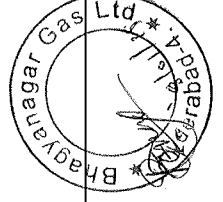


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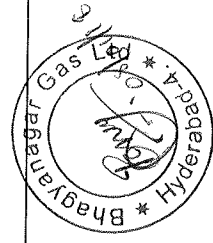
ITEM : Supply of Smart Metering System for Hyderabad, Vijayawada and Kakinada CGD projects

REPLIES TO PRE BID QUERIES

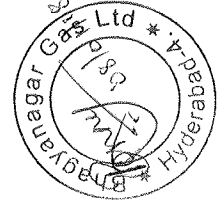
| SL. No. | Heading & Clause No. | Page No & Volume. | Bidders Query / Clarification | BGL CLARIFICATIONS |
|---------|---|-------------------------------------|--|-----------------------------|
| 1 | Delivery Schedule | Volume II of II Pag No.:18 of 49 | The delivery period of 3 months is grossly inadequate for delivery of Commercial Diaphragm Meter. As the meters are manufactured outside India and considering the Document approval, transportation time and the TPI, We would request BGL to kindly consider delivery period of atleast 4-5 months from the date of FOI/PO. | Tender conditions prevails |
| 2 | Compensation for delay (Price Reduction / Liquidated Damages) | Volume II of II Pag No.:11 of 49 | Bidder requested to confirm the Price reduction schedule shall be applicable only on undelivered portion. | Tender conditions prevails. |
| 3 | 8.0 Inspection | Volume II of II Pag No.: 9 of 49 | All the commercial meters are manufactured in Europe. Considering the quantity of commercial meters and the difficulties faced by production department for inspection of the small quantities and the disruption in the production and considering the commercial implication for the same which is more than the cost of meters, bidder requested BGL to kindly waive of the Third party inspection for Commercial meters at the factory. All relevant documents and factory calibration report can be submitted and can be reviewed by TPI in India. They can also conduct the visual Inspection of the meters in India. All the meters supplied are MID approved and as per EN:1359-2006-A1. | Tender conditions prevails. |



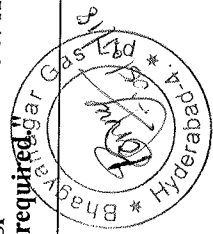
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|-----------------------------------|--|--|--|
| <p>4 Scope of work</p> | <p>Volume II of IIPag No.: 22 of 49</p> | <p>SIM Card is usually provided by the Owner as the same require registration in the name of Owner which require lot of Legal documentation form BGL/Owner. It also needs control over the service Provider for the proper functioning of supplied sim cards. It is therefore, practical for the Owner to provide the sim cards. Hence we request BGL/MECON to please remove the supply of Sim Cards from the scope of Supply. It is technically not possible for the Bidder to provide simcards for the use of BGL with the new regulaions.</p> | <p>The SIM cards, telecom services, etc. shall be in the name of the purchaser only. Bidder's scope includes engaging telecom service provider and establishing the GPRS/GSM communication network for smart metering operations along with supply and installation of SIM cards and all other necessary equipment, accessories, etc. including liasoning for necessary approvals, monitoring, controlling, if required. Finalization of Service provider shall be done only after approval of purchaser. All initial & fixed charges, one time charges (OTC), hardware/software charges, advance charges/payments (Including advance rentals) shall be in bidder's scope. However actual Monthly rental/bandwidth usage bills will be paid by BGL at actuals after completion of the month from the day of commissioning.</p> |
| <p>5 Codes and standards, 4.0</p> | <p>Volume II of II Pag No.: 23 of 49</p> | <p>As per our understanding all meters shall compulsorily comply with the requirements of PNGRB standard and shall have valid EC-Type approval certificate which conforms to latest EN 1359:1999+ A1:2006 standards. As per the PNGRB requirements offered Gas flow meters shall be certified for custody transfer (Weight & Measurement) of natural gas complying to relevant standard and codes by internationally recognized certification agencies, please confirm our understanding.</p> | <p>Bidder understanding is correct</p> |



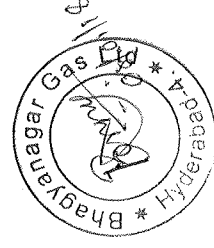
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| 6 | Material Requisition | Volume II of II Pag No.: 34 of 49 | Please note that For Commercial Meters the cut off valve is External, fitted on the meter. Bidder requested for the acceptance of the Commercial Meters with external Valve. | External valves for prepaid type commercial meters is acceptable. However, in such case the valve and the meter shall be located in a secured enclosure to avoid tampering. |
| 7 | Datasheet of Commercial Diaphragm Meter | Volume II of IIPage No. 37 of 49 | Bidder claimed acceptance for For G16 and above meters that as per the prevailing standard and practice the maximum allowable pressure drop for meters above G16 is upto 3mbar. | Tender conditions prevails. |
| 8 | Datasheet of Commercial Diaphragm Meter | Volume II of II Page No. 37 of 49 | Bidder requested to confirm separate enclosure required for commercial meters. | Separate enclosure is required for commercial meters. |
| 9 | Datasheet of Commercial Diaphragm Meter | Volume II of II Page No. 35,37 of 49 | The diaphragm gas meters are volumetric gas meters where the volume is measured by periodical filling and emptying of several measuring chambers with deformable (moving) partitions (diaphragms) usually designed for long run. As per the clause 4.4 of EN1359 Meters meeting the requirements of this standard except for Annex F are deemed suitable for installation in closed (indoor or outdoor with protection as specified by the manufacturer) locations with condensing humidity. If the manufacturer declares that the meter is suitable for installation in open (outdoor without any protection) locations with condensing humidity then it shall also meet the requirements of Annex F. Bidder requested BGL for acceptance of IP54 also. | IP54 or better is acceptable. |



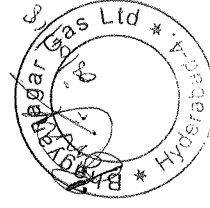
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| 10 | | | <p>Bidder requested to clarify the Flow / Service as below: (For item no. B.1.0) For G6: Qmax: 10 m3/hr, Qmin: 0.06 m3/hr (For item no. B.2.0) For G10: Qmax: 16 m3/hr, Qmin: 0.1 m3/hr (For item no. B.3.0) For G16: Qmax: 25 m3/hr, Qmin: 0.16 m3/hr (For item no. B.4.0) For G25: Qmax: 40 m3/hr, Qmin: 0.25 m3/hr Bidder requested to confirm the same.</p> | <p>Flow/ Services as mentioned in Datasheets or better is acceptable.</p> |
| 11 | | | <p>Bidder requested for acceptance of Standard Index for meters upto G6 have 8 digit cumulative Index and have 3 decimal points(00000.000).</p> | <p>8 digit cumulative Index and have two /more decimal points is also Acceptable</p> |
| 12 | Scope of Work, Clause No. : 2 | Page 22 of 49 of, Volume II of II | <p>Integral digital display for the meters allow only a single solution provider to provide their solution to meters manufacturer. Digital display also cause drainage of battery life by reducing more than half and is not commercially viable. Hence bidder proposed for Meter Index which is much readable .</p> | <p>Tender condition prevails</p> |
| 13 | Technical Data Sheet "Power Supply" | Page 36 of 49 of Vol II of II | <p>Bidder assumption / understanding that the Battery life of MIU is 7 Years and requested BGL to specify the minimum life of MIU.</p> | <p>Tender condition prevails</p> |
| 14 | Clause no. 4.0 | Page 23 of 49 of Volume II of II | <p>Bidder requested to submit approval of Quoted Model from Weights & Measurement Department (India).</p> | <p>Tender condition prevails</p> |
| 15 | Clause no. 4.2.d "AMR System" | Page 23 of 49 of Volume II of II | <p>Bidder requested to amend AMR certification from statutory body from PESO/CCOE to ATEX/CCOE</p> | <p>Clause 4. Codes & Standards, Under Clause 4.2 (AMR System), Sub point (a) "PESO/CCOE Nagpur certification, if required" to be read as (a) "CCOE Nagpur certification / ATEX certification, if required."</p> |



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| 16 | Automated Meter Reading (AMR) SYSTEM, Clause no. 2, | Page 28 of 49 of Volume II of II | All Meter Interface Units (MIU) shall capture the pulses from the Meter Index using Inductive Pulse Technology / Magnetic Pulse Technology. Bidder would like to inform that magnetic reed switch technologies meters are highly prone for tampering from external magnet/ magnetic field / vibrations in AMR system. Hence, idder requested BGL to consider Meter with any other technology from Magnetic Pulse to avoid Magnetic Tampering. | Tender condition prevails |
| 17 | | | Bidder raised query to accept Approval of Model from Weights & Measurement Department (India) as per Lega Metrology Act -2009-Notification is required | Type Test/ Approval certificates / Approval of Model from Weights & Measurement Dept. (India) is accepted. |
| 18 | Clause no. 4.0 , Codes and Standards, | Page 23of 49 of Volume II of II | Bidder raised the query that in addition to Valid type examination certificate/ compliance certificate from authorized certification agency as per ISO 1359/A:12006/latest standards whether approval of Model from Weights & Measurements(India) required. | Both Certifications are required. |
| 19 | Evaluation and Comparison of Bids | Page 13 of 92 of Vol I of II | Bidder requested to split the SOR in two groups - Walk by systems and Fixed by Systems separately to have fair competition. | Tender condition prevails |
| 20 | | | Bidder requested to split SOR to Group Wise/ Item wise evaluation. | Tender condition prevails as per Evaluation and Comparison of Bids in Section -I. |



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| 21 | Scope of Work, Clause : 2.02 & 2.03 | Page 22 of 49 of Vol I of II | <p>To make our hardware compatible with existing HES software, Bidder will need protocol details. In previous tenders, vendor had asked huge cost to share the protocol and make the system compatible to their system. Besides this even if protocol details are made available, it will take lot of development time and that development too would start only when tender is awarded to someone which will in turn take at least 3-4 months to adapt AMR hardware to existing HES software. Thus to avoid that and to avoid monopolistic situation, bidder proposed to supply their server hardware and software and will absorb this additional cost in bidders price. Vendor/ Bidder having existing software might not need to quote and new bidder/vendor with different system can quote. The evaluation shall still be on overall basis thus putting no extra cost implication to BGL.</p> | <p>Bidder(s), who are unable to integrate with existing system, shall provide server, software & all other required accessories for proper functioning of system, <u>without any additional financial implication to BGL.</u></p> <p>Specifications for the server, software, accessories etc. shall be as per the Annexure-I enclosed.</p> |
|----|--|---------------------------------|---|---|



Annexure-I to Pre- Bid Queries

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ITEM : Supply of Smart Metering System for Hyderabad, Vijayawada and Kakinada CGD projects

Technical Specifications for supply of Server, software and other related accessories , if bidder is unable to integrate with existing system.

1. HARDWARE PLATFORM FOR CONTROL SYSTEM

Complete set of control room hardware including 1set of redundant servers, operator's work station, parallel redundant UPS, printer, Ethernet switches, routers, firewall, network components, cables required for successful operation of smart metering system shall be supplied.

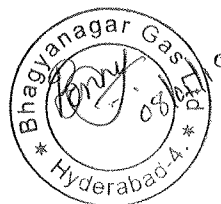
At present the Smart metering system is planned for number of consumers at each city as indicated in following table. At later stage during future expansion M/s BGL has planned for providing Smart metering system for total 2,40,000 Domestic consumers & 2000 commercial consumers for Hyderabad city, 1,20,000 Domestic consumers & 1000 commercial consumers for Vijayawada city, 1,20,000 Domestic consumers & 1000 commercial consumers for Kakinada city. Accordingly, the bidder shall supply the Hardware/Server system of capacity for catering to the total quantities as indicated in the following table. The Server shall be compatible for integration of any MIU/HHU/DCU at a later stage during future expansion.

| | Number of Domestic Consumers | Number of Commercial consumers |
|-----------------------------|-------------------------------------|---------------------------------------|
| Quantity planned at present | 27300 | 150 |
| Server Scalable upto | 500000 | 5000 |

Bidder shall ensure necessary support from OEM for the Hardware platform/ systems for total three years.

Servers shall have the following minimum design features and shall be identical and interchangeable:

- Quad Core Xeon Processor or latest configuration (2.5GHz or above)
- Minimum 128 GB RAM and shall be expandable
- Minimum 1TB SAS Hard Disk Drives
- SAS RAID 6 Array Controller
- Hard Disk Drives shall be Hot Swappable
- Ports: Serial, Parallel, USB (4nos), DVI, HDMI, PS2, VGA
- Ethernet TCP/IP, 1gbps, 2 network cards with 2 ports each
- QWERTY Keyboard— Optical Scroll Mouse
- DVD-RW for data backup and installation
- High Resolution 1680×1050, 22” LCD monitor with 32-bit color support
- Video graphics controller with dynamic graphic capability
- Dual chassis fan with effective air circulation
- Windows Server 2012 with license, recovery media, drivers, antivirus



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- Operating condition: Temperature: 10° to 35° C; Relative Humidity: 20% to 80% (non condensing); Voltage: 230V AC.

The preferred vendors for server are Dell/ IBM/ HP and for Ethernet switches are CISCO/ Nortel/ Hirschmann/ D-Link.

Operator Workstation shall have following minimum design features and shall be identical and interchangeable:

- Core i5 4core Processor or latest configuration (preferred 2.5GHz or above)
- Minimum 4 GB RAM and shall be expandable
- Minimum 1TB SATA Hard Disk Drives
- Ports: Serial, Parallel, USB (4nos), DVI, HDMI, PS2, VGA
- Ethernet TCP/IP, 1gbps, 2 network cards with 2 ports each→
- QWERTY Keyboard
- Optical Scroll Mouse
- DVD-RW for data backup and installation
- High Resolution 1680×1050, 22” LCD monitor with 32-bit color support
- Video graphics controller with dynamic graphic capability
- Dual chassis fan with effective air circulation
- Windows 7 or better with license, recovery media, drivers, antivirus
- Operating condition: Temperature: 10° to 35° C; Relative Humidity: 20% to 80% (non condensing); Voltage: 230V AC

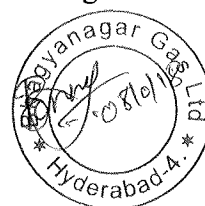
The preferred vendors for Operator Workstation are HP, Dell, IBM.

UPS shall have the following minimum design features:

| | | |
|------------------------------|---|-----------------------------|
| Parallel Redundant UPS | : | 1 Set |
| Capacity | : | 5 KVA |
| Incoming power supply system | : | 230V, Single ph. AC, 50 Hz |
| System neutral | : | Earthed |
| Insulation level | : | 2.5 kV |
| System short circuit level | : | 50 kA for 1 second |
| Output Voltage | : | 230V, Single ph. AC, 50 Hz. |

UPS shall be parallel redundant with load sharing mode. UPS shall be provided with SMF (Sealed Maintenance Free) battery with backup time of at least 1 hour for full load. The UPS shall be as per IEC standards. The UPS shall include power input device, rectifier unit, battery unit, inverter unit, automatic by-pass unit with SCVS, and isolation transformer at input & output. Facility shall be provided for manual transfer of load from inverter to bypass. Transient/surge protection circuit shall be provided in the input circuit to rectifiers to protect the UPS from surges and voltage spikes.

The UPS Panel shall be unitized construction, free standing, floor mounted and indoor type designed for bottom entry of cables with enclosure conforming to IP-41. Same shall be



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with anti vibration Pads of min 15 mm thick. Units shall be provided with redundant cooling fans and louvers, dust and vermin proof. The panel shall be sheet steel clad, Min 1.6 mm thick for panels & for doors and 2.0 mm for load bearing members with illumination with CFL lamps, door switches, space heaters and sockets for soldering. All control block shall be plug-in type with test sockets. Units shall be self contained and serviceable. Paint shade shall be RAL-7035. Lifting hooks or eyebolts on the top at the four corners.

The UPS Distribution board shall be of suitable size considering power supply to control room equipments of walk-by type, fixed type, prepaid type smart metering system. 20% spare feeders shall be considered

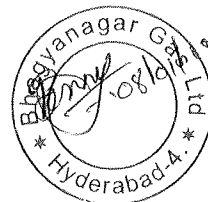
The preferred vendors for UPS are Hirel/ DB Power/Libert/ APC and Wipro/ HP for printer.

2. SOFTWARE

The bidder shall install the licensed copy of SQL/Oracle based AMR software on Centralized Remote Server (Redundant) for remote communication of these equipments. Licensed copy of AMR software and other necessary software for the Smart gas metering shall be provided. All the software licenses shall be in the name of 'BGL'.

The requirements of AMR Software shall include but not limited to those specified hereunder:

- The AMR software shall be user-friendly and easily configurable.
- The AMR system shall be capable of collecting the meter readings data from all the MIU/HHU/Mobiles/DCU units.
- The AMR system (MIU/HHU/Mobiles/DCU units) shall be easily configurable remotely, as per the requirement of BGL.
- The AMR system shall be capable of synchronizing with SAP system or with any other software, as per the requirement of BGL.
- The AMR system shall be capable of scheduling the meter readings as per the requirements of BGL.
- The system shall be able to generate the various exceptional reports on tamper events, consumption data and communication link failure.
- AMR software shall have provision for modifying / adding & configuring at later stage.
- The system will generate an alarm for any tamper of the MIU or DCU installed on the site, for volumes registered by the gas meter above and below the preset threshold values, Meter stopped detection if no consumption over a configurable period, reverse meter detection & backflow volume. The alarm will not be reset unless otherwise being acknowledged, either through remote terminal or on-site by authorized person (in case of RF communication failure). It will be possible to change the preset values by BGL personnel authorized for the same.
- At present the Smart metering system is planned for 15,500 nos. Domestic consumers & 800nos. Commercial consumers. The software system shall be scalable and capable



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of being expanded & replicated at later stage during future expansion to the quantities as indicated in this technical specification. Accordingly, the bidder shall supply the software & obtain the necessary software licenses for the same capacity.

- The software shall be compatible for integration of any MIU/HHU/DCU at a later stage during future expansion.
- AMR software APP shall be compatible to enable downloading in other android mobile with security feature.

The AMR system shall provide the following alarms as minimum:

- Any tamper events.
- Communication failure.
- No consumption for more than a configurable tenure.
- Low battery
- Unread meter.
- Volume below / above pre-decided threshold values
- Any other unforeseen consumption, etc.

Successful bidder for Group-B shall load the AMR software for prepaid type Smart Metering System into the Server supplied by Successful bidder for Group-A. The successful bidder for Group-A shall provide necessary support required for the same. The successful bidders for each group shall be responsible for successful commissioning of the respective system supplied by them.

