Bhagyanagar Gas Ltd.

BHAGYANAGAR GAS LIMITED

(A JOINT VENTURE OF HPCL & GAIL)

BID DOCUMENT FOR

PROCUREMENT , INSTALLATION AND COMMISSIONING OF 7.5 KVA/UPS FOR CGS CUM MOTHER STATION, KAKINADA

e-TENDER

UNDER OPEN DOMESTIC COMPETITIVE BIDDING

Bid Document No.: BGL/664/2025-26

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TECHNICAL SPECIFICTAIONS

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SCOPE OF WORK

TECHNICAL SPECIFICTAIONS FOR 7.5KVA INDUSTRIAL UPS SYSTEM

MAINS INPUT	
Voltage	415 V +10% - 15% 3Ph 3W
Frequency	50 Hz ±10%
DC BUS	
DC Voltage Range	305V to 482V
Maximum DC Bus Ripple (without battery)	2% RMS
Max DC Bus Ripple (with battery)	1% RMS
OUTPUT	
Nominal AC Voltage	110/115/120/220/230/240 V
Load Power Factor - Rated	0.8
Load Power Factor - Range	0.6 to Unity
Voltage Regulation	
Steady State	±1%
100% Step Load	±5% Typical
Recovery Time to 98%	< 20 ms
Over Load	
110%	3600 Seconds
125%	600 Seconds
150%	60 Seconds
Branch Fuse Clearing Ability	30% of UPS rated current (fast acting semiconductor protection fuse)10% of UPS rated current (slow acting fuse)
Frequency	50 Hz
Bypass Synchronization Window	±1% to 6% (field programmable)
Internal Oscillator	±0.1%
Slew Rate	1 Hz/Sec
Total Harmonic Distortion	
Linear Load	<2.5%
Nonlinear Load (CF 3:1)	<5%
OPERATING CONDITIONS	
Ambient Temperature	50^0C
Altitude	1000 Meter from MSL
Humidity	95% Non condensing
Atmosphere	Non Corrosive, Dust Free, Freely Ventilated
Audible Noise @ 1metre from Panel Front	55 dBA to 75 dBA (depending on system rating and configuration)
ENCLOSURES	
Construction	CRCA Steel Sheet
Protection Class	IP41 / IP42
Finish (Powder Coated)	RAL 7032 (other colours optional)
Ventilation	Forced air (internal fans)
Cable Entry	Bottom (top optional)

TECHNICAL SPECIFICTAIONS FOR STABILIZER

Static Voltage Stabilizer (SVS) is an SMPS stabilizer for mains voltage that is AC input and AC output. Stabilizer should be able to perform directly in AC- to- AC switching, without causing any harmonic distortions. Specification for same are as below:

Input : 415V (3 phase) 50 hz
Output:230V (1 phase) 50hz
Rating: 7.5 KVA

SCOPE OF WORK:

1. **Supervision of Installation & commissioning of UPS Systems are covering**

a. Checking of positioning of panels, Termination of incoming, outgoing, battery cables within the UPS panels.
b. Checking of Termination of all Inter panel cables.
c. Physical checking of all UPS systems for internal wiring
d. Powering up and testing of UPS systems
e. Site load test of UPS systems as per HHPE quality plan (Full load should be arranged from buyer. In absence of full load, the load test shall be demonstrated at available actual load).

2. **Preventive Maintenance Services**

a. Ensures safe and reliable operation
b. Contracts include cleaning, measurements of various parameters, calibrations, functional tests, event log and power quality analysis, battery health check, hardware and software upgrades supported by Field Service Report.
c. Maintenance plan is one of the most cost-effective actions that can preserve initial investment and ensures business continuity.
d. Ensure optimal performance and to protect critical application from potential downtime.

3. **Break Down Maintenance & EMERGENCY CALL**

a. In the event of an emergency call, our service expert, located as close to your site as possible, guarantees a quick intervention time with the help of 24x7-365 days.
b. With the help of powerful diagnostics software, quick troubleshooting is possible by a service expert, which guarantees a short MTTR (Mean Time to Repair).
c. Corrective actions are performed (Part replacement, adjustments and upgrades of software's etc.)

4. **Built in Isolation Transformer**

In built isolation transformer shall be provided in both input and output side.

5. **Cooling**

Cooling of the UPS shall be by forced air and there should be redundant fans.

6. **Grounding**

The AC output neutral shall be electrically isolated from the UPS chassis. The UPS chassis shall have an equipment ground terminal. Provisions for local bonding shall be provided.

7. **Wiring**

Installation and required accessories like cables, lugs etc will be in the scope of supplier and Wiring practices, materials and coding shall be in accordance with the requirements of the National Electrical Code (NFPA 70). All bolted connections of bus bars, lugs, and cables shall
be in accordance with requirements of the National Electrical Code and other applicable standards.

Conformity to standards, the system must conform to the following standards:

- Safety: EN62040-1.
- EMC emissions: EN62040-2.
- EMC immunity: EN62040-2 class C2 and C3.

8. Display & Metering:

- Input AC voltage line-to-line/ line-to-neutral for each phase
- Input AC current for each phase
- Input frequency
- Battery voltage and DC link voltage
- Battery charge/discharge current
- Output AC voltage line-to-neutral
- Output AC current
- Output frequency
- I/P & O/P Apparent power
- I/P & O/P Active power
- I/P & O/P kWh meter
- Battery time left during battery operation
- The total operating time of the UPS and inverter

9. Alarm Messages

The interface must be able to display at least the following status or event information, and UPS monitoring should be web based and user friendly.

- Input power out of tolerance
- Battery charger problem
- Battery test failed
- Low battery warning
- Low battery shutdown
- DC bus overvoltage
- Bypass frequency out of range
- Load transferred to bypass
- Excessive retransfers attempted
- Static switch failure
- UPS output not synchronized to bypass power
- Output under voltage
- Output overvoltage
- Output over current
- System output overloaded
- Load transferred to bypass due to overload
- Overload shutdown Control error
- Critical power supply failure

- Load transferred due to internal protection
- External shutdown (remote EPO activated)
- Fan failure
- Over temperature shutdown
- UPS is on battery operation
- UPS is on bypass operation
- Battery mode with mains supply / no mains supply
- battery low charge warning
- battery on fast charge
- abnormal battery recharge voltage
- minimum battery voltage
- battery fault
- battery charge circuit broken
- battery charger system fault
- overload alert
- ventilation fault alert
- out of range temperature/humidity alert
- standby power supply out of tolerance

A predictive/statistical algorithm and interpretation of logged data (number, duration and type of events) regarding:

- out of tolerance Input voltages
- overloads
- battery mode operation
- switching to standby power supply
- over- temperature

The UPS must predict potential criticalities for the UPS itself, due to ambient conditions, in advance and alert the maintenance service / monitoring system.

10. Diagnostics

The system will be equipped with a microprocessor able to run full machine diagnostics to determine:
Self-compensation of components to ensure stable settings over time.
Acquisition of the main diagnostic and monitoring information by computer (local or remote);
First installation procedure wizard.
Full test procedure at full load on UPS, with no further external loads (auto-charge mode)

- rectifier.
- inverter.
- bypass.
- power bus.
- cables, contactors and fuses.

11. Uninterrupted Transfer / Retransfer

The transfer control logic shall automatically turn on the static transfer switch, transferring the critical AC load to the bypass source, after the transfer logic senses any of the following conditions:

- Inverter overload capacity exceeded
- Critical AC load overvoltage or under voltage
- Battery protection period expired
- Out of tolerance inverter input DC voltage
- Over temperature
- Inverter fault

Retransfer of the critical AC load from the bypass source to the inverter output shall be automatically initiated unless inhibited by manual control.

12. Maintenance bypass

The manual bypass switch will be provided internally and must ensure that equipment downstream of the UPS is supplied directly by the UPS upstream power source when rectifier, inverter and static switches are open. Switching to the manual bypass and back will be possible without load supply interruption (Make Before Break).

13. Replacement Parts Stocking

Parts shall be available through an extensive network to ensure around-the-clock parts availability throughout the country. **Recommended spare parts shall be fully stocked by local field service personnel (in Kakinada office) with back-up available from national parts center and the manufacturing location. The national parts center Customer Support Parts Coordinators shall be on-call 24 hours/day, 7 days/week, and 365 days/year for immediate parts availability. Tenderers may also produce Kakinada service center address along with strength support in the form of escalation chart. The UPS systems are going to feed the power to very critical equipment's, and it is the responsibility of local service team to attend any emergency immediately during warranty period as well as post warranty period. Hence, service center at Kakinada is very much essential.**

14. Other Protections

- It must have Generator Compatibility.
- Must have complete protection for EMI / RF as per the IEC standard.
- Units have built in surge, spike and line noise protection.
- It should have Intelligent Battery Management system
- UPS should be compact and with small footprints.
- UPS sound level should be within the limit as per the standard.

15. Warranty/Guaranty:

The equipment's supplied shall be guaranteed against all types of defects for a period of one year (1 year) from the date of handing over of the equipment to BGL after successful completion of acceptance testing. Any defects in the system/sub-assemblies found within the guarantee period shall be rectified/replaced by the supplier free of cost. During this period, servicing at quarterly interval or earlier, as prescribed by the manufacturer and as mutually agreed to, shall be carried out free of cost Supplier shall also indicate the service facility they can offer at the place of installation and the telephone number and address of their service center.

During the warranty period, breakdown call response time should be within 4 hrs in all working hours and even during after office hours and weekends also. The track record of the firm in implementing and maintaining similar UPS systems, the nearest local (Kakinada) service establishment and the promptness in attending to service/breakdown calls shall also form basis of tender evaluation

Annual Maintenance Contract (AMC) After warranty, the offer should have separate component of AMC for three years.

Note: The Contractors shall submit all technical supporting document details of the system along with the technical bid for evaluation purpose.

Bidder must visit the UPS installed stations once in a quarter or 04 months for preventive maintenance during the warranty and post warranty period of 03 years.

In addition to above mentioned point bidder must attend breakdown maintenance of the UPS supplied to BGL in this 04-year period as when required without any additional cost to BGL. Also, all spares are covered under the CAMC contract.

16. DELIVERY

- The item should be delivered to BGL mother station in Vakalapudi, Kakinada within 14-16 weeks from date of receipt of purchase order, installation shall be done within 02 days from date of supply at site.

- The delivery schedule should be adhered to strictly. If the tenderer fails to Complete the supply within the time stipulated, the order for the Supply and Installation of 7.5 KVA UPS to BGL CNG station will be liable to be cancelled. In such a case, the Security Deposit will be forfeited.

- To take care of the situation arising out of the failure of the tenderer to supply as per the schedule and quality and norms, the orders placed with such tenderer will be cancelled with sufficient cause.

17. PAYMENT TERMS

For Supply portion:

- 70% payment will be released against the complete supply of all materials at site & acceptance of the materials by BGL at site within 15 days as per BGL's payment policy and remaining 30% will be released after successful installation & Commissioning of both UPS along with Battery Bank at respective location, certification by BGL EIC and receipt of documents mentioned in Technical Specification section

For Comprehensive AMC charges:

- 100% payment will be released after the completion of annual services at designated BGL locations. This means that once the warranty period is over and the CAMC begins, the payment for each year's CAMC will be made at the end of that respective year (i.e., after the completion of the second year, the payment for that year's AMC will be released). certification by BGL EIC and receipt of documents mentioned in Technical Specification section, service reports, visit reports, etc. The payments will be released after deduction of IT and other taxes as per prevailing statutory norms.

18. PRICE REDUCTION SCHEDULE

In the event of failure of the successful tenderer to deliver the system within the stipulated time, without prejudice to other remedies under the contract a penalty equivalent to 0.5% (Half Percent) of the value of delayed goods will be levied per week with a maximum of 5% of the contract value. If requested by the tenderer, it is the discretion of the EIC-BGL to grant extension of time with penalty/without penalty and to purchase the stock from any other source at the prevailing market rate at the risk and responsibility of the successful tenderer and to claim any loss sustained by BGL, Hyderabad in the transaction from the tenderer besides forfeiting Earnest Money Deposit and Security Deposit.

19. FORCE MAJEURE:

a. If, at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war or hostility, acts of the public enemy, civil commotion, sabotage , fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts or act of God (hereinafter referred to as events) provided notice of happenings of any such eventuality is given by either party to the other within 21 days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate this contract nor shall either party have any claim for damages against other in respect of such non-performance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such an event come to an end or cease to exist, and the decision of the Purchaser as to whether the deliveries have been so resumed or not shall be final and conclusive. Further that if the performance in whole or part of any obligation under this contract is prevented or delayed by reasons of any such event for a period exceeding 60 days, either party may, at its option, terminate the contract.

b. Provided, also that if the contract is terminated under this clause, the Purchaser shall be at liberty to take over from the Supplier at a price to be fixed by the purchaser, which shall be final, all unused, undamaged and acceptable materials, bought out components and stores in course of manufacture which may be in possession of the Supplier at the time of such termination or such portion thereof as the purchaser may deem fit, except such materials, bought out components and stores as the Supplier may with the concurrence of the purchaser elect to retain.

20. TERMINATION FOR DEFAULT:

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default, sent to the supplier, terminate this contract in whole or in part

a. if the supplier fails to deliver any or all the goods within the time period(s) specified in the contract, or any extension thereof granted by the purchaser.
b. if the supplier fails/delays to perform any other obligation(s) under the Contract; and
c. if the supplier, in either of the above circumstances, does not remedy his failure within a period of 15 days (or such longer period as the purchaser may authorize in writing) after receipt of the default notice from the purchaser.

In the event the purchaser terminates the contract in whole or in part pursuant to Clause 18.1 the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered and the supplier shall be liable to the Purchaser for any excess cost for such similar goods. However, the supplier shall continue the performance of the contract to the extent not terminated.

21. TERMINATION FOR INSOLVENCY:

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, without compensation to the supplier, if the supplier becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser. Upon every such reference, the assessment of the cost incidental to the reference and award respectively shall be the discretion of the arbitrator only.

22. **CONTRACT PERFORMANCE BANK GUARANTEE**

FOR SUPPLY:

The successful bidder shall furnish the Contract Performance Bank Guarantee (CPBG) equivalent to 05 (Five) % of the total FOT order value exclusive of taxes & duties against supply portion including installation and commissioning within a period of 30 Days from the date of issue of LOI/ Purchase Order/Work Order. The CPBG should initially be kept valid for 90 days beyond the guarantee / warranty/ defect liability period.

FOR CAMC:

The successful bidder shall furnish the Contract Performance Bank Guarantee (CPBG) equivalent to 05% of the Annualized Comprehensive AMC value (excluding all taxes and duties) shall be submitted within 30 Days of start of each comprehensive AMC. The CPBG should be valid for 90 days beyond the expiry of entire Comprehensive AMC period.

Or

Initial security deposit (ISD) @ 2.5% of the annualized Comprehensive AMC value (excluding all taxes and duties) shall be submitted within 30 Days of start of each comprehensive AMC and deduction @ 2.5% of RA bill subsequently from RA bill till the total amount of security deposit (including ISD and deduction amount) reaches 5% of annualized Comprehensive AMC value.

The CPBG should be valid for 90 days beyond the expiry of entire Comprehensive AMC period

SECTION 08
SCHEDULE OF RATES (SOR)

BHAGYANAGAR GAS LIMITED

SCHEDULE OF RATES

Tender No:- BGL/664/2025-26

Tender Name:- Procurement , Installation and Commissioning of 7.5 KVA/UPS for CGS Cum Mother Station, Kakinada

S.NO	Description of Work	UOM	QTY	Unit Rate inclusive of all charges except GST (Rs.)	Sub Total inclusive of all charges except GST (Rs.)	GST%	GST Amount (Rs.)	Total Amount Inclusive of GST (Rs.)
1	Supply of Hitachi Make 7.5 KVA Stand Alone UPS System along with 415 VAC, 3-Phase 4 Wire 50 Hz Input and 230 VAC, 1-Phase 2 Wire, 50 Hz Output. System consists of following: 1. 1 X 100 % rated SCR based 6 Pulse Rectifier cum Chargers. 2. 1 X 100 % rated IGBT inverter using Pulse Width Modulation (PWM). 3. Automatic Bi-Directional Static Switches. 4. Output Isolation Transformer. 5. Manual Bypass Switch for easy maintenance. 6. Required AC/DC Switch Gears. 7. Enclosure Protection: IP-42 8. Design Temperature: 45 deg C 9. **Bypass: Solid State Voltage Stabilizer (SSVS)** Supervision of Installation and Commissioning Charges. **Note: Above rate includes loading, transportation, unloading, packing, forwarding, freight & insurance.**	EA	1					

Digitally signed by PRADEEP KUMAR YADAV
Date: 2025.09.24 18:32:16 IST

2	Annual Maintenance Contract (AMC) of 7.5KVA, Hi-Rel make UPS System, including all spare parts, manpower, tools and tackles but excluding batteries for Three Years Period.	Year	3					
Grand Total Amount (including all charges and GST)								**0.00**

Digitally signed by PRADEEP KUMAR YADAV
Date: 2025.09.24 18:32:16 IST