: The Director Address: Coconut Research Institute of Sri Lanka, Bandirippuwa Estate, Lunuwila 61150, Sri Lanka Telephone: 94 (0)31-2255300 Fax number: 94 (0)31-2257391 Electronic mail address: director@cri.gov.lk
	A pre-bid meeting shall be taken place at the following date, time and place: At 11.00 a.m. on 12.10.2026 at Rathmalagara Research Centre, Madampe (NW)
	C. Preparation of Bids
ITB 11.1	<u>The bidder should submit the following additional documents:</u> 1. <u>Last 3 years' experience</u> in Supply, installation, commissioning, and testing Sub-Surface Drip Irrigation System with names of institution, division, contact person and telephone numbers should be provided. (Providing wrong/unnecessary information may be a reason for the rejection of the bid)
	Bid document should be arranged in the following order by the Supplier. a. Copy of Certificate of Incorporation b. Bid submission form c. Bid Security d. Duly completed Technical Specifications e. Duly completed Price schedule <i>**Failure to provide above information may be a reason for the rejection of the bid</i>
ITB 18.1 (b)	After sales / Maintenance service is: <i>"required"</i>
ITB 19.1 ²	The bid shall be validity until: 09.12.2026
ITB 20.2	The bid must include a "Bid Security" obtained from a commercial bank operating in Sri Lanka and approved by the Central Bank of Sri Lanka, using the form provided in Section IV of the bidding document. The amount of the Bid Security shall be: Rs. 65,000.00 <i>The validity period of the bid security shall be until 06.01.2027</i>
	D. Submission and Opening of Bids

ITB 22. 1 (a)	Completed set of bids or parcel should be sealed and submitted in duplicate separately and should be posted under registered cover or placed in the Bid box kept in the following address.
ITB 22.2 I	The inner and outer envelopes shall bear the following identification marks: Invitation for bid for “ Supply, installation, commissioning, and testing Sub-Surface Drip Irrigation System for an Experimental Site of Coconut ”
ITB 23.1	For bid submission purposes, the Purchaser’s address is: Attention: The Chairman, Departmental Procurement Committee Address: Coconut Research Institute of Sri Lanka, Bandirippuwa Estate, Lunuwila 61150, Sri Lanka The deadline for the submission of bids is: Date: 21.10.2026 Time: 01.00 p. m.
ITB 26.1	The bid opening shall take place at: Address: Head Office, Establishment Unit, Coconut Research Institute of Sri Lanka, Bandirippuwa, Lunuwila 61150, Sri Lanka Date: 21.10.2026 Time: 01.00 p. m.
	Bidder Shall quote for all the equipment, items & works
Consultant of the Contract	Dr. Chamila Perera

Section III

Evaluation and Qualification Criteria

This Section complements the Instructions to Bidders. It contains the criteria that the Purchaser uses to evaluate a bid and determine whether a Bidder has the required qualifications. No other criteria shall be used.

Evaluation criteria

The following factors and methodology will be used for evaluation:

The contract to be awarded to the lowest evaluated responsive bid

Bids with following deviations shall be considered as non-responsive in the evaluation

1. Bids which do not quote for all four lots
2. non-submission of bid security
3. insufficient bid security
4. failure to provide sufficient validity period of the bid
5. unsigned bid or not signed by an authorized person/s
6. eligibility requirements
7. failure to bid on specified documents
8. departure from technical specifications of critical nature
9. conditional Bids, that is, subject to prior sale, availability of components in the market
10. unacceptable technical features
11. bids which do not responsive to critical, technical or commercial requirements in the bidding documents

Post Qualification Criteria

1. The Bidder shall have a minimum of three (03) years of proven experience in the design, supply, installation, testing and commissioning of sub-surface micro-irrigation systems for coconut plantations.
2. The Bidder shall have successfully completed and commissioned a minimum of three (03) sub-surface micro-irrigation systems in coconut plantations, each of which shall have been in operation for a minimum period of three (03) years as of the bid submission deadline.
3. The Bidder shall submit details of at least three (03) such completed installations, including:
 - Name and location of the plantation/institution
 - Name and contact details of the client
 - Year of installation and commissioning
 - Duration of operation

TECHNICAL SPECIFICATIONS, PRICE SCHEDULE

FOR

SUPPLY, INSTALLATION, COMMISSIONING AND TESTING A SUB-SURFACE DRIP IRRIGATION SYSTEM FOR AN EXPERIMENTAL SITE OF COCONUT

TECHNICAL SPECIFICATIONS

Supply, installation, commissioning, and testing Sub-Surface Drip Irrigation System for an Experimental Site of Coconut

The work consists of the following four components named as lots, which together form one complete and functional micro-irrigation system for the experimental coconut site as follows:

- Lot one: Solar-Powered Submersible Water Pump System
- Lot two: HDPE-Lined Irrigation Storage Pond
- Lot three: Hybrid (Solar & AC) Powered Surface-Mounted Water Pump System
- Lot four: Sub-Surface Drip Irrigation System

Lot One

TECHNICAL SPECIFICATIONS REQUIRED		TECHNICAL SPECIFICATIONS OFFERED
		PLEASE FILL OUT <u>ALL THE SPACES</u> BELOW TO SPECIFY THE EQUIPMENT BEING OFFERED FOR <u>THE OFFER TO BE VALID</u>
Item	Solar powered submersible water pump systems	
Description and purpose of the item	To pump water from Tube-wells using solar power (pls. see below for details)	
Make/ brand and model of the item	Should be specified by the bidder	
	Technical Specifications:	
1.0	Scope of the work shall be as follows;	

1.1	Supply, install, commission and testing of solar powered submersible water pumps at identified location in Coconut Research Institute, Rathmalagara Estate, Madampe (NW) having a discharge rate of 5 – 5.5 cubic meters per hr at a total dynamic head of 40 m at optimum irradiation level. Submersible pump systems associated civil works at the allocated space on identified site (400 - 500Wh/ m² solar radiation on tilted surface).	
1.2	Solar PV water pumps with PV module capacity in the range of 1800Wp to 2400Wp may be installed on a suitable open well.	
1.3	Supply and installation of all other standard components to complete the system including Solar pump, Power box, AC and DC cables, Surge protection and Protection devices	
1.4	Should be completed with all necessary mounting structures for pump, Solar panels and controllers.	
1.5	Control inputs for dry running protection	
1.6	Provided necessary earthing system	
1.7	Submit a complete commissioning report on performance of solar panel using PV analyser and water discharge rate for each system	
1.8	The successful bidder should provide complete training on operation and maintenance of the entire system	
1.8	Operating Conditions: I. Average ambient temperature - 30° C II. Max. ambient temperature - 50° C III. Max. relative humidity - 95 % IV. Environmental condition - Humid tropical climate V. Withstand wind gusts - 100 km/ hr The PV array and support structure must be able to withstand wind gusts speed up to 100 km/ hr without damage.	
1.9	All wiring, enclosures, and fixtures that are mounted outdoors must be resist to high humidity, corrosion, insect and dust intrusion. Use of corrosion resistance terminals is required. Protection of the electronic circuit boards from corrosion by potting or applying a conformal coating is recommended.	
2.0	Specifications for pump	
2.1	1. Pump should be suitable for vertical installation and horizontal installation. 2. Efficiency - Overall Efficiency should not be less than 60% @ operating point. 3. Motor & Volute Casing and rotor - Should be made out of AISI 304 cast Stainless Steel iron with smooth inner surface, solid stainless-steel rotor. 4. Pump & Impeller - Multistage Well balanced high efficiency impellers capable to pump raw water & should be made out of AISI 304Stainless Steel iron. 5. Shaft Seal - Should long lasting mech. Sealed (Double shaft seal system) 6. Electric Motor - Fully tropicalized highly efficient totally enclosed water-cooled squirrel cage Brush less DC	

	electric motor having IEC (International Electro-Technical Commission) class 'F' insulation, S1 duty cycle, IP 68 Protection class. 7. Catalogues - Catalogues, HQ Curve, Efficiency Curve Should be provided, Hourly output chart should be provided with the offer with indicating Output [l/min], Energy [kWh], Irradiation [kWh/m²], Ambient temp. [°C] based on the location of Puttalam 8. Coupling System - Directly couple to the motor shaft (Closed Coupling)	
3.0	Specifications/ standards/ requirements for solar PV modules:	
3.1	1. The solar PV modules intend to use for the proposed solar PV system should be in conformity to following standards and requirements. 2. Should be made out of poly crystalline silicon cells. 3. Photo electrical conversion efficiency of Solar PV module shall be 16 % or higher. 4. Module rating to be 550 Wp or higher. 5. Rated output of module shall be within 0~ + 3 W of the declared value. 6. Shall perform in an operating environment where; solar PV panel temperature ranging between 10 °C to 85 °C and relative humidity is 95 % 7. Economic life should be more than 25 years. 8. Module fill factor shall be 0.7 or higher. 9. Modules shall be encapsulated and sealed to protect silicon cells from external environment and prevent ingress of moisture during its economic life. 10. The PV modules must be tested & approved by one of the IEC authorized test centers as per relevant and latest IEC standards. 11. The modules should comply with IEC 61215, IEC 61730, IEC 61701, IEC 62716 and IEC 62804 Electrical Protection Class II and CE guidelines or latest for safety. 12. The bidder should be an Authorized Representative to market and service of this product in Sri Lanka 13. Product warranty for the solar modules should be 12 years, and linear performance warranty should be indicated against 85 % power output in 25th year. Warranty statement from the supplier should be attached. 14. Indicate the period of the insurance cover provided against the insolvency or bankruptcy of the manufacturer in case of a claim within the said warranty period	
4.0	Identification of solar PV modules	

4.1	Solar PV modules shall be provided with RF identification label. This should include following essential information pertaining to design and manufacture of solar cells and modules; I. Name of the PV module manufacturer II. Country of the origin of solar cells III. Country of the origin of solar module IV. Date and year of manufacture of solar cells V. Date and year of solar module manufacture VI. Type or model number VII. Serial number VIII. Module I-V curve IX. Power rating X. Name of testing agency for IEC certification XI. Date and year of obtaining IEC qualifying certificate for solar PV module XII. Maximum permissible system voltage for which the module is suitable	
5.0	Pipeline and Mounting structure	
5.1	1. Piping layout and accessories ○ 2" PVC PN10 delivery line from pump to ground level of the well with bellow accessories ○ PN10 Pipe line from pump to the ground level - 50m ○ fittings - lot ○ Supporting structures - lot 2. Pump mounting structure – Pump should be hanged using SS rope. Supplier should be constructing a strong mounting structure over the well for the purpose of hanging the pump and it should be painted two coats of anticorrosive paint. 3. Drawing of the panel mounting structure should be attached.	
6.0	After sales service:	
6.1	Details of your Manufacturer: Name/ Complete Address/ Country/ EMAIL	
6.2	Supply the name, Tel./Fax number and email or postal address of your service agents in Sri Lanka	
6.3	The bid price must include the cost of delivery, installation, training and commissioning of the system at identified locations in the paddy fields.	
6.4	Contractor should bind to be obtained the after sales services for operating the system sustainably for minimum 10 years period (solving any faults, spare parts, warranty claims)	
6.5	The cost of the manual in English or the local language should be included in the bid	
7.0	Warranty:	

7.1	Bidder shall provide warranty certificate for the complete system for a period of not less than 36 months from the date of commissioning. The pump will be given to a selected farmer and he/ she should be able to claim the warranty without the intervention of the FAO. This warranty shall also include free servicing and preventive maintenance. Bidder shall specify in detail the means available to them to implement such a warranty. Other warranties are given in the table. <table><tr><th>Item</th><th>Minimum warranty period</th></tr><tr><td>1. Solar PV modules</td><td>25 years comprehensive</td></tr><tr><td>2. Motor pump sets</td><td>3 years</td></tr><tr><td>3. All other electrical equipment</td><td>3 years</td></tr><tr><td>4. Mounting structures</td><td>10 years</td></tr></table> The warranty should be covered manufacturing defects and malfunctions arising under normal use during the specified warranty period. This includes but is not limited to: • Defects in materials or workmanship. • Failure of components under prescribed operational conditions. • Repairs or replacements necessitated by faults inherent to the product.	Item	Minimum warranty period	1. Solar PV modules	25 years comprehensive	2. Motor pump sets	3 years	3. All other electrical equipment	3 years	4. Mounting structures	10 years	
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4. Mounting structures	10 years											
7.2	Product warranty for the solar modules should be 12 years, and linear performance warranty should be indicated against 85 % power output in 25th year. Warranty statement from the supplier should be attached.											
8.0	Certification											
8.1	Manufacturers Authorization letters should be produced (using the provided template under Annex 1)											
9.0	Commissioning											
9.1	The TEC will test the solar pumping system for its performance before making the final payment											
9.0	Quality and Standard											
9.1	All the equipment offered shall be brand new, quality products, latest in model/ versions & technology and currently in production and all the components shall conform to respective international quality standards. It shall be completed with standard components and accessories to perform the desired functions and conform to the given specifications.											

Technical specifications

Solar modules

(Each panel must be clearly marked indicating Manufacturer, Model Number, Serial Number, Peak Watt Rating, Peak Current, Peak Voltage, Open Circuit Voltage and Short Circuit Current after awarding the contract)

No.	Description	Required specification	Yes	No	Bidder's response
1	Make	Mention			
2	Model No.	Mention			
3	Country of origin	Mention			
4	Dimension	Appro: 2278mm x 1134mm			
5	Total area required	Appro: 20.6 sqm			
6	Weight	Appro: 27kg per panel			
7	Output cables	4mm ² or 6mm ² (PV-rated cables)			
8	Panel capacity	550 Wp or greater			
9	No. of module required	≥4			
10	Panel voltage (nominal)	48V			
11	Maximum power voltage	~41-42 V			
12	Maximum power current	~13-14 A			
13	Open circuit voltage	~49-50 V			
14	Short circuit current	~14-15 A			
15	Nominal operating cell temperature (NOCT)	~45°C ± 2°C			
16	Working temperature	0 ⁰ C to 85 ⁰ C			
17	Module efficiency	16 % or greater			
18	Cell type	Poly			
19	Junction box	Sealable and moisture resistant (IP 67)			
20	Frame	Aluminum or resist to corrosion			
21	Front glass	3.2 mm tempered high transmission glass, Low iron			
22	Product warranty	12 Years or more			
23	Linear performance	~2% in the first year. ~0.5%-0.55% per year thereafter. 80%-85% of initial power output after 25 years.			

24	Expected life time	25 Years			
25	Number of bypass diodes	Minimum 3 bypass diodes			
26	Standard (modules should be complied)	IEC 61215, IEC 61730, IEC 61701, IEC 62716, IEC 62804			
27	Protection rating	IP 67 rated			
28	Quality management	ISO 9001: 2008 or equivalent			

Solar submersible pump system

1. Any other deviation of the pump, rather than the particulars mentioned below in this schedule, should be mentioned clearly and separately.

2. If the test certificates/ compliance certificates are from accredited agencies documentary evidence shall be submitted relevant to their accreditation

No.	Description	Specification	Bidder's response
A	Controller		
1	Make	Mention	
2	Model	Mention	
3	Rated power output	$\geq 1\text{kW}$ and should be compatible with the offered pump	
4	Input voltage	$\geq 150\text{VDC}$	
5	Nominal voltage	should be compatible with the offered pump	
6	Motor current	Mention	
7	Ambient temp °C	0 - 50 °C	
B	Pump motor		
1	Rated power	$\geq 1\text{kW}$	
2	Flow rate (m ³ /h)	5 – 5.5 cubic meters per hr	
3	Head	total dynamic head of 40m	
4	Efficiency	$\geq 60\%$	
5	Running protection	dry running protection	
6	voltage	Should be specified by the bidder	
7	Motor speed (rpm)	Should be specified by the bidder	
8	Materials	Stainless steel	
9	Maintenance-free brushless	Should be Maintenance-free brushless DC	
10	Enclosure class	IP 68 or greater	
11	Borehole diameter (mm)	$\leq 100\text{mm}$	

12	Non-return valve	Should be included	
13	Motor cable	Should be available (from pump to the controller)	
D	General		
1	Pump manufacturer	Mention	
2	Country of origin	Mention	
3	Model No.	Mention	
4	Pump technology	Centrifugal pump	
5	Pump type	Submersible	
6	Protection rating	IP68	
7	DC protection	Protected against reverse polarity, Over voltage and under voltage	

Cables and mounting components

No.	Component	Bidder's response
	Cables	
1	Make – Should be specified by the bidder	
2	Country of origin– Should be specified by the bidder	
3	Standards DC Cables: IEC 62930, EN 50618, UL 4703 (for solar cables). Motor Cables: IEC 60228, IEC 60332-1, or relevant local standards for electrical cables.	
4	Application range - For solar DC cables: Outdoor use, UV-resistant, suitable for temperatures from 0°C to 85°C. - For motor cables: Flexible cables designed for continuous bending, resistant to oil, water, and chemicals.	
5	Design - Stranded copper conductor (class 5 or class 6 for flexibility). - Double insulation for DC cables: Inner insulation (XLPE), Outer sheath (UV-resistant PVC or LSZH).	

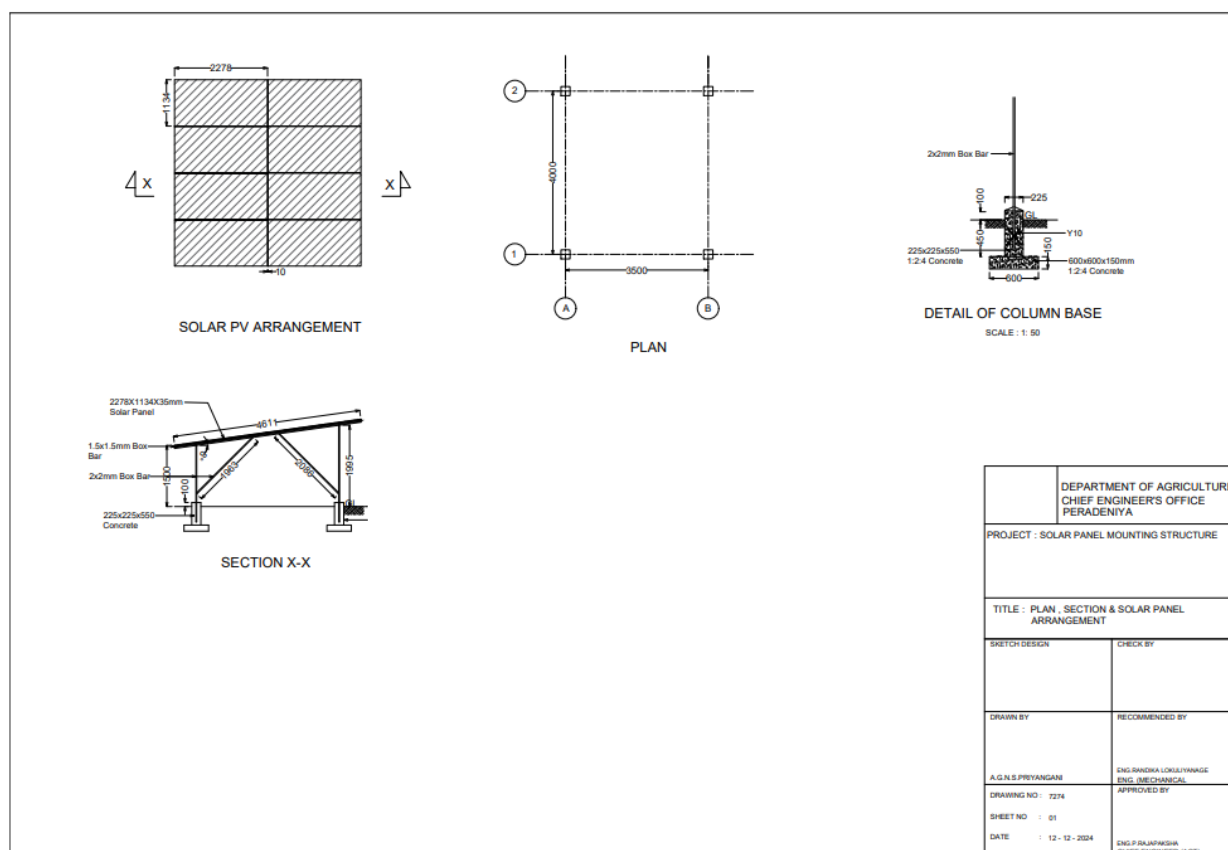
6	Product feature - Flame-retardant. - UV-resistant, water-resistant, and weather-proof for outdoor use. - High mechanical strength for durability.		
7	Minimum bending radius - DC Cables: 5x outer diameter (static); 10x outer diameter (dynamic). - Motor Cables: 6-10x outer diameter, depending on flexibility.		
8	Nominal voltage - DC Cables: Rated for at least 1500V DC. - Motor Cables: Rated for the operating voltage of the BLDC motor		
9	Temperature range 0°C to +85°C		
10	Mounting structure	Requirements	Bidder's response
i	The mounting structure for solar panels	Shall be manufactured of galvanized iron and painted with two coat of anticorrosive paint or aluminium and designed to safely carry the weight of solar panels plus dynamic loads.	
ii	Nuts & bolts	Resistance to corrosion	
iii	Other fixing components	Resistance to corrosion	
Iv	Pump hanging rope	SS304	

Annexure 01: Standards for the cables and the sensors

The cables and sensor should comply with the following standards or their equivalents.
Documentary evidence should be attached to the offer.

Component	Standard Type	Standard Name/Code	Description
Cables	Safety Standards	IEC 60364-7-712	Specifies requirements for solar PV systems, including cable selection for safe operation.
	Performance Standards	IEC 60228	Specifies the standard for conductors of insulated cables.
	Fire Resistance	IEC 60332	Sets criteria for flame retardance of cables used in solar installations.
	UV and Weather Resistance	IEC 61730-2	Includes testing for UV and environmental durability for cables.
	Environmental Standards	RoHS (Directive 2011/65/EU)	Restricts the use of hazardous substances in cables and materials.
Water Level Sensor	Accuracy and Performance	IEC 60751	Specifies requirements for resistance temperature detectors (RTDs), which may apply to liquid-level sensing.
	Safety Standards	IEC 61010-1	Safety requirements for electrical equipment used for measurement and control.
	Environmental Standards	IEC 60529	Provides IP (Ingress Protection) ratings to ensure the sensor's resistance to water and dust.
	EMC Standards	IEC 61326-1	Covers electromagnetic compatibility for measuring and control equipment.
	Material Safety	RoHS (Directive 2011/65/EU)	Ensures that hazardous substances are not present in the sensor components.

Annexure 02: Sketch of the solar Panel Mounting Structure



Estimate for Supply, Installation and commissioning of 01 No of solar powered water pumping systems (For Tube-Well)

No	Description	Qty	Amount
1	Supply of a pump as specified	01	
2	Supply of solar panels, control panel as per specification with accessories water level electrode & cables, earthing cables, earth electrode, mounting structure etc.	01 set	
4	Supply of necessary pipes, fitting and pipe support.	01 set	
5	Transporting, Installation, testing and commissioning	01 set	
	Total Cost (Without VAT)		
	VAT (18%)		
	Total Cost (With VAT)		

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Signature with company seal

Lot Two

TECHNICAL SPECIFICATION AND ESTIMATED QUANTITIES

HDPE-Lined Irrigation Storage Pond for Coconut Research Field

1. Pond Geometry

Item	Specification
Top internal dimensions	Approx. 6.7 m × 6.7 m
Bottom internal dimensions	Approx. 2.2 m × 2.2 m
Total depth	1.50 m
Normal maximum water depth	Approx. 1.20 m
Freeboard	Minimum 0.30 m
Side slopes	1V:1.5H, or flatter if required for soil stability
Usable storage	Approximately 20.5 m ³ at 1.20 m water depth (not less than 20 m ³)

2. Technical Specification

Component	Minimum specification
Earthwork	Excavate and shape the trapezoidal pond to approved dimensions. Remove roots, stones and sharp objects. Trim and compact bottom and side slopes to a smooth, firm and stable surface.
Cushioning layer	Where subgrade is rough, gravelly or stony, provide 50–100 mm compacted screened fine soil or sand beneath the geotextile.

Geotextile underlay	Non-woven needle-punched geotextile, minimum 300 g/m², rot-resistant and suitable for HDPE geomembrane protection. Adjacent 300 g/m² non-woven geotextile panels shall be overlapped by not less than 300 mm. Overlaps shall be arranged and temporarily secured as necessary to prevent separation, folding or displacement during placement of the HDPE geomembrane. On slopes, the upslope panel shall overlap the downslope panel. The completed geotextile layer shall provide continuous coverage without gaps, exposed subgrade, wrinkles or sharp projections.
HDPE liner	UV-stabilized virgin-grade HDPE geomembrane, minimum 0.75 mm thick, black, suitable for exposed agricultural water-storage ponds; resistant to UV radiation, weathering, puncture and normal irrigation-water chemicals. All seams to be thermally welded and watertight. Manufacturer's technical data/certification required.
Anchor trench	Continuous perimeter anchor trench, nominal 300 mm wide × 300–450 mm deep. Extend geotextile and liner into trench with adequate slack; backfill and compact carefully after liner installation.

Overflow provision	Provide a stabilized overflow at the maximum operating water level to safely convey excess water without overtopping or eroding the pond crest, and without allowing water beneath the liner. The overflow channel/outlet shall be protected with hand-packed rubble/stone lining over a properly prepared and compacted bed. Provide approximately 100–150 mm thick rubble lining using sound, durable stone, with individual stones generally about 100–200 mm size, tightly packed to form a stable erosion-resistant surface. Extend the rubble protection along the overflow flow path and at the outlet sufficiently to prevent scour; provide a geotextile separator/filter beneath rubble where the underlying soil is erodible. Final width and length shall suit the site and expected overflow path. Pump-related inlet/outlet arrangements are excluded.
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Surface runoff diversion drain	Construct a continuous rubble-lined interceptor/diversion drain along the upslope side(s) of the pond to prevent external storm runoff, sediment and eroded soil entering the pond or flowing beneath the liner. Recommended trapezoidal cross-section: approximately 0.30 m bottom width, 0.30 m effective flow depth plus approximately 0.15 m freeboard (total depth about 0.45 m), with side slopes approximately 1V:1H to 1V:1.5H. Provide a longitudinal gradient of about 0.5–1.0% where site levels permit. Locate the drain at least approximately 1.0 m outside the pond crest/liner anchor trench and discharge to a stable natural drain or protected outlet. Line the drain bed and both side slopes with approximately 100–150 mm thick hand-packed rubble/stone using sound, durable stone generally about 100–200 mm in size. Provide non-woven geotextile beneath the rubble where the underlying soil is erodible or migration of fines is likely. Provide additional rubble protection at bends, transitions and outlets.
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3. Estimated Main Quantities for Procurement

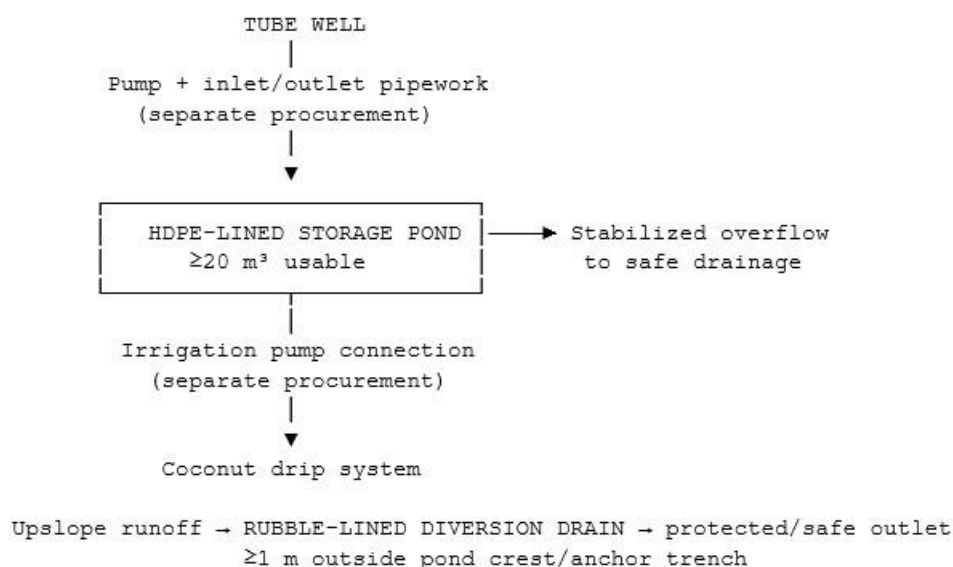
Price basis: All indicative unit rates and amounts are exclusive of VAT. VAT, where applicable, shall be added separately at the prevailing statutory rate at the time of procurement.

Preliminary quantities for quotation; verify after setting out and confirming site levels.

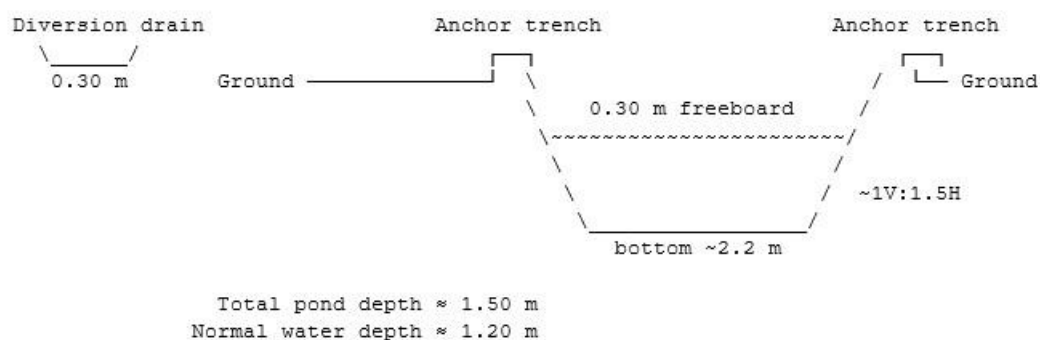
No.	Item	Unit	Est. qty.	Indicative unit rate (LKR)	Amount (LKR)
1	Pond excavation, shaping and compaction (Measure and Pay Basis)	m ³	32-35		
2	Fine soil/sand cushioning, where required	m ³	2.0		
3	300 g/m ² non-woven geotextile underlay	m ²	70		
4	0.75 mm UV-stabilized virgin HDPE geomembrane	m ²	70		
5	Thermal welding/seaming, placement and liner integrity inspection	Lot	1		
6	Anchor trench, 0.30 m wide × 0.30–0.45 m deep, including backfill/compaction (Measure and Pay Basis)	m	~27		
7	Complete rubble-lined overflow and	Lot	1		

	outlet erosion-protection works				
8	Rubble-lined runoff diversion/interceptor drain	m	20 provisional		
Total (budgetary estimate only; excluding VAT)					
VAT (18%)					
Total (budgetary estimate only; including VAT)					

5. Layout



6. Typical Cross-Section



Water → 0.75 mm HDPE liner → 300 g/m² geotextile → prepared soil/cushion

7. Installation and Acceptance

- Subgrade shall be smooth, compact and free of sharp objects before liner installation.
- Install liner with adequate slack for settlement and thermal movement.
- Thermally weld and inspect/test all field seams before filling.

- No unnecessary pipe penetrations through the geomembrane are included in this pond procurement.
- Pump inlet/outlet pipework, valves, fittings, controls and pump installation shall be separately procured.
- Fill pond gradually and check liner seating, anchorage, freeboard and overflow performance.
- Supplier shall submit technical data sheets for the HDPE geomembrane and geotextile.

8. *Warranty and Defects Liability Requirements*

The following minimum warranty and defects-liability requirements shall form part of the procurement specification and shall be clearly confirmed by the bidder/supplier in the quotation or tender submission.

Component / work	Minimum requirement	Conditions
HDPE geomembrane – material	Minimum 10 years	Manufacturer's warranty against manufacturing defects and premature deterioration under normal exposed agricultural water-storage service. Original manufacturer's warranty/certification and product technical data shall be submitted.
Geotextile – material	Manufacturer's standard warranty / minimum 5 years where available	Warranty against manufacturing defects where offered by the manufacturer. Compliance with the specified minimum 300 g/m ² and relevant technical properties is mandatory irrespective of warranty duration.
HDPE liner installation, thermal welding and seams	Minimum 2 years	Contractor/supplier warranty from date of satisfactory completion and acceptance. Leakage or failure attributable to defective installation, welding, seams or workmanship shall be repaired at no additional cost.

Earthwork, pond formation and anchor trench	Minimum 1-year defects-liability period	Covers defects attributable to inadequate construction, shaping, compaction or workmanship under normal operating conditions.
Overflow, diversion drain and erosion-protection works	Minimum 1-year defects-liability period	Covers defects attributable to construction/workmanship. Routine maintenance and damage caused by exceptional external events are excluded.
Overall workmanship	Minimum 2 years for geomembrane-related workmanship	Applies particularly to liner placement, anchoring, welding and associated installation works.

Warranty conditions: Warranty periods shall commence from the date of satisfactory completion, testing and formal acceptance of the respective work, except where a manufacturer's material warranty specifies otherwise. During the applicable warranty/defects-liability period, the contractor or supplier shall rectify, repair or replace defective materials or workmanship at no additional cost to the purchaser.

Exclusions: The warranty may exclude damage arising from misuse, deliberate or accidental mechanical damage by third parties, unauthorized modifications, fire, exceptional natural events, or failure to carry out reasonable routine maintenance. Such exclusions shall not relieve the supplier/contractor of responsibility for defects attributable to materials supplied or workmanship.

Documentation at handover: The successful supplier/contractor shall provide the HDPE geomembrane manufacturer's warranty, product technical data sheet, geotextile technical data sheet, details of liner batch/roll identification where available, and written confirmation of the applicable installation/workmanship warranty.

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Signature with company seal

Lot Three

Required specifications and other standards of the solar powered water pumping systems (For Pond).

General requirements

No.	Required specification	Bidder's response
1	Scope of the work shall be as follows;	
1.1	Supply and installation of Hybrid (solar & AC) powered Surface mounted end suction Electric water pumps having a discharge rate of 3 - 3.5 cubic meters per hr at a total dynamic head of 30 m. Pump systems associated civil works on the allocated space on the sites At (400 - 500Wh/ m ² solar irradiation on tilted surface)	
1.2	Solar PV water pumps with PV module capacity in the range of 1000 Wp to 1500 Wp+ may be installed on a suitable open well.	
1.3	Supply and installation of all other standard components to complete the system including Electric pump, Power box, AC and DC cables, Surge protection and Protection devices	
1.4	Should be completed with all necessary mounting structures for pump, Solar panels and controllers.	
1.5	Control inputs for dry running protection	
1.6	Provided necessary earthing system	
1.7	Contractor should bind to be obtained the after sales services for operating the system sustainably for minimum 10 years period (solving any faults, spare parts, warranty claims)	
1.8	The successful bidder should provide complete training on operation and maintenance of the entire system	
1.9	Operating conditions	
1.10	VI. Average ambient temperature 30° C VII. Max. ambient temperature 50° C VIII. Max. relative humidity 95 % IX. Environmental condition Humid tropical climate X. Withstand wind gusts 100 km/ hr The PV array and support structure must be able to withstand wind gusts speed up to 100 km/ hr without damage.	
1.11	All wiring, enclosures, and fixtures that are mounted outdoors must be resist to high humidity, corrosion, insect and dust intrusion. Use of corrosion resistance terminals is required. Protection of the electronic circuit boards from corrosion by potting or applying a conformal coating is recommended.	
2	Specifications for pump	
2.1	9. Electrical motor driven non-self-priming water pump capable of pumping raw water at 25°C to 30°C containing 5% suspended slit, intel and outlet size should be able to connect 2" delivery line. 10. Efficiency - Overall Efficiency should not be less than 50% @ operating point 11. Motor & Volute Casing and rotor - Should be made out of high-quality grey cast iron without blow holes and cavities. Suction and discharge	<u>9</u>

	connections should be flanged type and have an easy opening type priming port. (Water filling nipple) 12. Pump & Impeller - High effective wear resistant, long-lasting, well-balanced impeller, pump shaft and seal should be a non-corrosive, wear resistant shaft with long lasting high effective mechanical water seal. 13. Shaft Seal - Should long lasting mech. Sealed (Double shaft seal system) 14. Electric Motor – Minimum 0.75hp, Fully tropicalized high efficient totally enclosed Air cooled squirrel cage electric motor having IEC (International Electro-Technical Commission) class ‘F’ insulation, S1 duty cycle, IP 55 Protection class. 15. Catalogues - Catalogues, HQ Curve, Efficiency Curve Should be provided, Hourly output chart should be provided with the offer with indicating Output [l/min], Energy [kWh], Irradiation [kWh/m²], Ambient temp. [°C] based on the location of Puttalam 16. Coupling System - Directly couple to the motor shaft (Closed Coupling)	
3	Specifications/ standards/ requirements for solar PV modules:	
3.1	I. The solar PV modules intend to use for the proposed solar PV system should be in conformity to following standards and requirements. II. Should be made out of poly crystalline / mono crystalline silicon cells III. Photo electrical conversion efficiency of Solar PV module shall be 16 % or higher IV. Module rating to be 500 Wp or higher V. Rated output of module shall be within 0~ + 3 W of the declared value VI. Shall perform in an operating environment where; solar PV panel temperature ranging between 10 °C to 85 °C and relative humidity is 95 % VII. Economic life should be more than 25 years VIII. Module fill factor shall be 0.7 or higher IX. Modules shall be encapsulated and sealed to protect silicon cells from external environment and prevent ingress of moisture during its economic life X. The PV modules must be tested & approved by one of the IEC authorized test centers as per relevant and latest IEC standards XI. The modules should comply with IEC 61215, IEC 61730, IEC 61701, IEC 62716 and IEC 62804 Electrical Protection Class II and CE guidelines or latest for safety XII. The bidder should be an Authorized Representative to market and service of this product in Sri Lanka XIII. Product warranty for the solar modules should be 12 years, and linear performance warranty should be indicated against 85 % power output in 25th year. Warranty statement from the supplier should be attached XIV. Indicate the period of the insurance cover provided against the insolvency or bankruptcy of the manufacturer in case of a claim within the said warranty period	

4	Identification of solar PV modules											
	Solar PV modules shall be provided with RF identification label. This should include following essential information pertaining to design and manufacture of solar cells and modules; XIII. Name of the PV module manufacturer XIV. Country of the origin of solar cells XV. Country of the origin of solar module XVI. Date and year of manufacture of solar cells XVII. Date and year of solar module manufacture VIII. Type or model number XIX. Serial number XX. Module I-V curve XXI. Power rating XXII. Name of testing agency for IEC certification XIII. Date and year of obtaining IEC qualifying certificate for solar PV module XIV. Maximum permissible system voltage for which the module is suitable											
5	Warranty											
	Bidder shall provide warranty certificate for the complete system for a period of not less than 36 months from the date of commissioning. The pump will be given to a selected farmer and he/ she should be able to claim the warranty without the intervention of the FAO. This warranty shall also include free servicing and preventive maintenance. Bidder shall specify in detail the means available to them to implement such a warranty. Other warranties are given in the table. <table><tr><th>Item</th><th>Minimum warranty period</th></tr><tr><td>5. Solar PV modules</td><td>25 years comprehensive</td></tr><tr><td>6. Motor pump sets</td><td>3 years</td></tr><tr><td>7. All other electrical equipment</td><td>3 years</td></tr><tr><td>8. Mounting structures</td><td>10 years</td></tr></table>	Item	Minimum warranty period	5. Solar PV modules	25 years comprehensive	6. Motor pump sets	3 years	7. All other electrical equipment	3 years	8. Mounting structures	10 years	
Item	Minimum warranty period											
5. Solar PV modules	25 years comprehensive											
6. Motor pump sets	3 years											
7. All other electrical equipment	3 years											
8. Mounting structures	10 years											
6	Pipe line and Mounting structure											
	1. Piping layout and accessories PVC PN10 delivery line from pump to ground level of the well with bellow accessories PVC PN10 delivery line from pump to ground level – 2m PN10 Suction Pipe line from pond to the pump -5m Pressure gauge 0 - 10 bar with 0.1 intervals with fittings No's – 1 Ball cock valve - No's 1 Air Release Valve with fittings - No's 1 Fittings including connector for pump discharge to 2inch PVC delivery line - lot Supporting structures - lot 2. Pump mounting structure – Pump should be mounted on a suitable base. 3. Drawing of the panel mounting structure should be attached.											

All the equipment offered shall be brand new, quality products, latest in model/ versions & technology and currently in production and all the components shall conform to respective international quality standards. It shall be completed with standard components and accessories to perform the desired functions and conform to the given specifications.

Technical specifications

Solar modules

(Each panel must be clearly marked indicating Manufacturer, Model Number, Serial Number, Peak Watt Rating, Peak Current, Peak Voltage, Open Circuit Voltage and Short Circuit Current after awarding the contract)

No.	Description	Required specification	Yes	No	Bidder's response
1	Make	Mention			
2	Model No.	Mention			
3	Country of origin	Mention			
4	Dimension	Mention			
5	Total area required	Mention			
6	Weight	Mention			
7	Output cables	Mention			
8	Panel capacity	500 Wp or greater			
9	No. of module required	Mention			
10	Panel voltage (nominal)	Mention			
11	Maximum power voltage	Mention			
12	Maximum power current	Mention			
13	Open circuit voltage	Mention			
14	Short circuit current	Mention			
15	Nominal operating cell temperature (NOCT)	Mention			
16	Working temperature	0 ⁰ C to 85 ⁰ C			
17	Module efficiency	16 % or greater			
18	Cell type	Mono/ Poly			
19	Junction box	Sealable and moisture resistant (IP 67)			
20	Frame	Aluminum or resist to corrosion			
21	Front glass	3.2 mm tempered high transmission glass, Low iron			
22	Product warranty	12 Years or more			
23	Linear performance	%			
24	Expected life time	25 Years			
25	Number of bypass diodes	Mention			
26	Standard (modules should be complied)	IEC 61215, IEC 61730, IEC 61701, IEC 62716, IEC 62804			
27	Protection rating	IP 67 rated			
28	Quality management	ISO 9001: 2008 or equivalent			

Solar submersible pump system

1. Any other deviation of the pump, rather than the particulars mentioned below in this schedule, should be mentioned clearly and separately.
2. If the test certificates/ compliance certificates are from accredited agencies documentary evidence shall be submitted relevant to their accreditation

No.	Description	Specification	Bidder's response
A	Controller		
1	Make	Mention	
2	Model	Mention	
3	Type	Should be Solar Pump Inverter	
4	Rated power output	The inverter's rated output power must be equal to or one step larger than the pump motor's rated power.	
5	Input voltage	Mention	
6	Nominal voltage	Mention	
7	Motor current	Mention	
8	Ambient temp °C	Mention	
9	230VAC input	Should be available	
B	Pump motor		
1	Rated power	Mention	
2	Flow rate (m3 /h)	Mention	
3	Head	Mention	
4	Efficiency	Mention	
5	Running protection	Mention	
6	voltage	Mention	
7	Motor speed (rpm)	Mention	
8	Materials	Cast Iron	
9	Enclosure class	IP 67 or greater	
10	Borehole diameter (mm)	Mention	
11	Non-return valve	Mention	
12	Motor cable	Mention	
D	General		
1	Pump manufacturer	Mention	
2	Country of origin	Mention	
3	Model No.	Mention	
4	Pump technology	Mention	
5	Pump type	Mention	
6	Protection rating	Mention	
7	DC protection	Mention	

Cables and mounting components

No.	Component	Bidder's response	
	Cables		
1	Make		
2	Country of origin		
3	Standards		
4	Application range		
5	Design		
6	Product feature		
7	Minimum bending radius		
8	Nominal voltage		
9	Temperature range		
10	Mounting structure	Requirements	Bidder's response
i	The mounting structure for solar panels	shall be manufactured of galvanized iron and painted with 2 coat of Anticorrosive paint or aluminum and designed to safely carry the weight of solar panels plus dynamic loads.	
ii	Nuts & bolts	Resistance to corrosion	
iii	Other fixing components	Resistance to corrosion	
Iv	Suction pipe hanging rope	SS304	

Name of the bidder :
Signature of the bidder :
Date :
Common seal :

Drawings

These bidding documents are not included the drawings.
Bidder's line diagrams, sketches or any relevant drawings need not to scale.

Inspections and tests

The following inspections and tests shall be performed by professional specialized Engineers.

No.	Description of goods	Serial no.	Physical condition		Working condition	
			Good	Bad	Good	Bad
1	Solar modules					
2	I Pump					
3	DC cables					
.	DC protection					
.	Other protection					
.	Lightning surge protection					

.	Communication system					
.	.					
20	.					
21	.					
22	.					

Technical examination

Physical checked by : (Signature of technical person level 1)

Technically inspected by : (Signature of technical person level 2)

Certified by : (Signature of technical person level 3/Relevant Engineer)

NB

All system components are inspected and tested before and after installation.

Other Conditions of this supply are as follows:

1. The Goods supplied under this contract shall confirm to the technical specifications and standards mentioned above.
2. The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, free from defects and that they incorporate all recent improvements in design and materials.
3. The warranty shall remain valid for the period given above, after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated.

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Signature with company seal

Estimate for Supply, Installation and commissioning of 01 No of solar powered water pumping systems

No	Description	Qty
1	Supply of a pump as specified	01
2	Supply of solar panels, control panel as per specification with accessories water level electrode & cables, earthing cables, earth electrode, mounting structure etc.	01 set
4	Supply of necessary pipes, fitting and pipe support.	01 set
5	Installation, testing and commissioning	01 set
7	Total Cost (Without VAT)	
	VAT (18%)	
	Total Cost (With VAT)	

Lot Four

Specifications with estimations to supply and install a sub-surface drip irrigation system for an experimental site of coconut

Layout: Supplied as Annexure A

No.	Item description	Unit	No. of units	Unit cost (Rs.)	Total cost (Rs.)
1	<i>Head controlling (HC) unit</i>				
1.1	Six-way unit - 50 mm, PVC (6 kg/ cm ²) including 63 mm -50 mm PVC reducer, 7 no's of Steel ball cock valves with 14 No's of PVC (10 kg/ cm ²) Valve sockets, 5 PVC (10 kg/ cm ²) T connector, 10 PVC (10 kg/ cm ²) Elbows and 1" L-angle support (1 m height) and installation materials, the HC unit should be painted using 2 coat of enamel paint	No's	1		
1.2	Male adaptors (PVC + HDPE) - 2" x 63 mm	No's	2		
1.3	Male adaptors (PVC + HDPE) - 1 1/2" x 50 mm	No's	6		
1.4	Disc filters - 120 microns, 8 - 20 m ³ / hr flow rate with all the fittings to connect to the HC unit	No's	1		
1.5	Fertilizer injector - 0.4% - 4% Adjustable dosing pump (Non electric) type fertigation units with valves and all fittings to connect to the HC unit	No's	1		
1.6	Pressure gauges with all the fittings to connect to the HC unit (Glycerin filled, 0 - 10 bar)	No's	7		
1.7	Mini air release valves with all the fittings to connect to the HC unit - 1"	No's	1		
1.8	Digital water flow meter	No's	1		
2	Main lines - 63 mm, HDPE (6 kg/ cm ²), All pipelines should be fully buried below ground (500 mm BGL). The HDPE pipe shall contain not less than 80% virgin material and comply with the specified pressure class. Documentary evidence from the manufacturer or an accredited testing laboratory certifying the virgin material content and pressure class shall be submitted with the bid and for each supplied lot at the time of delivery.	m	125		

3	Sub main lines - 50 mm, HDPE (6 kg/ cm ²), All pipelines should be fully buried below ground (500 mm BGL). The HDPE pipe shall contain not less than 80% virgin material and comply with the specified pressure class. Documentary evidence from the manufacturer or an accredited testing laboratory certifying the virgin material content and pressure class shall be submitted with the bid and for each supplied lot at the time of delivery.	m	950		
4	Tee connectors - 50 mm, HDPE (PN 16), Compression type	No's	6		
5	Saddle clamps - 50 mm x 20 mm, Double sided	No's	36		
6	Double nipples - 20 mm x 20 mm, Male threaded	No's	72		
7	Ball valves - 1/2", PVC	No's	72		
8	Male adapters - 1/2" x 16 mm	No's	72		
9	Polyethylene pipe clips - 16 mm	No's	72		
10	Laterals - 16 mm, LDPE (2 - 2.5 kg/ cm ²), All pipelines should be fully buried below ground (500 mm BGL).	m	1242		
11	Tee connectors - 16 mm, HDPE (PN 16), Compression type	No's	24		
12	Barbed L connectors with 2 Pipe clips - 16 mm	No's	136		
13	Barbed tee connectors with 3 Pipe clips - 16 mm	No's	31		
14	Sub surface laterals - LDPE (2 - 2.5 kg/ cm ²) Outer diameter: Exactly 16 mm (not exceeding 16.2 mm) Wall thickness: Minimum of 1.0 mm or greater to endure burial and harsh field conditions Emitter type: Pressure-compensating inline emitters with built-in self-cleaning mechanisms to guarantee uniform discharge and minimize clogging Anti-siphon feature: Must include an anti-siphon or equivalent mechanism to block soil and dirt intrusion upon system shutdown Root intrusion prevention: Must contain a root-inhibiting mechanism or root guard Material durability: Must be UV-resistant and chemically resistant to withstand standard fertilizers and acid treatments Dripper spacing: Should be equal to or less than 20 cm Flow rate: 1 LPH – 2 LPH (emitter spacing and discharge shall provide	m	792		

	approximately 30 - 35 Lph per palm loop) Placement around palm: Positioned 1 meter away from the palm bole in a closed loop configuration (approximate length 6.3 meters) Burial depth: Buried at a depth of 20 - 40 cm to optimize root zone wetting and minimize evaporation, with line ends closed and brought above ground for inspection				
15	Sub surface lateral line ends - 16 mm	No's	136		
16	Flushing ends - 50 mm, HDPE (end should be 450 mm above the ground level)	No's	12		
17	Trenching and back filling to 500 mm depth	m	3246		
18	Concrete valve box with lid - L-600 mm x W-450 mm x H-500 mm, Wall thickness > 25 mm	No's	12		
19	Installation charges	Lot's	1		
20	Transport charges	Specify			
	<i>Sub total</i>				
	<i>18 % VAT</i>				
	<i>Grand total</i>				

Note:

- Product samples with the catalogues should be attached with the offer for each item.

**Supply, Installation, Commissioning, and Testing Sub-Surface Drip Irrigation System for an
Experimental Site of Coconut**

CRI/2026/NCB/85

PRICE SCHEDULE

01	02	03	04	05	06
Item No.	Item	Price without VAT (Rs)	VAT 18%	Total Price with VAT(Rs)	Remarks
Lot one:	Solar-Powered Submersible Water Pump System				
Lot two	HDPE-Lined Irrigation Storage Pond				
Lot three	Hybrid (Solar & AC) Powered Surface-Mounted Water Pump System				
Lot four	Sub-Surface Drip Irrigation System				
	Add 10% for Contingences				
	Grand Total with VAT				

Signature with Company seal.....

DUPPLICATE

Section VI

Contract Data

The following Contract Data shall supplement and / or amend the Conditions of Contract whenever there is a conflict, the provisions herein shall prevail over those in the CC.

CC 1.1(i)	The Purchaser is: Coconut Research Institute of Sri Lanka
CC 1.1 (m)	The Project Site: Rathmalagara Research Centre, Madampe (NW)
CC 8.1	For <u>notices</u> , the Purchaser's address shall be: Attention: The Director, Coconut Research Institute of Sri Lanka, Address: Bandirippuwa, Lunuwila 61150, Sri Lanka Telephone: +94 (31) 2255300 Facsimile number: +94 (0)31-2257391 Electronic mail address: director@cri.gov.lk
CC 12.1	Details of Shipping and other Documents to be furnished by the Supplier are. Director, Coconut Research Institute Phone: +94 (0)31-2255300 Fax: +94 (0)31-2257391
CC 15.1	CC 15.1—The method and conditions of payment to be made to the Contractor under this Contract shall be as follows: Payment for Goods and Services shall be made as follows: (i) (i) Advance Payment: Ten (10) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract and upon submission of an advance payment guarantee from a commercial bank registered under central bank of Sri Lanka for equivalent amount valid until the contract is completed and, in the form, provided in the bidding documents or another form acceptable to the Employer.
Payment Method	*Payments shall be made solely for the completion of all four lots, in accordance with the approved plans, technical specifications, and the provisions of the agreement, with system operation testing subject to obtaining the Consultants certification *Payment shall be made only for the actual quantities of work executed, measured, and certified by the Consultant , in accordance with the approved drawings, technical specifications, and the provisions of the Contract.

	*Quantities stated in the Bill of Quantities are estimated for bidding purposes only and shall not be taken as the actual or final quantities of work to be executed. The Employer reserves the right to increase or decrease any quantity of work as required during the execution of the Contract, without invalidating the Contract.
Retention	* The Employer shall retain ten percent (10%) of the amount certified in each Interim Payment Certificate as Retention Money until the total amount retained reaches ten percent (10%) of the Accepted Contract Price. * The Retention Money shall be held by the Employer as security for the Contractor's due performance of the Works and the correction of any defects occurring during the Defects Liability Period. * The entire Retention Money (10% of the Contract Price) shall be released to the Contractor upon the expiry of one (1) year from the date of the Taking-Over Certificate, provided that: 1. The Contractor has satisfactorily completed all Works in accordance with the Contract. 2. All defects identified during the Defects Liability Period have been rectified to the satisfaction of the Engineer. 3. The Contractor has fulfilled all contractual obligations, including submission of required documents, warranties, and as-built drawings. No interest shall be payable by the Employer on the Retention Money held during the retention period.
CC 17.1	Shall provide a performance security of ten percent (10% of the contract price. From any commercial bank in Sri Lanka) The performance bond will not be released to the bidder until the completion of purchase on this procurement. (Validity should be 28 days beyond the completion of the delivery)
CC 25.1	The Inspections and tests shall be according to the as given in page 40
CC 26.1	The liquidated damage shall be Rs. 3,000.00 per day
CC 26.1	The maximum amount of liquidated damages shall be: 10%