

**CEYLON PETROLEUM STORAGE TERMINALS
LIMITED**

BIDDING DOCUMENT

FOR

**SUPPLYING, INSTALLING, TESTING &
COMMISSIONING OF 40KVA UPS (NOMINAL
POWER 40KVA) SYSTEM FOR THE DATA
CENTER AT CPSTL, KOLONNAWA.**

KPR/12/2025

Employer:

Chairman
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

Engineer:

Engineering Manager
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

Issued to :

Issued by :

Date :

January 2025

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CEYLON PETROLEUM STORAGE TERMINALS LIMITED

SUPPLYING, INSTALLING, TESTING & COMMISSIONING OF UPS (NOMINAL POWER 40KVA) SYSTEM FOR THE DATA CENTER AT CPSTL, KOLONNAWA.

KPR/12/2025

BIDDING DOCUMENT

VOLUME - 01

SECTION 01 : INSTRUCTIONS TO BIDDERS
SECTION 02 : STANDARD FORMS
SECTION 03 : CONDITIONS OF CONTRACT

Employer:
Chairman
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

Engineer:
Engineering Manager
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

January 2025

SECTION 01

INSTRUCTIONS TO BIDDERS

DRAFT

INSTRUCTIONS TO BIDDERS

Instructions to Bidders applicable to this contract are that given in Section-I of the Standard Bidding Document for Procurement of Works. ICTAD Publication No. ICTAD/SBD/03, Second Edition, January 2007, published by the Construction Industry Development Authority (CIDA), “Savsiripaya”, 123, Wijerama Mawatha, Colombo 07.

Instructions to Bidders shall be read in conjunction with the Bidding Data provided under section-5 of the Bidding Document (Volume 2)

Instructions to Bidders will not be a part of the contract.

SECTION 02

STANDARD FORMS (CONTRACT)

Letter of Acceptance

Agreement

Performance Security

Retention Money Guarantee

FORM OF LETTER OF ACCEPTANCE

[LETTER HEADING PAPER OF THE PROCURING ENTITY]

----- *[date]*

To: -----
[name and address of the Contractor]

This is to notify you that your bid dated ----- *[insert date]* for the construction and remedying defects of the ----- *[name of the Contract and identification number]* for the Contract price of ----- *[name of currency]* ----- *[amount in figures and words]* as corrected in accordance with Instructions to Bidders and / or modified by a Memorandum of Understanding, is hereby accepted.

The adjudicator shall be ----- *[name and address of the Adjudicator, if agreed]* / shall be appointed by the Institute for Construction Training and Development (ICTAD).

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

The Start Date shall be: ----- *(fill the date as per Conditions of Contract).*

The amount of Performance Security is : ----- *(fill the date as per Conditions of Contract).*

The Performance Security shall be submitted on or before ----- *(fill the date as per Conditions of Contract).*

Authorized Signature : -----

Name and title of Signatory: -----

Name of Agency: -----

FORM OF AGREEMENT

This AGREEMENT made the (day)
 (month) (year) between
 (name and address of the Employer)
 (hereinafter called and referred to as the “Employer”) of the one part, and

 (name and address of the Contractor) (hereinafter called and referred to as “the Contractor”), of the other part:
 WHEREAS the Employer desires that the Contractor execute.....
 (name & identification number of Contract) (hereinafter called and referred to as “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and remedying of any defects therein.

The Employer and the Contractor agree as follows:

1. In this agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract hereinafter referred to.
2. In consideration of the payments to be made by the Employer to the Contractor as indicated in this agreement, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execute and complete the Works and remedy any defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties hereto have caused this agreement to be executed the day and year aforementioned, in accordance with laws of Sri Lanka.

.....
Authorized signature of Contractor

.....
Authorized signature of Employer

COMMON SEAL

COMMON SEAL

In the presence of:

Witnesses:

1. Name and NIC No. :
 Signature:
 Address:
2. Name and NIC No. :
 Signature:
 Address:

**FORM OF PERFORMANCE SECURITY
(UNCONDITIONAL)**

.....
(Issuing Agency's Name and Address of Issuing Branch or Office)

Beneficiary: Ceylon Petroleum Storage Terminal Limited Oil Installation Kolonnawa

Date:

PERFORMANCE GUARANTEE NO. :

We have been informed that
..... (Name of Contractor)
(hereinafter called "the Contractor") has entered into Contract No.
..... (Reference No. of the Contract) dated
..... With you, for the
..... [name of the contract and brief description of
works](Hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we
..... (name of the agency)
hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of
..... (amount in figures)
..... (amount in words) upon receipt by
us of your first demand in writing accompanied by a written statement stating that the
Contractor is in breach of its obligation(s) under the Contract, without your needing to prove
or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the day of 20.....
(insert date, 28 days beyond the intended Completion Date) and any demand for payment
under it must be received by us at this office on or before that date.

.....
Signature(s)

FORM OF RETENTION MONEY GUARANTEE

.....
(Issuing Agency’s Name and Address of Issuing Branch or Office)

Beneficiary: Ceylon Petroleum Storage Terminal Limited Oil Installation Kolonnawa

Date:

RETENTION MONEY GUARANTEE NO.:

We have been informed that
..... *(Name of Contractor)*
(hereinafter called “the Contractor”) has entered into Contract No. (Reference No. of the Contract) dated With you, for the [*name of the contract and brief description of works*] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, when the works have being taken over and the first half of the Retention Money has been certified for payment, payment of the second half of the Retention Money may be made against a Retention Money guarantee.

At the request of the Contractor, we
..... *(name of agency)* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of
.....
..... *(amount in words)* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor has not attended to the defects in accordance with the Contract.

This guarantee shall expire, at the latest day of 20..... *(insert 28 days after the end of the Defects Liability Period)* Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

.....
Signature(s)

SECTION 03
CONDITIONS OF CONTRACT

DRAFT

CONDITIONS OF CONTRACT

Conditions of Contract that will be applicable for this Contract is that given in section- 3 of the Standard Bidding Document for Procurement of Works “CIDA Publication No. ICTAD/SBD/03, Second Edition, January 2007, published by the Construction Industry Development Authority (CIDA).

Conditions of Contract shall be read in conjunction with Schedule provided under Section-5 of the Bidding Document (Volume 2).

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

SUPPLYING, INSTALLING, TESTING & COMMISSIONING OF 40KVA UPS (NOMINAL POWER 40KVA) SYSTEM FOR THE DATA CENTER AT CPSTL, KOLONNAWA. KPR/12/2025

BIDDING DOCUMENT

VOLUME - 02

INVITATION FOR BIDS

SECTION 04 :	FORM OF BID AND QUALIFICATION INFORMATION
SECTION 05 :	SCHEDULE
SECTION 06 :	SPECIFICATIONS
SECTION 07 :	BILL OF QUANTITIES
SECTION 08 :	DRAWINGS
SECTION 09 :	STANDARD FORMS (BID) CHECK LIST FOR BIDDERS

Employer:

Chairman
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

Engineer:

Engineering Manager
Ceylon Petroleum Storage Terminals Limited,
Oil Installation, Kolonnawa
Wellampitiya

January 2025

INVITATION FOR BIDS (IFB)**CEYLON PETROLEUM STORAGE TERMINALS LIMITED****SUPPLYING, INSTALLING, TESTING & COMMISSIONING OF 40KVA UPS (NOMINAL POWER 40KVA) SYSTEM FOR THE DATA CENTER AT CPSTL, KOLONNAWA.****CONTRACT NO: KPR/12/2025**

1. The Chairman, Department Procurement Committee, on behalf of the **Chairman, Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa** now invites sealed bids from eligible and qualified. Bidders for **Supplying, Installing, Testing & Commissioning of 40kVA UPS (Nominal Power 40kVA) system for the Data Center at CPSTL, Kolonnawa** as described below.

The proposed work includes supplying & installing 02 nos. UPS, as specified in specifications, scope of work bill of quantities and as directed by the Engineer. The Contract period is **90 Calendar Days** from the start date.

2. Bidding will be conducted through **National Competitive Bidding (NCB) Procedure.**
3. Public contract registration

Any person who acts as an agent or sub-agent, representative or nominee for or on behalf of a bidder, shall register himself and the contract as per Public Contracts Act. No 03 of 1987 for every public contract exceeding Five million Sri Lanka Rupees (LKR 5,000,000.00). A valid Certificate of Registration (FORM PCA 03) issued by the Registrar of Public Contracts of Sri Lanka in term of section 11 of the said Act shall be submitted along with the bid, only if the total value exceeding Five million Sri Lanka Rupees (LKR 5,000,000.00).

4. To be eligible for contract award, the successful bidder shall not have been blacklisted and shall have valid EN / IEC (International Electrotechnical Commission) registration or CIDA Registration (EM 2 or above in Electrical Installation (Low Voltage) Specialty) at the time of bid submission.
5. Qualification requirements to qualify for contract award include:

- a) Experience Required

The bidder should have completed at least 03 similar nature (Supplying, installing, termination, testing and commissioning of 02 nos. UPS 40kVA) contracts, during last 05 years.

- b) Schedule of Key Personnel

01 Technical officer – NDT (Electrical) or equivalent with more than three years experience in similar works.

6. Interested bidders may obtain further information from The **Manager (Procurement), Procurement Function, Ceylon Petroleum Storage Terminals Limited, 1 st floor, New Administration Building, Oil Installation, Kolonnawa (Telephone 011-2572156, Fax 011-2074299)** and inspect the bidding documents at the above address from 0900 hrs to 1500 hrs.
7. A complete set of Bidding Documents in English language may be purchased by interested bidders on the submission of a written application to The **Manager (Procurement), Procurement Function, Ceylon Petroleum Storage Terminals Limited, 1 st floor, New Administration Building, Oil Installation, Kolonnawa** from **03.03.2025** until **17.03.2025** during office days from 0900 hrs to 1400 hrs. on the

production of the receipt for the payment of Rs. 3,000.00 made as non-refundable fee made by cash to the CPSTL.

8. Bids shall be delivered in duplicate to **Chairman, Department Procurement Committee (DPC), C/O Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, 1 st floor, New Administration Building, Oil Installation, Kolonnawa, Wellampitiya** on or before 1400 hrs. on 18.03.2025 Late bids will be returned to the bidder without opening. Bids will be opened soon after closing in the presence of the bidders' representatives who choose to attend.
9. In case the bidders are unable to submit the original bids as above, they could submit the scanned copy of the duly filled bidding documents in PDF format via email to tenders@cpstl.lk to reach on or before 1400 hrs. on 18.03.2025, subject to following conditions.
 - i. Submission of the bid via email is at own discretion of the bidder.
 - ii. The title and the closing date of the tender shall be indicated as the subject of the email.
 - iii. Size of an email (with attachment) shall be limited to the maximum of 20 MB. In case the size of an attachment exceeds 20 MB, the bidder is requested to split the attachments and send as separate emails (i.e. 01 of 03, 02 of 03 etc.,).
 - iv. Do not CC/BCC to any other official/personal email IDs of CPSTL staff. Bids sent to any other email IDs is strictly not entertained.
 - v. However, the original bid shall be sent to CPSTL prior to finalize the technical evaluation.
10. Bids shall be valid up to 03/06 / 2025 *from the deadline for Bid Submission.*
11. All bids shall be accompanied by a Bid Security of **Rs. 60,000.00 (Rupees Sixty Thousand only)**. Bid Security shall be valid up to 01 /07 /2025 *[105 calendar days from deadline for Bid Submission.]*

The address(es) referred to above is (are):

**The Chairman
Departmental Procurement Committee (minor),
C/O Manager Procurement,
Ceylon Petroleum Storage Terminals Limited
Procurement Function, 1st floor, New Building,
Oil Installation, Kolonnawa,
Wellampitiya.**

**Telephone: +94 11 2572156, +94 11 5750764
Fax : +9411 2572155
Email : procure@cpstl.lk**

SECTION 04
FORM OF BID
AND QUALIFICATION INFORMATION

DRAFT

FORM OF BID

Name of Contract: SUPPLYING, INSTALLING, TESTING & COMMISSIONING OF 40KVA UPS (NOMINAL POWER 40KVA) SYSTEM FOR THE DATA CENTER AT CPSTL, KOLONNAWA. (KPR/12/2025)

To: **The Chairman,
Department Procurement Committee (Minor),
C/O Manager Procurement,
Ceylon Petroleum Storage Terminals Limited,
Procurement Function, New Building
Oil Installation Kolonnawa, Wellampitiya**

Gentlemen,

1. Having examined the Conditions of Contract given in the Standard Bidding Document-Procurement of Works [(ICTAD/SBD/03-Second Edition January 2007)]Schedule, Specifications, Drawings and Bill of Quantities and Addenda for the execution of the above named Works, we/I the undersigned, offer to execute and complete such Works and remedy any defect therein in conformity with the said Conditions of Contract, Specifications, Drawings and Bill of Quantities and Addenda for the sum of _____ Sri Lanka Rupees.....
..... (LKR.) or such other sums as may be ascertain in accordance with the said Conditions.
2. We/I acknowledge that the Bidding Data form part of our Bid.
3. We/I undertake, if our Bid is accepted, to commence the work as stipulated in the Contract data and complete the whole of the Works comprised in the contract within the time stated in the Contract data.
4. We/I agree to abide by this Bid for the period stated in the Sub-Clause 15 of Instruction to Bidders or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We/I understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this.....day of.....20... in the capacity ofduly authorized to sign tenders for and on behalf of.....

(IN BLOCK CAPITALS)

Signature :

Name :

Designation :

Address :

Witness :

Qualification Information

(To be completed and submitted by the bidder, with the Bid)

	Eligibility Requirement	Bidder’s Qualification
EN/International Electro technical Commission (IEC)	<i>(attach copies of relevant registration)</i>	
CIDA Registration		
Registration number	<i>(attach copies of relevant pages from the registration book)</i>	
Grade	EM 2 or above	
Specialty	Electrical Installation (Low Voltage)	
Expiry Date		
Blacklisted Suppliers		
Have you been declared as a defaulted contractor by NPA or any other Agency?		(Yes/No)
IF yes provide details		
IF yes provide details		
VAT Registration Number	(Attach copy of registration)	
SSCL Registration Number	(Attach copy of registration)	
Legal status	<i>(attach relevant status copies, as annex)</i>	
Value of similar works completed in last 5 years (indicate only the three largest projects)	1. Value Year 2. Value Year 3. Value Year <i>(attach copies of Certificate of Completion etc., as annex)</i>	
	Eligibility requirement	Bidders qualification
Qualification and experience of Key staff	Category	Required
	Experience and Qualifications	Nos.
	Technical officer – NDT (electrical) or equivalent	01
		Proposed by bidder (Name, experience and Qualifications)

Signature of the Bidder :.....

SECTION 05

SCHEDULE

DRAFT

SCHEDULE

ITB Clause	Conditions of Contract Clause	Item	Data
1.	1.1.8	Employer is:	Name : Chairman Ceylon Petroleum Storage Terminals Limited Address : Oil Installation, Kolonnawa, Wellampitiya.
	1.1.10	Engineer is:	Name : Engineering Manager Address : Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya.
1&13	1.1.21	Summary of Works	The Contractor shall remove existing UPS (02 nos.) handed over to CPSTL and Supply, Install, Test and Commission of 02 nos. UPS at destined place in the IT Function oil installation, Kolonnawa. Location: Data Center IT Function, Ground floor, New Administration Building, Oil Installation Kolonnawa Contract Name: Supplying, Installing, Testing & Commissioning of 40kVA UPS system for the data center at CPSTL, Kolonnawa.
1.	1.1.14	Intended Completion Date	Contract No. Intended Completion Date is The Contract period is 90 Calendar Days from the start date.
2.		Source of Fund	The source of funds is Ceylon Petroleum Storage Terminals Limited (CPSTL)
3.		Eligibility	The Requirement is; Bidders shall have valid EN / IEC (International Electrotechnical Commission) registration or CIDA Registration (EM 2 or above in Electrical Installation (Low Voltage) Specialty).

12.	Documents of the Bid	<p>Documents to be submitted with Bids. The bidders are required to submit the following documents and information along with the bid. This information will be critical for the evaluation of the offer submitted. Lack of submission of all the requested information shall be a reason for disqualification and finally for rejection of the offer</p>
6.1 & 6.2		<p>(a) Experience Proof of experience of the bidder carried /carrying out similar works of Electrical related work (supplying, installing, termination, testing and commissioning) the last 05 years also to be submitted. The information submitted shall include the client’s names, contract name, telephone numbers, fax numbers, year of completion, scope of work carried with relevant codes and standards, contract value and any other relevant information. Bidder shall have successfully completed at least three similar projects.</p> <p>(b) Schedule of Key Personnel Bidder shall submit a schedule of Key Personnel consisting the site staff. A full time a technical officer NDT (Electrical) or equivalent qualified with minimum 03 years’ experience in similar works in construction industry</p>
13.	10.10 Price Adjustment	<p>The Contract is not subjected to price adjustment.</p>
16.	Bid Security	<p>The amount of Bid Security shall be for an amount of Rs. 60,000.00 (Rupees Sixty Thousand only) (without VAT).</p> <p>The Bid Security should be in one of the following forms</p> <ol style="list-style-type: none"> a. A receipt for cash deposit paid to the Accountant, Ceylon Petroleum Storage Terminals Limited, 1st Floor, New Administration Building, Oil Installation, Kolonnawa in favor of the name of the Chairman, Ceylon Petroleum Storage Terminals Limited. b. A Bank guarantee from a commercial bank approved by the Central Bank of Sri Lanka operating in Sri Lanka. <p>The format of the Bid Security (unconditional) included in Section 8, Standard Forms (Bid). The validity of Bid Security shall be till 01.07.2025 from the date of closing of the bid</p>

31.	4.4	Performance Security	Amount of Performance Security required is 5 % of the Initial Contract Price. The form acceptable for the Performance Security (unconditional) included in Section 2, Standard Forms. The Performance Security shall be valid until 28 days beyond the intended Completion Date. The Performance Security shall be from a commercial bank with the authority of license issued by the monetary board of Sri Lanka (Central Bank of Sri Lanka).
	6.3	Extension of time	No extension of time will be considered other than the adverse weather condition or other special circumstances of any kind whatsoever which may occur, other than through a default of the Contractor be such as fairly to entitle the Contractor to an extension of time for the completion of the work. The Contractor shall, within fourteen (14) days after the cause for delay has arisen, deliver to the Engineer full and detailed particulars of any claim to extension of time to which he may consider himself entitled in order that such claim may be investigated at the time. In the event of failure on the part of the Contractor to act as stated herein before shall be forfeited in extension of time for the particular event.
	6.4	Late Completion	The amount to be paid is Rs. 1/200 th of Initial Contract Price per Day, subjected to maximum of 10 % of Initial Contract Price.
	8.1	Notification of Defects	The period for Defect Notification is 180 Days from Taking Over.
	10.3	Retention	Not Applicable
	12.1	Contractors' care of works	<p>Special Safety Conditions</p> <p>i. The work/workers should conform to the Fire & Safety rules and regulations of CPSTL and they should wear safety belts when working at high elevations. Before work of any nature is commenced in any area it is necessary to obtain excavation permits, safety certificates and if the work involves sparks or flames also a hot work permit from the Fire & Safety Section of the CPSTL, Kolonnawa depending on nature of work. All precautions stipulated in these documents must be observed by the Contractor and his employees. If the work cannot be completed in the period for which these documents are valid the work shall be discontinued until the documents have been renewed.</p>

- ii. Kolonnawa Installation is security restricted area and all contractor's personnel shall abide by the security regulations prevailing and those which might be enforced as and when necessary due to changed circumstances.
- iii. All contractor's personnel and their vehicles will be required to obtain gate passes before enter in to the Oil Installation, Kolonnawa. Those who possess valid police clearance are eligible to obtain gate passes.
- iv. The Contractor shall, except if and so far as the contract provides otherwise, indemnify the CPSTL against all losses and claims in respect of injuries or damage to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution of the works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to:
 - a. the permanent use or occupation of land by the works or any part thereof;
 - b. the right of the CPSTL to execute the works or any part thereof on, over, under, in or through any land;
 - c. the right of the CPSTL to execute the works or any part thereof on, over, under, in or through any land;
 - d. injuries or damage to persons or property resulting from any act or neglect of the CPSTL, his agent, servants or other Contractors, not being employed by the Contractor, or for or in respect of any claims proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the Contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the damage or injury.

- v. Only qualified persons shall perform electrical installations, and other related work.
- vi. The first consideration for working on any electrical system is to have the circuit positively de-energized. All circuits and equipment must be considered energized until opened, tagged and/or locked according to an approved procedure and should be proven de energized by testing with an approved testing device known to be in proper working order. At least two personnel shall be present while the work are being performed
- 13.1(a) Insurance cover The minimum cover for insurance of the works and of plant and materials is 110% of initial contract price.
- 13.1(b) The cover for loss or damage to equipment is Contractor’s responsibility.
- 13.1(c) Insurance cover to the amount of Rs. 1,000,000.00 for the entire period of work for the loss or damage to the properties of CPSTL within the Kolonnawa Installation before commencing the execution of the work.
33. 1.1.11 Adjudicator The Adjudicator proposed by the Employer is an Adjudicator selected from the pool of Adjudicators of Construction Industry Development Authority (CIDA).
- 14.0 Resolution of Disputes Fees and types of reimbursable expenses to be paid to the Adjudicator shall be on a case-to-case basis and shall be equally shared by the Contractor and the Employer.

SECTION 06
SPECIFICATIONS

DRAFT

SPECIFICATIONS

The works under this contract shall be executed in accordance with the Specifications given in the following documents issued by the Construction Industry Development Authority (CIDA), “Savsiripaya”, 123, Wijerama Mawatha, Colombo 07.

Publication No.	Description
SCA/8	Specification for Electrical and Mechanical Works associated with Building and Civil Engineering, Sri Lanka, Second Edition, August 2000

It is implied that the eligible Bidders are fully acquainted with the above Documents and therefore, those will not be issued to the Bidders under This Tender.

However, Bidders may purchase the same, if necessary, from CIDA, “Savsiripaya”,123, Wijerama Mawatha, Colombo 7.

SCOPE OF SUPPLY, SCOPE OF WORK AND SPECIFICATION

6.1 Scope of Supply by CPSTL

- 6.1.1 CPSTL shall assist the supplier in identifying distribution and feeding circuits and arranging power interruptions for cable terminations and testing in a manner which shall have minimum disturbance for CPSTL operations.
- 6.1.2 Construction Utilities
- 6.1.2.1 Electricity and drinking water that would be supplied to the Contractor to undertake this work would be charged from the Contractor per meter readings/ estimate. The perspective contractor is required to indicate his requirements of power from the CPSTL in his offer for evaluation purposes. Or the Contractor shall arrange his own source of electricity and water.
- 6.1.2.2. The maximum available electrical power supply available to the supplier is 400V AC, 4 wire (TPN), 50Hz.

6.2 Contractor's Scope of Supply

- 6.2.1 Supply of all inspection equipment such as Insulation testers, Continuity testers, Earth resistance testers, Voltage and current measuring instruments and phase sequence meters to perform necessary inspection and testing.
- 6.2.2 Supply of Cable glands, Lugs, Lug Boots, Nuts and Bolts etc. for cable termination.
- 6.2.3 Supply of cable trays, joints, bends, brackets and other accessories.
- 6.2.4 Construction Utilities.
- i. Contractor shall use his own feeder cables and temporary power distribution board sufficiently rated to power the equipment and machinery used at site, conforming to CEB regulations in consultation / supervision of Electrical Engineer of CPSTL
 - ii. Contractor shall install the feeder cables from the metering point up to the temporary power distribution board as per the instruction & approval of the CPSTL Electrical Engineer.
 - iii. The whole electrical installation of the Contractor should conform to IET wiring regulations (17th Edition) published by the Institution of Engineering and Technology (I.E.T), London.
- 6.2.5 All the power isolation, interruption and cable termination work must be planned that there will be minimum interruption to the operational activities.
- 6.2.6 Temporary arrangements to provide power supply for the user functions and applications shall be arranged if the power interruptions affect operational activities for periods more than 01 hour.
- 6.2.7 Termination and testing of the cables shall be arranged that there will be minimum disturbance to the operations. Contractor may have to arrange work during non-operational hours.

6.3 Contractor's Scope of Work and Specifications

- 6.3.1. All electrical work shall conform to 17th Edition of IET wiring regulations (BS 7671:2008)
- 6.3.2. Contractor shall take a joint measurement with CPSTL of the work done. The payments will be made for the amount of work measured and approved by the engineer at the BOQ rate not exceeding the quantity specified in the BOQ.

6.4 Warranty

The bidder shall give a manufacturer's warranty for all the equipment supplied by him for a minimum period of **sixty (60) months** from the final delivery date. (The manufacturer's scope and the local agent's scope shall be elaborated separately)

Any defect found during this warranty period shall be attended by the Bidder at his own cost. (labour & spare parts) and any defective parts should be replaced with new parts free of charge.

Preference for extended warranty

Subject to above conditions; the bids with warranty offered for 24 months or more than 60 months; will be given preference in an incremental manner respectively; during the bid evaluation; provided variation between their evaluated bid prices are less than 5%.

6.5 Country of Origin/Manufacture

The preferred Country of Origin/Manufacture shall be European countries (France, Sweden, Germany, UK) Italy, USA or Japan.

6.6 TECHNICAL SPECIFICATIONS

Uninterruptible power supply (UPS), UPS type or similar with a nominal power of **40 kVA**, with sealed, valve-regulated lead-acid batteries, sized in order to guarantee a minimum back-up time as defined in section 4 of this document.

Bidders must draw up their offer against the contents of this Procurement Specification. Any deviation and/or exception to the required specification/s must be pointed out in their offer document; where not stated, it will automatically be assumed that the bidder complies with the relevant section/s of this Procurement Specification.

NO.		Description
1	Uninterruptible power supply (UPS)	UPS type or similar with a nominal power of 40 kVA , (without sealed, valve-regulated lead-acid batteries) sized in order to guarantee a minimum back-up time as defined in section 4 of this document.

6.6.1. Reference Standards

The Supplier must demonstrate that they have a quality management system accredited to EN ISO 9001:2000 for the design, manufacture, sale, installation, maintenance and servicing of uninterruptible power supplies.

No.	Description
6.6.1.1	<p>The Uninterruptible Power Supply shall be CE marked in accordance with the Directives on Safety and EMC:</p> <p><i>LV 2006/95/EC</i> Low voltage Directive contains provisions relating to equipment safety and imposes the EC marking obligation from 1/1/97.</p> <p><i>EMC 2004/108/EC</i> Electromagnetic compatibility directive contains provisions relating to UPS immunity and emissions in its installation environment and imposes the EC marking obligation from 1/1/96.</p>
6.6.1.2.	<p>The Uninterruptible Power Supply shall be designed and produced according to the following specific standards for UPS:</p> <p><i>IEC EN 62040-1:</i> Uninterruptible Power Supplies (UPS): general and safety provisions.</p>

	<p><i>IEC EN 62040-2:</i> Requirements for electromagnetic compatibility (EMC)</p> <p><i>IEC EN 62040-3:</i> Methods for specifying performances and test prescriptions.</p>
6.6.1.3.	<p>The Uninterruptible Power Supply shall also consider the following general standards, where applicable:</p> <ul style="list-style-type: none"> <i>i. IEC 60529:</i> Degree of protection provided by enclosures <i>ii. IEC 60664:</i> Insulation for low-voltage equipment <i>iii. IEC 60755:</i> General requirements for residual current protective devices <i>iv. IEC 60950:</i> General safety provisions for Information Technology equipment <i>v. IEC 61000-2-2:</i> Electromagnetic compatibility and immunity <i>vi. IEC 61000-4-2:</i> Electrostatic discharge immunity tests <i>vii. IEC 61000-4-3:</i> Electromagnetic, radiofrequency immunity tests <i>viii. IEC 61000-4-4:</i> Transient overvoltage immunity tests <i>ix. IEC 61000-4-5:</i> Overvoltage immunity tests <i>x. IEC 61000-4-6:</i> Electromagnetic compatibility (EMC): Testing and measurement, immunity to conducted disturbances, induced by radiofrequency fields <i>xi. IEC 61000-3-12:</i> Harmonic current emission limitation (for equipment with rated current higher than 16A and less than 75A) <i>xii. EN 50171:</i> Centralized power supply systems

6.6.2. DESCRIPTIONS OF THE DESIRED SYSTEM

No.	Description
6.6.2.1.	According to the VFI-SS-111 classification, as defined in IEC EN 62040-3, the UPS should be of the on-Line, double-conversion type (VFI), the load shall always be powered by the inverter which will supply a sinusoidal waveform with stabilized voltage and frequency. In addition, the UPS shall have input and output filters to protect the load from mains power supply disturbances and lightning.
6.6.2.2.	<p>The UPS shall be compatible with most critical IT and industrial plants and shall have the following features:</p> <ul style="list-style-type: none"> i. PFC Converter (Zero Impact Source) ii. High short-circuit current iii. BACK-FEED protection iv. Complete and detailed diagnostics v. Battery Care System vi. Inverter circuit for synchronization with an external source
6.6.2.3.	The UPS shall be able to supply the load for long periods using optional battery extension packs when the mains power supply fails or for a time period sufficient for a controlled shutdown of the connected IT loads using UPS management and control software (Windows 95, 98, 2000, Me, XP, NT 4,0, Linux, Mac OS 9.x, OSX operating systems).

6.6.3. ELEMENTS OF THE UPS

6.6.3.1. Rectifier/Converter

No.	Description
6.6.3.1.1	<p>A rectifier/converter will transform the mains line AC voltage to a DC voltage. The functions carried out by the rectifier will include:</p> <ul style="list-style-type: none"> i. supply the inverter with a DC voltage ii. automatically charge the battery
6.6.3.1.2	<p>The converter shall use Power Factor Correction (PFC) technology using a DSP microprocessor to allow a low harmonic content and high input power factor.</p>
6.6.3.1.3	<p>Battery charging may be performed in one of two different configurable methods:</p> <ul style="list-style-type: none"> i. Back Up Battery (standard configuration): the charge state of the battery will be constantly kept under control; when the mains power supply is restored, the UPS will activate a recharge cycle keeping the batteries at a preset voltage level. ii. Two voltage level recharges (configurable): will consist of two phases, in which the first will have to supply 80% of energy, with limited recharge current and increasing voltage while the second will have to supply the remaining 20% of capacity, with a constant maintenance voltage. iii. Cyclic recharge: will consist of battery charge and discharge cycles; This battery charging method could be recommended by battery manufacturers to prolong the battery life.
6.6.3.1.4	<p>The rectifier will need to be able to perform a "soft start", with a period of time that can be set from 0 to 30 seconds (the period of time during which the current absorption passes from zero to the pre-set value, to ensure a gradual take-up of the current supplied by the mains or generator. Moreover, when the mains power supply is restored, it must be possible to delay the switching of the input stage in a period of time that can be set from 0 to 255 seconds.</p>
6.6.3.1.5	<p>The battery charging circuit must be capable of temperature compensation (correction factor: -3,3 mV/element/°C). The rectifier must be compatible with the following battery types:</p> <ul style="list-style-type: none"> i. Valve regulated lead acid Absorbent Glass Mat batteries – AGM ii. Valve regulated lead acid GEL batteries – GEL iii. Nichel-Cadmium iv. Li-ion

6.6.3.2. Battery

No.	Description
6.6.3.2.1	CPSTL currently has 32 batteries (02pack), each with a capacity of 75AH, installed in specialized external cabinets at the customer's location. All bidders are required to visit the site and conduct a survey to assess the compatibility of the batteries with the proposed UPS system.
6.6.3.2.2	This will be the energy reserve used to supply the inverter when the main input power supply to the UPS fails. The battery will be made up of sealed, valve regulated lead acid stationary storage cells.
6.6.3.2.3	Battery efficiency will have to be periodically checked at configurable times or manually at the request of the user, through an automatic test that includes a controlled discharge of the batteries. The test function shall not affect battery life or disrupt the UPS output in any way.

6.6.3.3. Inverter

No.	Description
6.6.3.3.1	The inverter shall convert the DC voltage into a stabilized sinusoidal AC output waveform to power the load. With the UPS in "on-line" mode, the connected load shall always be powered from the inverter. The UPS shall guarantee a voltage distortion below 3% whatever the loading conditions are.
6.6.3.3.2	The inverter shall be of the IGBT (Isolated Gate Bipolar Transistor) type with DSP microprocessor digital control and a switching frequency of 18 kHz.
6.6.3.3.3	The inverter output three-phase voltage will be controlled phase by phase.
6.6.3.3.4	The three-phase/single-phase inverter shall supply an active power equal to 0,9 times the rated power (kva). It must be able to guarantee a minimum inverter efficiency that is higher than 95% (for more details refer to the table at the end of the document).
6.6.3.3.5	The inverter will be equipped with its own output current limiting circuit so that potential short circuits do not damage the components. This circuit will be sized so that the inverter can power a short circuit with a current of 150% of the nominal current for a period of time greater than or equal to 0.5 seconds; after this time, the inverter will automatically switch off in order to prevent damage.
6.6.3.3.6	The inverter shall be capable of operation during overload conditions for variable periods of time depending on the level of overload, and more precisely: Three-Phase output Loads with Power Factor equal to 0.9

	<ul style="list-style-type: none"> i. up to 10 minutes for three-phase overloads up to 110% of the nominal load ii. up to 1 minute for three-phase overloads up to 133% of the nominal load iii. up to 5 seconds for three-phase overloads up to 150% of the nominal load.
6.6.3.3.7	After this period, the load will be transferred, without disruption, to the By-pass line.

6.6.3.4. Automatic by-pass

No.	Description
6.6.3.4.1	The BY-PASS must be capable of synchronized, transfer (automatic or manually activated) of the load from INVERTER output to the BY-PASS supply and vice-versa. Using SCR technology, the transfer shall be instantaneous in both directions.
6.6.3.4.2	The BY-PASS shall have an auxiliary power supply input separate from the mains power supply.
6.6.3.4.3	It must comply with the regulations in force EN62040-1-1 the BY-PASS shall have a protection device, commonly known as Back-feed Protection, to prevent, for example, in case of failure of the SCRs, any voltage returns on the mains power supply. In this case, the UPS will be forced over to the bypass line and the inverter remote switch will be triggered. An isolated auxiliary contact must be available to control the possible external remote switch that triggers the bypass line.

6.6.3.5. Manual by-pass

No.	Description
6.6.3.5.1	<p>The UPS shall have a manual transfer switch to be during maintenance: by closing the manual by-pass and opening all the other switches, the UPS will be isolated, and the output load will power from the mains power supply.</p> <p>This will allow maintenance work to be performed inside the UPS cabinet itself.</p>
6.6.3.5.2	The manual by-pass line will have to be sized for the UPS nominal power.

6.6.3.6. Interface card

No.	Description
6.6.3.6.1	The UPS must contain, as standard, an interface card having the following features:
	<ul style="list-style-type: none"> i. The card shall be equipped with at least one RS232 serial port available with DB9 and a USB port.

	ii. It shall have configurable, voltage-free contacts for the remote transmission of main alarms including End of discharge pre-alarm, Battery in Discharge and By-pass/Failure.
	iii. It shall be able to acquire three input signals from the field in order to allow remote switching on and off of the inverter and the UPS or to transfer the load from the inverter to the bypass line.
	iv. It shall be set to receive an emergency shut-down instruction (isolated), commonly known as Emergency Power Off (E.P.O.).
	v. It shall be set to receive an external control signal (12÷24Vac with power = 0.5VA and frequency 50-60 Hz) synchronizing the inverter, which will no longer be locked into the UPS mains power supply.
	vi. It must be designed to monitor the status of an external manual bypass circuit breaker.

6.6.3.7. Mimic panel

No.	Description
6.6.3.7.1	A mimic panel shall provide the user with visual signals (using LEDs and an LCD) and acoustic signals (using a buzzer) about the status of the UPS. It shall also allow the control, monitoring, diagnostic and customization of the UPS through easy access to the display menus.

6.6.3.8. Output switch

No.	Description
6.6.3.8.1	The UPS shall be equipped with an output isolating device.

6.6.3.9. Paralleling multiple units

No.	Description
6.6.3.9.1	It shall be possible to parallel the UPS outputs with those of other UPS of the same series to increase resilience (redundancy) of the system or the total power available.
6.6.3.9.2	This feature shall be available for already installed UPS to allow future expansion at a later date.
6.6.3.9.3	A new UPS can be added to the system while the other units are on-line and powering the load from the inverter.
6.6.3.9.4	The integrated UPS will configure itself automatically with the system data without any disturbance to the load.

6.6.4. DESCRIPTIONS OF OPERATION

No.	Description
A	The Uninterruptible Power Supply, using DSP digital control, shall allow for the following types of operation:
	i. Dual conversion operation
	ii. Line Interactive operation
	iii. Smart Economy operation
	iv. Frequency Converter operation
	v. Back-up operation
	The operating mode must be selectable from the mimic panel, by way of suitable commands.
	The IGBT-based inverter shall constantly be synchronized with the mains power supply, to allow transfer of the load from the inverter to the bypass supply and vice versa without any interruption of power supply to the load.
In whatever operating mode, the battery charger charges the battery set.	

6.6.4.1. Dual conversion operation (Online)

No.	Description
6.6.4.1.1	In this operating mode, under normal service conditions, the power will always be supplied to the load by the inverter, guaranteeing maximum protection.
6.6.4.1.2	If the primary mains power supply fails or falls outside a permitted tolerance range, power will be supplied to the inverter from the battery set. During this phase, the storage battery will be in a discharge condition. The user will be warned about this operating condition by both visual and acoustic signals. A diagnostic algorithm will calculate the residual back-up time available.
6.6.4.1.3	When the mains power supply returns to within the permitted limits, the Uninterruptible Power Supply will automatically return to operation under normal conditions.
6.6.4.1.4	If there is an inverter shutdown (voluntary or due to the operation of a protective device) or temporary overload downstream of the UPS, the load will automatically be transferred, without disruption, to the reserve by-pass supply.
6.6.4.1.5	If the overload occurs and the by-pass supply and UPS are not synchronized, the Uninterruptible Power Supply will not transfer the load, but continue to power it through the inverter, for a period of time that depends on the extent of the overload and on the UPS capabilities.
6.6.4.1.6	Suitable signals will inform the user about these irregular operating conditions.

6.6.4.2. Line Interactive operation (Stand-by on)

No.	Description
6.6.4.2.1	In this operating mode, under normal service conditions, power will always be supplied to the load from the auxiliary bypass supply through the static switch. The quality of the supply shall be constantly monitored through algorithms run in real time by the DSP control.
6.6.4.2.2	If the bypass supply is not within the permitted tolerance range, the load will automatically be transferred, without disruption, to the output of the inverter.
6.6.4.2.3	If the mains power supply fails, power will be supplied to the load from the storage battery through the inverter. During this phase, the storage battery will be in a discharge condition. The user will be warned about this operating condition by both visual and acoustic signals. A diagnostic algorithm will calculate the residual back-up time available.
6.6.4.2.4	When the quality and the reliability of the mains power supply returns to within the permitted range, the Uninterruptible Power Supply will automatically power load from the by-pass supply.

6.6.4.3. Smart Economy operation (Smart Active)

No.	Description
6.6.4.3.1	In this operating mode, under normal service conditions, the UPS will independently be able to operate in Online or Stand-by on modes according to the quality of the power supply.
6.6.4.3.2	When this mode is activated, the UPS input power source will be monitored for a variable period of time (configurable and if its measured values remain within preset limits, the load shall be powered from the By-pass supply without disruption. If this is not the case, the load shall be supplied by the inverter, and the monitoring cycle is repeated but for a longer time period.

6.6.4.4. Frequency Converter Operation (Converter)

No.	Description
6.6.4.4.1	In this operating mode, under normal service conditions, power shall be supplied to the load from the inverter.,
6.6.4.4.2	The by-pass line shall be disabled to prevent damage to the load as the UPS can be configured with an input of 50Hz and an output of 60Hz or vice versa.
6.6.4.4.3	In order to guarantee perfectly stable output voltage and frequency, the UPS in converter mode must be designed with a minimum battery configuration.

6.6.4.5. Back-up Operation (Stand-by OFF)

No.	Description
6.6.4.5.1	In this operating mode, under normal service conditions, power shall be supplied to the load from the inverter only in the event of a mains power supply failure (in accordance with one of the operating modes provided for in the EN 50171 standard).
6.6.4.5.2	<p>The UPS must be configured in compliance with the European standards and regulations 50171 (centralized power systems), in accordance with the various different operating procedures listed:</p> <ul style="list-style-type: none"> - Without interruption - Changeover - Non maintained changeover mode - Changeover with additional control switching device for partial switching of the load (with Powershare socket).

6.6.5. COMMUNICATIONS**6.6.5.1. Monitoring and shut-down software included**

No.	Description
6.6.5.1.1	The system must have the relative software to guarantee effective and intuitive management of the UPS, displaying on bar graphs all the most important items of information such as input voltage, applied load, battery capacity, etc.
6.6.5.1.2	The software must be able to give detailed information also in cases of UPS failure, in support of the failure diagnostic.
6.6.5.1.3	It shall be developed with a Client/Server architecture, making it flexible and easy to manage, and provided with multi-language support and online help.
6.6.5.1.4	The software shall be provided free of charge with the UPS having an SNMP agent included for Windows 95, 98, 2000, Me, XP, NT4.0, Novell, Linux, MacOS 9.x, OSX operating systems.
6.6.5.1.5	The Software must also be able to program the weekly start-up and shutdown of the UPS, in automatic mode.

6.6.5.2. Main features of the Software

No.	Description
6.6.5.2.1	The Software must have the following main features:
6.6.5.2.2	<p>Sequential and prioritized shutdown:</p> <p>The software shall have to perform the unmanned shut-down of all the networked PCs, saving all active work in the most widely used applications. The user can define his/her own shut-down procedures, also establishing priority for the shut-down of critical computers (such as servers).</p>
6.6.5.2.3	<p>Multiplatform compatibility:</p> <p>The software shall enable standard management and monitoring, using the TCP/IP communication protocol. This shall make it possible to manage hardware (servers and PCs) having different operating systems.</p>
6.6.5.2.4	<p>Events scheduling:</p> <p>The software shall allow the definition of shutdown/power-off and switch-on processes for the connected loads, for enhanced system security and energy savings.</p>
6.6.5.2.5	<p>Messages management:</p> <p>The software shall have to constantly inform the user about the status of the UPS, both locally and by sending messages to network users; moreover, it shall be possible to define a list of users who shall receive messages, emails, faxes and SMS in case of unexpected faults or mains power supply failures.</p>
6.6.5.2.6	<p>Integrated SNMP agent:</p> <p>The software must contain an integrated SNMP agent for management of the UPS via SNMP.</p> <p>This agent shall be able to send all the information concerning the UPS and to generate traps using the RFC 1628 MIB standard.</p> <p>This shall allow management of the UPS in compatible SNMP management stations such as HP Open View, Novell Manage wise and IBM Net View.</p>

6.6.5.3. Mimic panel

No.	Description
6.6.5.3.1	The UPS shall be equipped with a graphic display, through which it will be possible to obtain information, display alarm and/or status messages or enter commands. A list is given below, divided by type:
	<p>1. Languages:</p> <p>choice of Italian, English, French, German, Spanish, Chinese, Polish and Turkish.</p>
	<p>2. Measurements:</p> <ul style="list-style-type: none"> i. input voltages ii. by-pass voltage iii. battery voltage iv. output voltage v. output currents vi. output peak currents vii. system temperature viii. input frequency ix. by-pass frequency x. battery current (charge/discharge) xi. output frequency xii. output power xiii. back-up time xiv. heat sink temperature
	<p>3. Controls:</p> <ul style="list-style-type: none"> i. start-up (power load) ii. load on by-pass iii. battery test iv. shutdown v. load on inverter
	<p>4. Customization set points</p> <ul style="list-style-type: none"> i. nominal output frequency ii. operating modes iii. shutdown due to minimum load iv. battery expansion (external) v. nominal output voltage vi. delay on start-up vii. acoustic alarm off viii. sensitivity in Line Interactive mode

	<p>5. Log:</p> <p>It shall be possible to store up to 960 events in FIFO (First in First Out) mode.</p> <p>The alarm string must be easy to interpret and shall contain the following information: Event code, Description of event, Date, Time.</p> <p>Display will take the form of a graphic display with scrolling keys. It shall be possible to download the log in TXT format by means of Software included with the UPS.</p> <p>The UPS is equipped with a special function called “WAVEFORM” that allows to display the output voltage/current and input voltage waveforms.</p>
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6.6.5.4. General description

No.	Description
6.6.5.4.1.	<p>Signaling of the UPS operating status shall be provided by means of:</p> <ul style="list-style-type: none"> i. A graphic display divided into four main areas, each having a specific function:
	<p>General information: In this area the date, time, page no. or title of the menu active at that time will be permanently displayed.</p>
	<p>Data display/Menu Navigation: In this area UPS measurements, constantly updated by the microprocessor, will be displayed. The other menus selected by the users by means of function keys will also be displayed.</p>
	<p>UPS status/Errors-Failures: The first line of this area must always remain active in order to display, in real time, the UPS operating state, while a second line will only be displayed if there is an error and/or failure of the UPS (together with the corresponding code).</p>
	<p>Key Function: This area contains the keys to be used for navigation in the various menus and to choose the different functions.</p>
	<ul style="list-style-type: none"> ii. Six luminous indicators: <ul style="list-style-type: none"> a. Operation from mains b. Operation from battery c. Load on by-pass d. Stand-by/Alarm e. Batteries to be replaced f. Line Interactive mode
	<ul style="list-style-type: none"> iii. An acoustic indicator

6.6.5.4.2	<p>Luminous indicators: LEDs.</p> <p>The signaling LEDs must provide fast information directly on the system's mimic panel, as explained below:</p>
6.6.5.4.3.	<p>Operation from mains LED: shall indicate:</p> <ul style="list-style-type: none"> i. When the power supply input and by-pass voltages are present and correct. ii. When one of the two voltages is incorrect. iii. When both voltages are not present or correct.
	<p>Operation from battery LED: shall indicate:</p> <ul style="list-style-type: none"> i. When the battery is supplying energy. ii. When the "VOLTAGE LOW ON BATTERY PRE-ALARM" is active. iii. When the battery is not supplying energy, and its voltage is correct.
	<p>Load on by-pass LED: shall indicate:</p> <ul style="list-style-type: none"> i. When the system output is switched to the automatic by-pass supply. ii. When the manual by-pass switch is closed.
	<p>Stand-by/Alarm LED: shall indicate:</p> <ul style="list-style-type: none"> i. When, after a failure, the load has been transferred to the by-pass supply.
	<p>Batteries to be replaced LED: shall indicate:</p> <ul style="list-style-type: none"> i. When the battery set fails the battery test.
	<p>Line Interactive mode LED: shall indicate:</p> <ul style="list-style-type: none"> i. When the UPS has been put into Line Interactive operation.
6.6.5.4.4.	<p>Acoustic indicator</p> <p>The acoustic indicator emits an intermittent sound, in all conditions other than "NORMAL OPERATION" and with different modulation according to the different UPS operating states.</p>
6.6.5.4.5.	<p>Signaling messages</p> <p>Basic messages about the UPS operating state will also be issued under normal operating conditions. It shall be possible to obtain other information, or enter commands, by navigating through the sub-menus using the mimic panel keys.</p>
6.6.5.4.6.	<p>Alarm messages</p> <p>The alarm messages shall be shown on the graphic display and must be displayed with their ID code and according to their level of priority and importance. In order to show the importance of the alarm, these will have to be coded according to the following criteria:</p>

6.6.5.4.7.	Axx code (Anomaly + Progressive number) It shall indicate the presence of "minor" problems which will limit UPS performance or prevent the use of some of its functions.
6.6.5.4.8.	Fxx code (Fault + Progressive number) It shall indicate the presence of more critical problems than those under "Anomaly" which if they persist could, even in a very short time, shutdown the UPS
6.6.5.4.9	Lxx code (Lock + Progressive number) It shall indicate UPS shutdown; they will usually be preceded by an alarm signal and will shut down the inverter and transfer the load onto the bypass supply. This procedure must not however be activated for outages caused by strong and persistent overloads or by short circuits.

6.6.6. OPTIONS

No.	Description
6.6.6.1	In addition, the UPS must be able to:
6.6.6.2	Operate with a Galvanic isolation transformer to provide a separation between the load and the input supply to the UPS. This configuration excludes the possibilities to have batteries inside the UPS.
6.6.6.3	Connect with additional battery extension packs to increase the back-up time available.
6.6.6.4	Operate with an external maintenance bypass, for example to allow UPS replacement without disruption to the load, monitoring in the UPS the external bypass switch state through a suitable signaling input.
6.6.6.5	Connect and configure in parallel multiple UPS using a closed-loop parallel interface kit up to a maximum of 4 units.
6.6.6.6	Connect to a LAN network, by means of the main network communication protocols (TCP/IP, HTTP and SNMP);
6.6.6.7	Connect, through a RS232 or RS485 serial line, to monitoring systems using the Mod-Bus/JBus protocol.
6.6.6.8	Interface with a Profibus DP network.
6.6.6.9	Connect to an AS/400 system, in order to operate correctly with the OS/400 IBM shutdown facility
6.6.6.10	Make available, for remote monitoring, volt-free contacts for alarms and provide an input contact.
6.6.6.11	Operate with a modem for remote monitoring.

6.6.6.12	Provide a facility for centralized management using the SNMP communication protocol.
6.6.6.13	Connect to a battery temperature sensor.
6.6.6.14	Connect to A remote mimic panel must be connected that faithfully reproduces the information available on the system display, but that does not allow any commands to be sent. The display must show the information in at least the following languages: Italian, English, German, French, Spanish, Chinese, Polish Turkish, Russian, Finland, Czech, Hungarian and Portuguese.

6.6.7. DOCUMENTS

No.	Description
6.6.7.1	The product Technical Specifications must be provided with the offer and must contain the following information:
	i. product features
	ii. product technical data
	iii. installation instructions
	iv. information available on the mimic panel
	v. list of options available
6.6.7.2	A user guide must be supplied with the product, providing information on the installation and use of the equipment.

6.6.8. PACKAGING

No.	Description
6.6.8.1	The packaging provided by the supplier must ensure that the product reaches its destination intact and in working order.

6.6.9. COMMISSIONING AND INSTALLATION

No.	Description
6.6.9.1	The installation of the product will be carried out by the supplier who will also supply the proper instructions on the use of the unit.

6.6.10. REMOTE SERVICE

No.	Description
6.6.10.1	Upon request, the supplier shall ensure remote supervision of the equipment 24 hours a day. The supplied products must therefore be able to share information via modem and to communicate with the authorized Service Centers so that they can periodically test the system and check present and past operating parameters, automatically sending a report to the user.
6.6.10.2	The UPS must be able to call the Service Centers automatically to signal possible alarms or failures and to ask for the immediate intervention of the Service Centre.

6.6.11. TECHNICAL FEATURES THREE-PHASE OUTPUT**6.6.11.1. Rectifier features**

UPS features	U. of. M.	Procurement data
Nominal voltage	(Vac)	400 three-phase + N
Voltage tolerance at 100% load for non-intervention from battery	(Vac)	320 ÷ 480
Voltage tolerance at 50% load for non-intervention from battery	(Vac)	240 ÷ 480
Nominal frequency (60 Hz selectable)	(Hz)	50
Frequency tolerance	(Hz)	40 ÷ 72
Input power factor @ 100% load	-	0.99
Input current harmonic distortion	(%)	≤3

6.6.11.2. Battery features

UPS features	U. of .M.	Procurement data
Standard battery	-	Lead VRLA
Single blocks	-	32
Battery recharge current	(A)	8

6.6.11.3. Inverter output features

UPS features	U. of .M.	Procurement data
Nominal voltage	(Vac)	400 three-phase + N
Nominal frequency (60 Hz selectable)	(Hz)	50
Nominal apparent power	(kVA)	40
Active power with Power Factor from 0.8 inductive to 0.9 capacitive	(kW)	36
Static voltage stability with input voltage within the accepted limits and load variation from 0 to 100%	(%)	±1
Dynamic voltage stability with instantaneous load variation from 0 to 100%	(%)	±3
Load peak factor without derating	-	3:1
Output voltage distortion with 100% linear load	(%)	≤1
Output voltage distortion with 100% of non-linear load as specified in IEC/EN 62040-3 standard	(%)	≤3
Switching frequency	(kHz)	18
Output frequency stability with internal oscillator	(%)	0.01
Overload capability: - for 10 minutes - for 1 minute - for 5 seconds	(%) (%) (%)	
Short circuit current: >150% I _n	(s)	≥0.5

UPS features	U. of .M.	Procurement data
Nominal voltage (380 – 415 selectable)	(Vac)	400
Voltage range (adjustable)	(Vac)	from 180 to 264
Nominal frequency (60 Hz selectable)	(Hz)	50
Frequency range (selectable from 0.25 to 10%)	(%)	±5
Overload capability		
- continuous	(%)	110
- for 60 minutes	(%)	133
- for 10 minutes	(%)	150
- for 2 seconds	(%)	>200

6.6.11.4. UPS Features

UPS features	U. of .M.	Procurement data
Noise level measured @ 1 meter and at 100% of the load according to ISO 3746	(dBA)	≤62
AC/AC performance under double conversion operation at 100% load	(%)	≥92
AC/AC performance under double conversion operation at 50% load	(%)	≥92.0
Performance during under digital interactive operation at 100% load	(%)	≥98
Country of manufacture/origin		European countries (France, Sweden, Germany, UK) Italy, USA or Japan.
Cabinet protection rating	-	IP 20
Warranty		Minimum five years

SECTION 07
BILL OF QUANTITIES

DRAFT

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

JOB: SUPPLYING, INSTALLING, TESTING & COMMISSIONING OF 40KVA UPS (NOMINAL POWER 40KVA) SYSTEM FOR THE DATA CENTER AT CPSTL, KOLONNAWA.

Item No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	Supply, Installation, Testing & Commissioning of 40kVA UPS System to carry out SAP/ERP system operations without interruptions.	Nos.	2		-
Sub Total I for 02 Nos. UPS					-
Less Discount (.....%)					
Sub Total II with Discount					
Add SSCL 2.5%					
Sub Total III with SSCL					
Add 18% of VAT (if applicable)					
Total for 02 Nos. UPS					

VAT registration No:

Total Amount in words:

(Without VAT)

Name of the Bidder:

Address of the Bidder:

.....

**** All bidders are required to duly complete and submit the Technical Compliance sheet provided in section 10 as part of their bid failure to submit the completed Technical Compliance sheet may result in the rejection of the bid.**

.....

**Signature of Bidder
Company Seal**

.....

Date

SECTION 08
STANDARD FORMS (BID)

DRAFT

FORM OF BID SECURITY

[this Guarantee form shall be filled in accordance with the instructions indicated in brackets]

----- *[insert issuing agency’s name, and address of issuing branch or office]*

Beneficiary: ----- *[insert (by PE) name and Address of employer]*

Date: ----- *[insert (by issuing agency) date]*

BID GUARANTEE No.: ----- *[insert (by issuing agency) number]*

We have been informed that -----
 - *[insert (by issuing agency) name of the Bidder]* (hereinafter called "the Bidder") has submitted to you its bid dated -----*[insert (by issuing agency) date]* (hereinafter called "the Bid") for theof *[insert name of Contract]* under Invitation for Bids No. ----- *[insert IFB number]* ("the IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ----- *[insert name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ----- *[insert amount in figures]* -----
 ----- *[insert amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) the successful bidder furnishing the performance security, otherwise it will remain in force up to -----
 --- *(insert date)*

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

[signature(s) of authorized representative]

SECTION 09
TECHNICAL COMPLIANCE SHEET

DRAFT

TECHNICAL COMPLIANCE SHEET

NO.		Description	Comply (Yes/No)	Bidders Remarks
1	Uninterruptible power supply (UPS)	UPS type or similar with a nominal power of 40 kVA, (without sealed, valve-regulated lead-acid batteries) sized in order to guarantee a minimum back-up time as defined in section 4 of this document.		
1.1	UPS model and make	Specify		

No.	Description	Comply (Yes/No)	Bidders Remarks
2	6.6.1. Reference Standards		
3	6.6.2. Descriptions of the desired system		

6.6.3. ELEMENTS OF THE UPS

No.	Description	Comply (Yes/No)	Bidders Remarks
1	6.6.3.1. Rectifier/Converter		
2	6.6.3.2. Battery		
3	6.6.3.3. Inverter		
4	6.6.3.4. Automatic by-pass		
5	6.6.3.5. Manual by-pass		
6	6.6.3.6. Interface card		
7	6.6.3.7. Mimic Panel		
8	6.6.3.8. Output Switch		
9	6.6.3.9. Paralleling multiple units		

6.6.4. DESCRIPTIONS OF OPERATION

No.	Description	Comply (Yes/No)	Bidders Remarks
1	A. Descriptions of operation		
2	6.6.4.1 Dual conversion operation (Online)		
3	6.6.4.2 Line Interactive operation (Stand-by on)		
4	6.6.4.3 Smart Economy operation (Smart Active)		
5	6.6.4.4 Frequency Converter Operation (Converter)		
6	6.6.4.5 Back-up Operation (Stand-by OFF)		

6.6.5 COMMUNICATIONS

No.	Description	Comply (Yes/No)	Bidders Remarks
1	6.6.5.1 Monitoring and shut-down software included		
2	6.6.5.2 Main features of the Software		
3	6.6.5.3 Mimic panel		
4	6.6.5.4 General description		

No.	Description	Comply (Yes/No)	Bidders Remarks
1	6.6.6. Options		
2	6.6.7. Documents		
3	6.6.8. Packaging		
4	6.6.9. Commissioning and installation		
5	6.6.10. Remote service		

6.6.8. TECHNICAL FEATURES THREE-PHASE OUTPUT**6.6.8.1. Rectifier features**

No.	UPS features	U. of. M.	Procurement data	Comply (Yes/No)	Bidders Remarks
1	Nominal voltage	(Vac)	400 three-phase + N		
2	Voltage tolerance at 100% load for non-intervention from battery	(Vac)	320 ÷ 480		
3	Voltage tolerance at 50% load for non-intervention from battery	(Vac)	240 ÷ 480		
4	Nominal frequency (60 Hz selectable)	(Hz)	50		
5	Frequency tolerance	(Hz)	40 ÷ 72		
6	Input power factor @ 100% load	-	0.99		
7	Input current harmonic distortion	(%)	≤3		

6.6.8.2. Battery features

No.	UPS features	U. of. M.	Procurement data	Comply (Yes/No)	Bidders Remarks
1	Standard battery	-	Lead VRLA		
2	Single blocks	-	32		
3	Battery recharge current	(A)	8		

6.6.8.3. Inverter output features

No.	UPS features	U. of. M.	Procurement data	Comply (Yes/No)	Bidders Remark
1	Nominal voltage	(Vac)	400 three-phase + N		
2	Nominal frequency (60 Hz selectable)	(Hz)	50		
3	Nominal apparent power	(kVA)	40		
4	Active power with Power Factor from 0.8 inductive to 0.9 capacitive	(kW)	36		

5	Static voltage stability with input voltage within the accepted limits and load variation from 0 to 100%	(%)	±1		
6	Dynamic voltage stability with instantaneous load variation from 0 to 100%	(%)	±3		
7	Load peak factor without derating	-	3:1		
8	Output voltage distortion with 100% linear load	(%)	≤1		
9	Output voltage distortion with 100% of non-linear load as specified in IEC/EN 62040-3 standard	(%)	≤3		
10	Switching frequency	(kHz)	18		
11	Output frequency stability with internal oscillator	(%)	0.01		
12	Overload capability: - for 10 minutes - for 1 minute - for 5 seconds	(%) (%) (%)			
13	Short circuit current: >150% I _n	(s)	≥0.5		

No.	UPS features	U. of. M.	Procurement data	Comply (Yes/No)	Bidders Remarks
1	Nominal voltage (380 – 415 selectable)	(Vac)	400		
2	Voltage range (adjustable)	(Vac)	from 180 to 264		
3	Nominal frequency (60 Hz selectable)	(Hz)	50		
4	Frequency range (Selectable from 0.25 to 10%)	(%)	±5		
5	Overload capability - continuous - for 60 minutes - for 10 minutes - for 2 seconds	(%) (%) (%) (%)	110 133 150 >200		

6.6.8.4.UPS Features

No.	UPS features	U. of. M.	Procurement data	Comply (Yes/No)	Bidders Remarks
1	Noise level measured @ 1 meter and at 100% of the load according to ISO 3746	(dBA)	≤62		
2	AC/AC performance under double conversion operation at 100% load	(%)	≥92		
3	AC/AC performance under double conversion operation at 50% load	(%)	≥92.0		
4	Performance during under digital interactive operation at 100% load	(%)	≥98		
5	Country of manufacture/origin		European countries (France, Sweden, Germany, UK) Italy, USA or Japan.		
6	Cabinet protection rating	-	IP 20		
7	Warranty		Minimum five years		

Signature of the Bidder :.....

CHECK LIST FOR BIDDERS

DRAFT

CHECK LIST FOR BIDDERS

Bidders are advised to fill the following table.

ITEM	ITB Clause	YES (tick)	REFERENCE
Form of Bid			
Addressed to the Employer?	18		
Completed?	18		
Signed?	18		
Bid Security			
Address to the Employer?	16		
Format as required?	16		
Issuing Agency as specified?	16		
Amount as requested?	16		
Validity 28 days beyond the validity of Bid?	16		
Qualification Information			
All relevant information completed?	4		
Signed?	4		
Addendum			
Contents of the addendum (if any) taken in to account?	10		
Bid package			
All the documents given in ITB Clause 12 enclosed in the original and copy?	12		
ITB Clause 19 followed before sealing the Bid package?	19		