FOREST HEADQUARTERS, ODISHA
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS
ARANYA BHAWAN, BHUBANESWAR-23

Office Order No. 1153/GIS-15/2014, Dtd. 19th the October, 2015,

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In pursuance to the PBQ Meeting Held with the bidders on 14th October 2015, the following clarifications only as addenda and corrigenda are issued keeping other relevant contents of the RFP unchanged and the RFP No 1096 Dtd. 5th October stands limited modified accordingly as under:

Modified Event Schedule:

Last Date and Time of Bid submission (By Hand or Speed Post or Courier)	4th November 2015, 04.00 PM
Date & Time of General Bid opening	6th November , 10.30 AM
Date of Technical Bid Opening	6th November , 12.30 PM
Date of Financial Bid Opening	Will be duly notified after Technical Bid Opening

Addenda and Corrigenda as changes in Various Sections of the RFP No-1096 Dtd. 5th October 2015:

Section - I

(Invitation for Bids)

1.1 Objective:

Conservator of Forests, GIS, (The Authorized Officer) invites Request for Proposals (RFP) on behalf of the Principal Chief Conservator of Forests (PCCF), Odisha, (The Purchaser) invites sealed quotations/bids from experienced and competent system integrators (Bidders) for Supply and Services in respect of the works / supply namely:

As per the Specifications and T & C in this Tender, Request for Proposal to Supply, Install, Commission 2 KVA High Performance and Harsh Environment UPS For Hp Z640 Workstations with Five Years Comprehensive Warranty Service and Support; in the Field Offices of Forest Department of Odisha , spread over entire state of Odisha.

1.2 About this bid document:

The tender document comprises of the following:

Section – I	Invitation for Bids
Section – II	Eligibility Criteria
Section – III	Scope of Work
Section – IV	Instruction to Bidders
Section – V	General Terms & Conditions
Section – VI	Technical Specifications
Section – VII	Annexures

1.3 About the Tender process:

G. General bids and technical bids shall be opened in the presence of bidders or their representative who may choose of to attend. Representatives must be through with the Bid Documents and the technicality of the product.

H. The tender is to be submitted as instructed and defined in this revised tender paper only along with all required documents as per eligibility criteria and filling all relevant annexure of this document as per the addenda and corrigenda issued under Clarifications on 19th October, 2015 in the websites .

I. In this tender OEM means "Original Equipment Manufacturer" Only.

Section - II

(Eligibility criteria)

The Bidder should have the following eligibility Criteria to participate in this Tender.

General Eligibility Criteria (Necessary support documents are to be enclosed):

D. Average annual turnover of the bidder in IT HW/SW Supply and Service Segment for last 3 (Three) financial years ending on 31 March, 2015, should not be less than Rs. 50.00 Lakhs (Fifty Lakhs of Indian Rupees). Copies of Filed Audited Statements, IT Returns, Sales Tax Returns, VAT Returns and ST Returns etc. are to be submitted to corroborate

this. Along with other documents of proof, the bidder to must submit the Firm's Bank Accounts Statements / Quarterly Abstract of the Bank Account Statement issued by the concerned bank/ banks for three financial years which are only linked to its Income Tax PAN.

Note: Affidavits from F- I can be submitted under one Notarized Affidavit

Technical Eligibility Criteria: (Necessary support documents are to be enclosed)

B. OEMs whose UPS is offered must have valid ISO 9001:2008 certifications, and the OEM must be Registered and Operating as a Company in India for more than 5 (Five) Years in Power Supply and Conditioning for Enterprise Grade IT HW.

N. The Bidder Shall Submit a Sample UPS along with the Design Details , Technical drawings on Drawing Sheets and CD/DVD related to the Circuits and Structure of the UPS as per Industry Standards on the Day of Technical Bid Opening for Evaluation and the sample may be retain by the Purchaser for Checking Specifications Compliance of the Sample Product. It is to be noted that: no cost shall be paid by the Purchaser for this sample and the Sample will collected by the Bidder from the purchaser after Technical Test and Checking on an "as and where basis". No cost shall be paid by the Purchaser to the bidders towards the Breakage or Damages done to the samples in the course of Testing. An undertaking in this regard shall be submitted by the bidder.

Section - III

(Scope of Work)

The scope of work involves the Supply, Installation, Testing, Commissioning and Providing Full Comprehensive five years onsite warranty services and support of the 2 KVA High Performance and Harsh Condition UPS for the HP Z640 Workstations in the Offices of the DFOs and RCCFs as in Table-1 within one month of placing the Purchase Order.

Table-1:

Sl. No	Name of the Items	Qty. Required	Target User/ Users
1	Internationally Reputed Brand Online UPS with all its accessories and installation kits of a 2 KVA, Minimum 120 Minutes Backup at 40-50% of the Rated Load of the Hp Z640 Work Station and operating at low input voltage (100-280 V).UPS Should be fully compatible to HP Z640 Workstations.	70	To be Installed in the various offices of DFOs and RCCF in Odisha for HP Z640 Workstations under the necessary installation protocol defined by the UPS OEM.

Section – IV

(Instruction to Bidders)

25. Bid Security:

c. The bidder will sign a contract with the purchaser within a week of issue of supply / work order and the Bidder shall submit an irrevocable Performance Bank Guarantee before signing the contract. The Performance Bank Guarantee is to be issued by a Bhubaneswar Branch of a Nationalized Bank and it will be 10 % of the Bid Value for the Contract Period. This will be invoked by the purchaser in case of default of T & C of contract by the bidder.

27. Verbal clarification and/or information given by the purchaser or its employees or representatives shall not be binding on the purchaser. Exemptions / Relaxations granted by the Government to MSEs on tenders will be extended only to the eligible bidders who are registered under MSEs Category and if and only if the majority (more than two third i.e. 66% of the value of the quoted products) of the products quoted by the bidder in the tender must be manufactured in-house as per the clause of "Approved Items of Production" in the Registration Certificate of his MSE. Valid documents in this regard must be supplied by the bidder to claim Exemptions / Relaxations under MSME.

Section - V

(General Terms & Conditions)

5. TERMS OF PAYMENTS

A. **80 %** of the contract price (i.e. cost of the Items actually supplied) shall be paid within 60 days of successful delivery, Installation, Commission and Testing of all the HW, SW, Equipments at sites with certification thereof by designated departmental authority and OEMs of supplied hardware and SW on the letter head of OEM and on submission of PBG and bill by the Bidder / SI.

B. **Rest 20%** of the Contract Price will be released on quarterly basis within two years of the date of successful commission and installation with the satisfactory performance of the supplied items as a system under full warranty support and services as defined in the technical bid criteria.

Section - VI

Minimum Technical Specifications;

Which must be satisfied for Harsh Environment and Heavy Duty 2 KVA UPS; for Hp Z640 Work Stations Computers having rated power consumption of *925 W @ 90% efficiency, Active PFC*. Bidders are requested to refer Data Sheet of Hp 640 Workstation Computer to assess the power requirement of the load.

A. General Specifications , Functionality and Characteristics of the UPS:

This specification describes the operation and functionality of a continuous duty, single phase, solid-state, static Uninterruptible Power System (UPS).

1. The UPS must utilizes double conversion online topology or its equivalent or higher technology designed to protect electronic equipment by supplying reliable, network-grade power featuring extremely tight voltage and frequency regulation. The UPS also should be features with internal bypass and input power factor correction.

2. The primary sections of the UPS are: input disconnect and filter stage, input PFC power stage, energy storage stage (DC bus capacitor bank), output power stage (inverter), AC/DC converter and a battery charger. The control of power module and fault detection logic is microcontroller based. Input disconnect and filter stage contains input

feed-back relay, input filter, transient suppression. Input PFC power stage contains non-isolated power factor correcting AC/DC converters.

3. The converter should be capable of full power operation in very wide input voltage range. The energy storage stage is a split DC bus capacitor handling seamless transitions from battery to line and vice versa as well as the low and high frequency power stages ripple. The DC/DC converter stage transfers the nominal DC battery voltage up to DC bus voltage for supplying energy to inverter stage when AC input has an outage. The inverter stage operates directly from the DC bus and produces an AC output voltage of 220/230/240VAC output. The output of UPS is either connected through a bypass relay to the inverter or to the input filtered line. UPS contains a battery charger, which operates from the AC input section directly.
4. The internal UPS batteries must be Modular, Hot-Swappable and User-Replaceable. No other form of internal batteries shall be accepted.
5. *Backup Run Time in the case of AC Main Failure and when the UPS's Battery are Fully Charged; a load at 40% of Max Sustainable Load by the UPS i.e. at 560 Watts shall not be Less Than 120 Minutes.*
6. For runtime Scalability, the provision to integrate External Battery Systems within a Tower Optimized Rack Mountable enclosure in a standard 4U Rack Format, and its connectivity should be present without further rejigging of the mother UPS System.
7. The UPS and associated equipment shall operate in conjunction with a primary power supply and an output distribution system to provide quality uninterrupted power for mission critical, electronic equipment load.
8. All the Specifications mentioned in this section of shall be satisfied by the UPS positively without fail.
9. No degradation to the specification or alteration to the specified technology is allowed in the UPS.
10. Failure to adhere the Minimum Specification or Specified Technology shall lead to the rejection of the Bid.

B. Must be Compliant to the following Standards:

1. CISPR Class A or its Equivalent or Higher

2. IEC 1000.4.2, 4.4, 4.5 or its Equivalent or Higher
3. IEC 60950
4. ISO 9001
5. ISO 14001

C. Modes of Operation:

1. Online: The input PFC power stage and the output power stage (inverter) shall operate in an on-line manner to continuously regulate power to the critical load. The input PFC stage shall provide regulated power to the load for all line and load conditions within the range of the UPS specifications. The inner battery charger shall be capable of full battery recharge.
2. On Battery: Upon failure of the AC input source, the critical load shall continue being supplied by the output power stage (inverter), which shall derive its power from the battery system. There shall be no interruption in power to the critical load during both transfers to battery operation and retransfers from battery to online operation.
3. Bypass: The bypass mode shall be used to provide transfer of critical load from the inverter output to the primary power source. This transfer, along with its retransfer, shall take place with no power interruption to the critical load. In the event of an emergency, this transfer shall be an automatic function.

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Note: Installation manual must include instructions for storage, handling, examination, preparation, installation, and start-up of UPS and the user manual must include operating instructions with comprehensive schematic diagram for the user.

D. Mechanical Design:

1. The UPS must be contained in a rugged steel cabinet with two plastic front bezels.
2. The Minimum UPS dimensions should be : (W x H x D) 43.2 x 17.5 x 45.2cm (17 x 6.89 (4U) x 17.8 in);
3. The UPS cabinet shall be Tower optimized Rack-Mount configurable having hot-swappable, user-replaceable internal batteries having internal cooling fans, external LED Indicators for various UPS functions.

E. System Characteristics:

1. System Capacity: The system is rated to be capable of supporting 2000VA or 1400W load whichever limit is reached first.
2. The UPS efficiency shall be > 89%, without degradation of output regulation as specified.
3. Input: AC input nominal voltage: 220/230/240VAC, single phase, 3 wire (L + N + G), connected via IEC-320 C20 or Equivalent connectors for IT Grade HW.

4. AC input voltage Range :
    a. 160 – 280VAC (L-N) at full load, while providing nominal charging power to the battery system;
    b. 100 – 280VAC (L-N) at 50% load, while providing 50% charging power to the battery system;
5. Input frequency range: 45-65Hz;
6. Generator Compatible for frequency fluctuations.
7. Input Power Factor: 0.97 typical.
8. Input Current Distortion: Meets the requirements of IEC61000-3-2 or its Equivalent or Higher
9. Crest Factor: 3:1.
10. UPS Output:
    a) AC Output Nominal Output: 230-240 VAC (as per selection), Single Phase, 3 wire (Phase + N + G);
    b) Output connectors: 8 x IEC 320 C13 connectors & terminal blocks
    c) Output frequency: 50/60Hz +/- 5Hz tracking or 50/60Hz +/- 0.1Hz tracking (user selectable);
    d) AC output voltage distortion: < 3% @ 100% linear load; < 8% @ 100% non-linear Load;
    e) AC output static voltage regulation: +/-1%;
    f) AC output dynamic voltage regulation: +/- 8% maximum for 100% load step at less than 10ms recovery time;
    g) Backup time on AC Main Failure, at 30% of Max Sustainable Load on the UPS shall not be Less Than 120 Minutes.
11. Overload Rating:
    a. Online: 105% - infinite; 125% - 1 minute; 150% - 30 seconds; >175% 25 line cycles;
    b. In bypass: Overload must be protected by a 16 A input circuit breaker
12. Output Power Factor Rating: 0.7 lagging to 0.7 leading.

F. Environmental:

1. Short term storage, Ambient Temperature: -20°C to 60°C (-4°F to 140°F)
2. Operating Ambient Temperature: 0°C to 50°C (+32°F to 122°F)
3. Relative Humidity: 0 to 95% non-condensing
4. Storage altitude: 0 to 3000m above sea level
5. Operating altitude: 0 to 2000m above sea level.
6. Audible noise: less than <55dBA at 1 m (3 feet).

G. Input PFC Power Stage:

1. The input PFC power stage of the UPS constantly rectifies the power imported from the mains input of the system, converting input mains AC power to DC power for precise regulation of the DC bus voltage and output power stage (inverter) regulated output power.
2. Input Current Total Harmonic Distortion: The input current's THD shall meet IEC61000-3-2 Standard or equivalent or higher at full system load, while providing conditioned power to the critical load bus, and charging the batteries under steady-state operating conditions. This shall be true while supporting loads of both a linear or non-linear type. This shall be accomplished with no additional filters, magnetic devices, or other components.
3. Input Current Limit: The input converter shall control and limit the input current draw from utility to 150% of the UPS output. During conditions where input current limit is active, the UPS shall be able to support 100% load, charge batteries at 10% of the UPS output rating, and provide voltage regulation with mains deviation of up to +/-20% of the nominal input voltage.
4. In cases where the source voltage to the UPS is nominal and the applied UPS load is equal to or less than 100% of UPS capacity, input current shall not exceed 130% of UPS output current, while providing full battery recharge power and importing necessary power for system losses.

H. Output Power Stage (Inverter)

1. The UPS output power stage (inverter) should constantly recreate the UPS output voltage waveform by converting the DC bus voltage to AC voltage through a set of IGBT switches. In both online operation and battery operation, the output power stage (inverter) creates an output voltage waveform independent of the mains input voltage waveform.
2. Input voltage anomalies such as brown-outs, spikes, surges, sags, and outages do not affect the amplitude or sinusoidal nature of the recreated output voltage sine wave of the output power stage (inverter).
3. Overload Capability: The output power stage (inverter) is capable of withstanding >175% overload for 25 line cycles or 150% overload for 30 seconds or 125% overload for 1 minute or 105% overload for indefinite length of time.
4. Output Contactor / Contact-Breaker: The output power stage (inverter) must be equipped with an output mechanical relay to provide physical isolation of the inverter from the critical bus. With this feature a failed inverter shall be removed from the critical bus.
5. Battery Protection: The inverter must be provided with intelligent monitoring and control circuits (Intelligent Charge – Discharge Controller) to limit the level of Charge and Discharge on the battery system.

I. Automatic Bypass:

1. As part of the UPS, a system automatic bypass switch is provided. The system automatic bypass shall provide a transfer of the critical load from the Inverter output to the automatic bypass input source during times when the inverter cannot support the load. Such times may be due to prolonged or severe overloads, or UPS failure. The UPS constantly monitors the output current, as well as the bypass source voltage, and inhibits potentially unsuccessful transfers to automatic bypass from taking place.
2. The design of the automatic bypass switch power path consists of a heavy-duty electromechanical bypass contactor.
3. Automatic Transfers: An automatic transfer of load to bypass takes place whenever the load on the critical bus exceeds the overload rating of the UPS. Automatic transfers of the critical load from bypass back to normal operation takes place when the overload condition is removed from the critical bus output of the system. Automatic transfers of load to bypass also take place if for any reason the UPS cannot support the critical bus.
4. Manual Transfers: Manually initiated transfers to and from bypass may be initiated through the UPS computer interface (via serial communications).

J. Battery of the UPS:

1. The UPS battery system must comprised of internal user replaceable, hot swappable, battery modules.
2. The battery jars must be housed within each removable battery module are of the Valve Regulated Lead Acid (VRLA) type.
3. The UPS must incorporate the Intelligent Battery Management system to continuously monitor the health of each removable battery module as well as external battery modules installed in extended run battery cabinets. This system shall notify the user in the event that a failed or weak battery module is found.
4. Charging: The intelligent battery management system must contains a temperature monitoring circuit and compensation algorithm that regulates the battery charging current so as to optimize battery life. The battery charging circuit remains active when in bypass and online states.
5. Additional battery modules can be added to increase runtime. These modules are hot-pluggable, allowing for easy and quick installation or replacement without the need for electrical wiring, electrician services or powering down of the UPS. The number of external battery modules that may be connected to the UPS is unlimited. UPS must have the Features, Fixtures and Capacity to incorporate External Maintenance Free VRLA Battery Modules in 4U Rack Mountable & Tower Optimized Steel Casings and Independent Maintenance Free Tubular Batteries to Extend Run Time without

compromising the core System Characteristics of the UPS Output. ***Number of Batteries for the UPS System is to be optimized for the targeted backup time.***

6. The UPS must be supplied with the internal and external battery modules (If Necessary) preinstalled but disconnected.
7. ***Internal and External Batteries must provide a Run Time backup of 120 Minutes in case of an AC Mains Failure and at Full Charged conditions of the Batteries.***

K. Display, Controls, Switches and Alarms:

1. Control Logic: The UPS must be controlled by an embedded microcontroller with necessary firmware which performs functions of :
    a. Monitoring quality of output voltage,
    b. Monitoring vital parameters of the UPS;
    c. Executing the state machine;
    d. Intelligent battery management;
    e. Remaining runtime calculation;
    f. Self-diagnostics, self-test and proactive fault detection;
    g. Communication to the central host server of the OEM or FD Odisha via serial port;
    h. Communication to the Network Interface Card or another device if equipped.
2. Display/Control Unit:
    a. A display/control should comprised of Minimum 16 LED and 2 pushbutton switches on the front side of the UPS. The display/control unit may be turned 90 degrees clockwise or counterclockwise to accommodate for the way the UPS is mounted i.e. as a Tower UPS or as a Rack-mounted UPS.
    b. The pushbutton switches should be located at the Display/Control Unit
    c. The following controls functions can be accomplished by use of the pushbutton switches located at the Display/Control Unit:
        - Turn the UPS on;
        - Turn the UPS off;
        - Initiate self-test in order to test battery condition;
        - Silence audible alarm;
        - Cold start.
        - Displaying input RMS voltage on the battery capacity LED bar graph.
3. EPO switch: The UPS shall be equipped with Emergency Power Off (EPO) terminal which can be wired so as to provide means to instantaneously de-energize the UPS and its load from a remote location in case of emergency.

4. Data displayed on the Display/Control Unit: The following indicators are available on the Display/Control Unit:
    - The UPS load LED bar;
    - The UPS is online;
    - The UPS is on battery;
    - The UPS is in bypass;
    - The UPS is overloaded;
    - The UPS is in a fault state;
    - The battery / batteries needs to be replaced;
    - The battery capacity/utility voltage LED bar
5. Audible Alarms: Using audio signal, the UPS will notify the user about important events. The following is the list of distinct audio alarms which must be functional in the UPS:
    - The UPS is on battery;
    - The UPS is on battery and the remaining battery capacity is low;
    - The UPS is shutting down due to low battery capacity;
    - The battery needs to be replaced;
    - The UPS is overloaded;
    - The UPS is in fault state;

L. Accessories:

1. Software and Connectivity:
    a. Network Adaptor: OEM must provide a Network Management Card to monitor and manage the UPS in TCP/IP network environments.
    b. Unattended Shutdown: The UPS, in conjunction with a network interface card, shall be capable of gracefully shutting down one or more operating systems during when the UPS is on a threshold battery mode.
    c. The UPS is also capable of using an RS232 port to communicate to the host computer by means of serial communications so as to gracefully shut down one or more operating systems during on a poor battery situation.

2. Remote UPS Monitoring, Configuration and Control:
    a. Direct Web Monitoring: Remote monitoring, configuration and control must be enabled on the UPS via a web browser such as Internet Explorer, Mozilla Fire Fox etc provided the UPS is equipped with a fixed IP.
    b. Web Monitoring the UPS through the PC connected with the UPS: Necessary UPS Monitoring and Control SW shall be installed by the OEM / Vendor on the PC for the Purpose.

3. Software Compatibility: All the UPS Control SW should be updated continuously with respect to the Windows OS and it must be Compatible to Windows 7 or Linux -7 onwards.

M. Installation and Execution:

Installations and Executions are to be carried out by OEM Authorized Personnel only. Operational training shall be provided by the OEM and the Vendor for site personnel and it shall include key pad operation, LED indicators, start-up and shutdown procedures, maintenance bypass and AC disconnect operation, alarm information and emergency precautions. Installation is to be executed on an OVLCPD (Overvoltage and Low Current Protection Device) in the field and it is to be provided by the Vendor.

N. Warranty Service and Support:

Five Years Full Onsite and Comprehensive Warranty service and Support by the OEM is to be ensured by the Vendor as per the Terms and Condition of this Tender.

Section - VII

(Annexures)

Note:

1. **All the Annexures pertaining to Bidder's Firm are to be signed by Executives not below the Rank of a Director / Power of Attorney holder appointed by the Company or the Promoter himself if the Bidder's Firm is proprietorship firm.**
2. **Bank Guarantees may be issued by the Nationalized Bank on their standard format for Govt. Tenders as in vogue , but it must fulfill all the requirements of the T & C of this Tender.**

Annexure-8 A

Specification Compliance Matrix (Tech Bid)

Sl. No	Minimum Specifications as Per RFP	Whether Complied
1		
2		
3		
4		

Signature and Seal of the Bidder

Annexure-8 B

Details of Battery in the UPS (Tech Bid)

Sl. No	Battery Locations	Type of Battery Used with Brand Name , Mfg. Yr. , Model Name & Made In	Battery Charactistics, Ratings with weights in Kg.	Number of Batteries	Total Weight in Kg	Max. Backup Runtime achieved in Minutes
1	Inside UPS Cabinet					
2	In External Module					
3		Total				

Signature and Seal of the Bidder

Annexure-8 C

Weights of the UPS (Tech Bid)

Sl. No	Details of Weights of the UPS	Weight in Kg
1	Weight of the UPS without any Internal Batteries or External Battery Module	
2	Weight of the Internal Batteries only	
3	Weight of the External Batteries only	
4	Weight of the UPS Casing only	
5	Weight of the External Battery Casing only	
6	Weight of the UPS with Internal Batteries	
7	Weight of the External Battery Module with its Batteries	
8	Total Weight of the UPS with Internal Batteries and External Battery Module with Batteries	
9	Average Weight of the Complete UPS per KW	
10	Average Weight of the Complete UPS per minute of Backup Runtime	

Signature and Seal of the Bidder

Annexure 8-D

Enclosure of Technical Drawings of the UPS (Tech Bid)

A. Circuit Diagram Drawing of the UPS as per Industry Standard.
B. Schematic and Structural Diagram of the UPS as per Industry Standard

Signature of the Bidder with Seal

Annexure-9

FORMAT FOR FINANCIAL BID (Fin. Bid)

Amount in Rupees including the cost of Comprehensive Warranty, Support and Services for Five Years as defined in the Technical Eligibility.

Sl. No.	Items	Quantity	Unit Cost	Pre-Tax Total Cost	Tax at current Rate	Total Cost With Tax
1	UPS with Internal Batteries as per Spec in RFP	70				
2	External Battery Module with Batteries as per Spec in RFP					
3	Installations as per Spec on LS	70				
Total Cost (In Figures)						
Total Cost (In Words)						

Signature of the Bidder with Seal

End of the Addenda and Corrigenda of the RFP No-1096, Dtd. 5th October 2015 of PCCF Odisha.

-Sd/-

Conservator of Forest, GIS

Forest Hqrs. Odisha, Bhubaneswar